CAFB 07

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 27TH FIGHTER WING (ACC)
CANNON AIR FORCE BASE NEW MEXICO

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NMED Hazardous
Waste Bureau

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Commander
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Cannon AFB NM 88103-5003

Mr. James Bearzi
Chief Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East Building 1
Santa Fe NM 87505-6303

Subject: Petition for No Further Action (NFA) for Landfills 3, 4 and 25

Dear Mr. Bearzi

In June 2006, Cannon Air Force Base (CAFB) submitted in person the Petition for No Further Action (NFA) document dated May 2006 for three Landfills (LF) 3, 4 and 25 located at CAFB. However, the submittal of the NFA document was not official for New Mexico Environment Department (NMED) to start the review/fee process.

The purpose of this official request is to support the determination that NFA is required for sites LF-03, LF-04 and LF-25 based on the NMED NFA Criterion 5 and to formally request a Class III Permit Modification of the CAFB's Hazardous Waste Facility Permit No. NM7572124454. If this petition meets with your approval, we will submit a formal Class III Permit Modification requesting the subject sites be placed on Table 2 (List of Solid Waste Management Unit Not Currently Requiring Corrective Action) of Cannon AFB Hazardous Waste Facility Permit No. NM7572124454. If you have any questions, please contact Ms. Kristi L. Doll at (505) 784-1098.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who managed the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Sincerely

FOR SCOTT D. WEST, Colonel, USAF

Global Power for America

PETITION FOR NO FURTHER ACTION
FOR
LANDFILL NO. 3 (LF-03/SWMU 105)
LANDFILL NO. 4 (LF-04/SWMU 104)
LANDFILL NO. 25 (LF-25/SWMU 97)
CANNON AIR FORCE BASE, NEW MEXICO

Prepared for

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Contract No. F41624-03-D-8602
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This No Further Action Request has been prepared by HydroGeoLogic, Inc. (HGL) for the Air Force Center of Environmental Excellence (AFCEE) under the 4-P Contract F41624-03-D-8602, Contract Delivery Order 037. This request has been developed to address three inactive landfills located on Cannon Air Force Base (AFB), New Mexico; specifically:

- Landfill No. 3 (LF-03), Solid Waste Management Unit (SWMU) 105;
- Landfill No. 4 (LF-04), SWMU 104; and
- Landfill No. 25 (LF-25), SWMU 97.

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TABLE OF CONTENTS

Page

1.0 INTRODUCTION 1-1
1.1 PURPOSE 1-1
1.2 REGULATORY FRAMEWORK 1-1
1.3 REPORT ORGANIZATION 1-2

2.0 CANNON AFB OVERVIEW 2-1
2.1 LOCATION 2-1
2.1.1 Land Use 2-1
2.1.2 Potable Water Supply 2-1
2.1.3 Ecology 2-1
2.2 FACILITY HISTORY 2-2
2.3 WASTE HISTORY 2-2
2.4 ENVIRONMENTAL SETTING 2-3
2.4.1 Climate 2-3
2.4.2 Physiography 2-3
2.4.3 Hydrology 2-4
2.4.4 Geology 2-4
2.4.4.1 Surficial Soils 2-4
2.4.4.2 Subsurface Lithology 2-5
2.4.5 Hydrogeology 2-6

3.0 LANDFILL NO. 3 (LF-03/SWMU 105) 3-1
3.1 DESCRIPTION 3-1
3.2 WASTE HISTORY 3-1
3.3 ENVIRONMENTAL SETTING 3-1
3.3.1 Topography 3-1
3.3.2 Hydrology 3-1
3.3.3 Geology 3-2
3.3.4 Hydrogeology 3-2
3.3.5 Ecology 3-3
3.4 SUMMARY OF PREVIOUS INVESTIGATIONS 3-3
3.4.1 IRP Phase I 3-3
3.4.2 IRP Phase II Presurvey 3-4
3.4.3 IRP Phase II, Stage I 3-4
3.4.4 Cannon AFB RCRA Facility Assessment 3-5
3.4.5 Cannon AFB RCRA Part B permit 3-6
3.4.6 Landfill No.3 RCRA Facility Investigation 3-6
3.4.7 RFI Phase II 3-9
3.4.8 Groundwater LTM Activities 3-9
3.4.9 Statement of Basis 3-11
3.5 CONCEPTUAL SITE MODEL 3-11

TABLE OF CONTENTS (continued)

Page

3.5.1 Nature and Extent of Contamination 3-11
3.5.1.1 Soils 3-11
3.5.1.2 Groundwater 3-12
3.5.2 Contaminant Migration Pathways 3-12
3.5.2.1 Soil to Air Migration (compound volatilization and fugitive dust transport) 3-12
3.5.2.2 Surface Water Runoff Discharge 3-13
3.5.2.3 Soil to Groundwater Migration 3-13
3.5.2.4 Uptake by Plants and Animals 3-14
3.6 CONCLUSIONS AND RECOMMENDATIONS 3-14

4.0 LANDFILL NO. 4 (LF-04/SWMU 104) 4-1
4.1 DESCRIPTION 4-1
4.2 WASTE HISTORY 4-1
4.3 ENVIRONMENTAL SETTING 4-1
4.3.1 Topography 4-1
4.3.2 Hydrology 4-1
4.3.3 Geology 4-2
4.3.4 Hydrogeology 4-2
4.3.5 Ecology 4-3
4.4 SUMMARY OF PREVIOUS INVESTIGATIONS 4-3
4.4.1 IRP Phase I 4-3
4.4.2 IRP Phase II Presurvey 4-4
4.4.3 IRP Phase II, Stage I 4-4
4.4.4 Cannon AFB RCRA Facility Assessment 4-5
4.4.5 Cannon AFB RCRA Part B permit 4-5
4.4.6 Landfill No. 4 RCRA Facility Investigation 4-6
4.4.7 RFI Phase II 4-9
4.4.8 Groundwater LTM activities 4-10
4.4.9 Statement of Basis 4-10
4.5 SITE CONCEPTUAL SITE MODEL 4-11
4.5.1 Nature and Extent of Contamination 4-11
4.5.1.1 Soils 4-11
4.5.1.2 Groundwater 4-12
4.5.2 Contaminant Migration Pathways 4-12
4.5.2.1 Soil to Air Migration (compound volatilization and fugitive dust transport) 4-12
4.5.2.2 Surface Water Runoff Discharge 4-12
4.5.2.3 Soil to Groundwater Migration 4-13
4.5.2.4 Uptake by Plants and Animals 4-14
4.6 CONCLUSIONS AND RECOMMENDATIONS 4-14

TABLE OF CONTENTS (continued)

Page

5.0 LANDFILL NO. 25 (LF-25/SWMU 97) 5-1
5.1 DESCRIPTION 5-1
5.2 WASTE HISTORY 5-1
5.3 ENVIRONMENTAL SETTING 5-1
5.3.1 Topography 5-1
5.3.2 Hydrology 5-2
5.3.3 Geology 5-2
5.3.4 Hydrogeology 5-2
5.3.5 Ecology 5-2
5.4 SUMMARY OF PREVIOUS INVESTIGATIONS 5-3
5.4.1 Site 17 (Old Entomology Area) IRP Phase IV Environmental Assessment 5-3
5.4.2 Cannon AFB RCRA Facility Assessment 5-4
5.4.3 Cannon AFB RCRA Part B Permit 5-4
5.4.4 Environmental Assessment 5-4
5.4.5 Landfill No. 25 RFI 5-5
5.4.6 RFI Phase II 5-8
5.4.7 Groundwater LTM Activities 5-9
5.4.8 Remedial Action 5-9
5.5 SITE CONCEPTUAL SITE MODEL 5-10
5.5.1 Nature and Extent of Contamination 5-10
5.5.1.1 Soils 5-10
5.5.1.2 Groundwater 5-11
5.5.2 Contaminant Migration Pathways 5-11
5.5.2.1 Soil to Air Migration (compound volatilization and fugitive dust transport) 5-11
5.5.2.2 Surface Water Runoff Discharge 5-12
5.5.2.3 Soil to Groundwater Migration 5-12
5.5.2.4 Uptake by Plants and Animals 5-13
5.6 CONCLUSIONS AND RECOMMENDATIONS 5-13

6.0 REFERENCES 6-1

LIST OF TABLES

Table 3.1	Landfill No.3 Investigation Summary Table
Table 4.1	Landfill No.4 Investigation Summary Table
Table 5.1	Landfill No.25 Investigation Summary Table

LIST OF FIGURES

Figure 2.1	Location Map, Cannon AFB
Figure 2.2	Site Location Map, Cannon AFB
Figure 3.1	Landfill No.3 (LF-03/SWMU 105), Cannon AFB
Figure 4.1	Landfill No.4 (LF-04/SWMU 104), Cannon AFB
Figure 5.1	Landfill No.25 (LF-25/SWMU 97), Cannon AFB

LIST OF APPENDICES

Appendix A	Boring Logs
Appendix B	Landfill No.3 Specific Report Data
Appendix C	Landfill No.3 and No.4 Correspondence
Appendix D	Landfill No.4 Specific Report Data
Appendix E	Landfill No.25 Specific Report Data
Appendix F	Landfill No.25 Correspondence

LIST OF ACRONYMS, SYMBOLS AND ABBREVIATIONS

°C	degrees celsius
°F	degrees Fahrenheit
μg/kg	micrograms per kilogram
μg/L	micrograms per liter
ACM	asbestos-containing material
AFCEE	Air Force Center for Environmental Excellence
AFB	Air Force Base
AOC	area of concern
bgs	below ground surface
BRA	baseline human health risk assessment
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CMS	corrective measures study
cm/sec	centimeters per second
cm/yr	centimeters per year
COPC	constituents of potential concern
DAF	dilution attenuation factor
DEQPPM	Defense Environmental Quality Program memorandum
DOD	Department of Defense
DPDO	Defense Property Disposal Office
DQO	data quality objective
DRMO	Defense Reutilization and Marketing Office
DRO	diesel-range organics
ERA	ecological risk assessment
ft/year	feet per year
gpm	gallons per minute
GRO	gasoline-range organics
HARM	Hazardous Assessment Ranking Methodology
HGL	HydroGeoLogic, Inc.
HI	hazard index
HSWA	Hazardous and Solid Waste Amendments
HWMR	Hazardous Waste Management Regulations

ICPES	induced coupled plasma emission spectroscopy
in/yr	inches per year
IRP	Installation Restoration Program
LTM	long term monitoring
MCL	Maximum Contaminant Level
MCPP	2-(2-Methyl-4-chlorophenoxy)propanoic acid
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
msl	mean sea level
NFA	no further action
NMAC	New Mexico Administrative Code
NMED	New Mexico Environment Department
NMGWQS	New Mexico Groundwater Quality Standard
NMSS	New Mexico State Standard
NOD	notice of deficiency
PAH	polynuclear aromatic hydrocarbons
PCB	polychlorinated biphenyl
PPM	priority pollutant metal
PR	preliminary review
QA	quality assurance
QC	quality control
RCRA	Resource Conservation and Recovery Act
RFA	RCRA Facilities Assessment
RFI	RCRA Facility Investigation
SSL	soil screening level
SVOC	semi-volatile organic compound
SWMU	Solid Waste Management Unit
TAL	target analyte list
TCE	trichloroethene
TCLP	toxicity characteristic leaching procedure
TOC	total organic carbon
TOX	total organic halides
TPH	total petroleum hydrocarbons
TRPH	total recoverable petroleum hydrocarbons

USACE	United States Army Corps of Engineers
USAF	United States Air Force
USEPA	United States Environmental Protection Agency
VOC	volatile organic compound
VSI	visual site inspection
W-C	Woodward-Clyde
yd^3	cubic yards

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PETITION FOR NO FURTHER ACTION
LF-03 (SWMU 105), LF-04 (SWMU 104), LF-25 (SWMU 97)
CANNON AFB, NEW MEXICO

1.0 INTRODUCTION

This Petition for No Further Action has been prepared by HydroGeoLogic, Inc. (HGL) for the Air Force Center for Environmental Excellence (AFCEE) under Contract F41624-03-D-8602, Contract Delivery Order 037. This request has been developed to address three inactive landfills located within Cannon Air Force Base (AFB), New Mexico; specifically:

- Landfill No. 3 (LF-03), Solid Waste Management Unit (SWMU) 105;
- Landfill No. 4 (LF-04), SWMU 104; and
- Landfill No. 25 (LF-25), SWMU 97.

All three landfills are listed in Attachment 1 of the Cannon AFB's New Mexico Environment Department (NMED) Hazardous Waste Facility Permit No. NM7572124454-1, reissued in October 2003. Because of their inclusion within the permit, all three sites have been investigated under Resource Conservation and Recovery Act (RCRA) and the Department of Defense (DOD) Installation Restoration Program (IRP); LF-03 and LF-04 since 1983 and LF-25 since 1987. Groundwater long term monitoring (LTM) has been conducted at the three sites since the mid-1990's and continues to date.

1.1 PURPOSE

The purpose of this request is to support the determination that no further action (NFA) is required for sites LF-03 (SWMU 105), LF-04 (SWMU 104), and LF-25 (SWMU 97) based on NMED NFA Criterion 5 and to formally request a Class III Permit modification of the Cannon AFB's Hazardous Waste Facility Permit No. NM7572124454-1. NFA Criterion 5 states that "the SWMU has been characterized or remediated in accordance with current applicable state or federal regulations and the available data indicate that contaminants pose an acceptable level of risk under current and projected future land use."

1.2 REGULATORY FRAMEWORK

The DOD initiated a nationwide IRP to evaluate waste disposal practices on DOD property, to control hazards that may result from these waste disposal practices, and to control the migration of hazardous contaminants. The United States Air Force (USAF) initiated the IRP process at Cannon AFB New Mexico in 1982. DOD policy, described in Defense Environmental Quality Program memorandum (DEQPPM) 81-5, directed that suspected problems at DOD sites associated with past hazardous material disposal be evaluated and addressed. The IRP was developed to comply with RCRA; under Sections 6003 and 3012 of RCRA, Federal agencies were directed to assist the USEPA and state agencies to inventory past disposal sites and make the information available to the requesting agencies. To fulfill this

policy, DOD implemented a four-phase IRP that formed the basis for remedial actions at DOD installations under the provisions of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Phase I, the records search, is the identification of potential problems. Follow-up phases in the four-phase process included fieldwork (Phase II), remedial alternative evaluation (Phase III), and remedial action (Phase IV).

RCRA, 42 United States Code Section 6901 *et seq.*, was enacted in 1976. This law required the United States Environmental Protection Agency (USEPA) to adopt regulations governing the current generation, transportation, and treatment, storage, or disposal of hazardous wastes. Subsequent amendments to the law required USEPA to develop a "corrective action" program which, like the IRP, focuses on past waste management practices. These amendments, called the Hazardous and Solid Waste Amendments (HSWA) of 1984, require facilities to seek a RCRA operating permit to investigate and remediate the release of any hazardous wastes or constituents from active and inactive SWMUs under the corrective action program. Section 6961 of RCRA, as amended, specifies that the law and USEPA's implementing regulations apply to federal facilities.

Both the IRP and RCRA corrective action programs are ultimately intended to ensure remediation of contaminated sites that pose an actual or potential threat to public health, welfare, or the environment. Both programs are implemented through phased approaches to identify, investigate, and remediate contaminated sites. The USEPA, in the preamble to the proposed RCRA corrective action rules, confirmed that because the IRP and RCRA corrective action programs are independent environmental requirements, federal facilities must comply with the requirements of both programs (55 Federal Register 30798, 30858). LF-03 (SWMU 105), LF-04 (SWMU 104), and LF-25 (SWMU 97) are addressed as IRP sites ("LF" designations) and as RCRA sites ("SWMU" designations). For IRP sites that are also RCRA SWMUs, the IRP and RCRA phases are implemented in parallel fashion. Site closeout, under the IRP process, is equivalent to the RCRA corrective action term "No Further Action". Under the proposed corrective action rules (40 Code of Federal Regulations [CFR] Section 264.514), the corrective action process can be terminated for a SWMU if it can be demonstrated that the unit does not pose a threat to human health and the environment. In such cases, a request to the USEPA for a Class III permit modification with supporting documentation will be prepared.

1.3 REPORT ORGANIZATION

This report is organized into six sections. Section 1.0 is the introduction and provides a general discussion of the regulatory framework. Section 2.0 provides a general overview of Cannon AFB, its history, and environmental setting. Sections 3.0, 4.0, and 5.0 present the site-specific background information, summarizes previous investigations, and presents conclusions and recommendations for LF-03 (SWMU 105), LF-04 (SWMU 104), and LF-25 (SWMU 97), respectively. References are included as Section 6.0. Supporting documentation has been included as attachments.

2.0 CANNON AFB OVERVIEW

2.1 LOCATION

Cannon AFB is located in eastern New Mexico, in south-central Curry County. The Base is situated on approximately 4,320 acres of land in Sections 13, 24, and 25 in T2N, R34E and Sections 17, 18, 19, 20, and 30 in T2N, R35E. The base is located approximately 110 miles northwest of Lubbock, Texas and about 7 miles west of Clovis, New Mexico. The major highway serving the base is U.S. Highway 60/84, which runs west from Clovis and forms the northern boundary of the base. A facility location map is provided as Figure 2.1.

The three inactive landfills are located in the northeastern portion of Cannon AFB. LF-03 (SWMU 105) is bounded by the facility's eastern property boundary. A site location map is provided as Figure 2.2.

2.1.1 Land Use

The land surrounding Cannon AFB is classified as irrigated farm land with principal crops including corn, grain, sorghum, wheat, barley, oats, alfalfa, cotton, and various vegetables. Cattle ranching and dairy farming occur throughout the county. The economy of Clovis depends largely on Cannon AFB, but is also based on irrigated farming and cattle grazing for both beef and dairy production.

2.1.2 Potable Water Supply

The lower portion of the Ogallala Formation is the primary regional aquifer in the vicinity of Cannon AFB for potable and irrigation water. The total dissolved solids in the aquifer range from 250 to 500 milligrams per liter (mg/L) (Woodward-Clyde [W-C], 1992). All base wells are completed in the Ogallala Aquifer and range from 357 to 415 feet in depth, with yields ranging between 50 to 820 gallons per minute (gpm). Wells incorporate multiple screens drawing water from the interbedded sands of the Ogallala Formation (Radian, 1992a).

2.1.3 Ecology

Cannon AFB and the surrounding area is part of the High Plains grasslands, with much of the natural grassland ecology disrupted by agricultural practices. Vegetation at Cannon AFB is relegated to drought resistant grasses, with shrubby species such as yucca and mesquite being locally abundant. Small trees and large shrubs are located around riparian areas and playa lakes. As stated above, the area surrounding Cannon AFB is used primarily for crop production (e.g., wheat, sorghum, and alfalfa) and livestock.

A variety of resident and transient wildlife species occur within Cannon AFB. Large animals found in the vicinity of Cannon AFB are limited to pronghorn and coyote, both being frequent transients. The population of each is very limited in the area, and limiting factors include scarcity of forage and water. Federal and state protected animals occurring in the vicinity of

Cannon AFB and Curry County include five birds (Baird's sparrow, Bald Eagle, Peregrin Falcon, Long-Billed Curlew, and the Western Snowy Plover), two mammals (black-footed Ferret and the Swift Fox), and the Texas Horned Lizard (Radian, 1994d). There are no suitable habitats for any of these species at Cannon AFB; therefore, the area is not considered capable of supporting a population. The endangered Black-footed Ferret is found in the region, but has not been observed at Cannon AFB. No federally endangered plant or animal species are known to occur on Cannon AFB (Walk Haydel, 1988).

2.2 FACILITY HISTORY

Cannon AFB dates to 1929, when Portair Field was established as a civilian passenger terminal for early commercial transcontinental flights. In 1942 the Army Air Corps took control of the civilian airfield and it became known as the Clovis Army Air Base. In early 1945, the base was renamed Clovis Army Air Field, where flying, bombing, and gunnery classes continued until the Base was de-activated in May 1947.

The Base was reassigned to the Tactical Air Command and formally reactivated as Clovis Air Force Base in 1951 and renamed as Cannon Air Force Base in 1957. The facility has remained active since 1951 with several fighter-bomber groups and tactical fighter wings occupying the Base over time.

2.3 WASTE HISTORY

Wastes have been generated and disposed of at Cannon AFB since the beginning of industrial operations in 1942. The major industrial operations include jet engine, pneudraulics, aerospace ground equipment maintenance, corrosion control, vehicle maintenance shops, and a non-destructive inspection lab. These industrial operations generate varying quantities of waste oils, recoverable fuels, and spent solvents and cleaners.

During the early period of the facility (1943 to 1947 and 1952 to 1965) the majority of waste oils, spent solvents, and recovered fuels were burned during fire department training exercises or burned/buried at one of the base landfills (i.e., LF-01, LF-02, LF-03, and LF-04). Since no program of waste segregation existed, most spent solvents and paint thinners were commingled with waste engine oils, lube oils, and hydraulic fluids. Waste materials brought to the fire department training area in 55-gallon drums were stored at the area until needed to ignite a practice burn during training exercises. Waste materials brought to the landfills were burned prior to burial in trenches.

After 1965, waste handling changed slightly. Generated waste (i.e., waste oils, spent solvents, and recovered fuels) were burned during fire department training exercises; brought to the underground waste oil tank and removed by a contractor; or disposed of in one of the base landfills.

The practice of burning waste oils and spent solvents during fire department training exercises ceased in 1975. The majority of waste oils were collected in 55-gallon drums and bowsers

(vehicles used to replenish fuels to aircraft) and transported to the underground waste oil tank. Waste oils were removed by a contractor. The Defense Property Disposal Office (DPDO) assumed accountability and contracting responsibility for the contractor removal of waste oils in 1978. The majority of spent solvents and paint thinners were collected in 55-gallon drums and stored at the individual shops until contractor removal, arranged by DPDO.

The majority of collected waste JP-4 fuel was burned during fire department training exercises or placed in the underground waste oil tank and removed by a contractor. Recovered JP-4 was collected in 55-gallon drums and bowsers and transported to the fire department training area and placed in a 2,000-gallon underground tank. The fuel was then pumped from the storage tank to the simulated aircraft when needed to ignite a burn. Other remaining waste JP-4 fuel collected for disposal was placed in the underground waste oil tank and removed by a contractor.

Since 1982, generated waste is segregated and then accumulated and temporarily stored in marked 55-gallon drums and bowsers at designated waste accumulation points. Waste oils collected at the waste accumulation points are transported to the underground waste oil tank and are then removed by a contractor. Spent solvents and paint thinners collected at the waste accumulation points are turned over to DPDO for contractor removal and are stored at the base hazardous storage area. Recovered JP-4 fuel is transported to the fire department training area and placed in the 2,000-gallon underground tank or is collected in marked 55-gallon drums and turned over to DPDO for contractor removal.

2.4 ENVIRONMENTAL SETTING

2.4.1 Climate

The climate of east-central New Mexico is classified as tropical semi-arid. Average monthly temperatures range from a January low of 12 degrees Celsius (°C) (39 degrees Fahrenheit [°F] to a July high of 26°C (78°F). The area has a mean annual precipitation value of approximately 40.7 centimeters per year (cm/yr) (16 inches per year [in/yr]), with the majority of the precipitation occurring from thunderstorm activity between the months of May through October. The region has a mean annual evapotranspiration rate of 181.4 cm/yr (71.4 in/yr) (Radian, 1993a).

2.4.2 Physiography

Cannon AFB is located in the Southern High Plains section of the Great Plains physiographic province. The Southern High Plains consists of an isolated plateau composed of Cretaceous, Tertiary, Pleistocene, and Holocene age sediments. The elevation of the plateau is typically 4,500 feet above mean sea level (msl). The regional slope of the Southern High Plains is about 6 to 10 feet per mile.

The Southern High Plains are bounded on the north by the Canadian River, approximately 60 miles north of Clovis. The eastern and western sides of the Southern High Plains are bounded

by escarpments which rise as much as 300 feet above the surrounding area (CH2M Hill, 1983). The High Plains surface is composed of flat, gently sloping surfaces that surround major drainage features and playa lakes.

Cannon AFB is located near the center of this plateau where the topography is typified by flat, featureless terrain having almost no relief. The facility's elevation ranges from 4,327 feet above msl at the northwest corner to approximately 4,260 feet above msl at the southeast corner (CH2M Hill, 1983).

2.4.3 Hydrology

Regional drainage in Curry County is predominantly to the southeast and east. Stream drainage is poorly developed because of the low annual rainfall and minimal relief. The drainage patterns consist of long shallow valleys, locally termed draws, which extend almost from the western edge of the Southern High Plains to the eastern boundary of the plateau. The valleys or draws eventually drain into one of three major river valleys, the Red, the Brazos, or the Colorado. Although the draws extend to the river valleys as drainage systems, they seldom contribute actual flow to the rivers except during periods of unusually high rainfall. The bulk of the precipitation is lost to evapotranspiration and shallow infiltration.

The stream drainage in the area around Cannon AFB is very poorly developed and stream dissection is very light (Cromin, 1969). The stream valleys in this area are long and shallow with little or no lateral drainage systems. The valleys are aligned with the slope of the land surface and occur at widely spaced intervals. The two major drainages in the Cannon AFB area are the Running Water Draw and the Frio Draw northeast of the Base. The streams that occupy the valleys are intermittent streams that flow for only a short time after rainfall before the water is lost to infiltration and evapotranspiration. Runoff is generally channeled to the southeast away from the western escarpment of the High Plains along the regional slope.

In areas not drained by draws, playa lakes serve as low point collection areas for surface runoff. The playas have no surface outlet and any water that collects in the lakes is eventually lost to evapotranspiration or infiltration. Several playas are present on Cannon AFB. One, designated "Playa Lake" (SWMU 103) was used in the past as a holding basin for treated effluent from the Cannon AFB sewage treatment lagoons (SWMUs 101 and 102) until June 1998, when the new sewage treatment plant became operational. Playa Lake is used by migratory ducks and geese during the winter but no fish have been observed within the lake. Another playa on base, located near the intersection of the primary and the northwest-southeast runways, is used as a stormwater retention pond.

2.4.4 Geology

2.4.4.1 <u>Surficial Soils</u>

The Southern High Plains consists of sands, clays and gravels deposited by flowing water. All of these units comprise the Ogallala Formation. There are also minor amounts of wind blown

and lake bottom sediments present. The surface of the plateau is formed by a resistant "caprock" of Pliocene age caliche. The caliche is composed of calcium carbonate and is a soil weathering product. The caliche is overlain in most places by Pleistocene age sands and thin, fine-grained lake deposits (Reeves, 1970).

The most common soil association at Cannon AFB is the Amarillo series as described in the Phase I report by CH2M Hill (1983). This soil type is derived from stream erosion coupled with extensive reworking of the sediments by wind action. The soil generally consists of a loamy sand overlying a caliche, a hard calcium carbonate-enriched layer. The caliche consists of friable to well indurated calcium carbonate-rich layers. The total thickness of the caliche layers varies from a few feet to more than 50 feet. The caliche probably began to form at the end of the period of deposition of the Ogallala formation and continues to the present time (Brown, 1956).

The U.S. Department of Agriculture Soil Conservation Service lists the Amarillo soils as being the most extensive soil group in Curry County. The soil formed on medium to moderately coarse textured calcareous materials, most probably alluvium reworked by wind. The Amarillo soils have well developed profiles which are deeper over the calcium carbonate horizons. The soils frequently develop a stronger structure in the B Horizon than the other soil groups present in the area around Cannon AFB. The Amarillo soils in the area of Cannon AFB consist of three types. The Amarillo Loam, Amarillo Fine Sandy Loam and the Amarillo Loamy Fine Sand all overlie a white chalky zone of caliche that occurs at depths of three to six feet below the surface. Subsurface investigations conducted at the three landfills indicated that the caliche zone most often occurred around four feet below ground surface (bgs). The various soils within the Amarillo series exhibit different colors at the surface. The Amarillo Loam is brown to red brown, the Amarillo Loamy Sand and the Sandy Loam are brown to yellowish red. The subsoil colors are dark reddish brown in some areas of the loam to yellowish red in the Loamy Sands and Sandy Loams.

2.4.4.2 Subsurface Lithology

Cannon AFB is underlain by a thick assemblage of unconsolidated gravel, sand, silts, clay and caliche which may extend to 400 feet bgs. In areas where the sediments are saturated they form part of the High Plains Aquifer (Ogallala Aquifer). The base of the aquifer is considered to be the sandstone beds of the Triassic age Dockum Group. The Triassic age sediments are the deepest beds penetrated by wells in the Cannon AFB area. The sediments that compose the Dockum Group represent clastic deposits that range in composition from mudstone to conglomerate. These Triassic beds were deposited between 138 and 240 million years ago and were later eroded, establishing a base upon which the overlying unconsolidated sediments were deposited. The erosional surface that formed on the Triassic age Dockum Group sediments represented extensively dissected plains. Stream valleys and river channels developed as the erosion continued. The erosional processes created a highly irregular surface upon which the younger sediments were later deposited. The variability of this surface and the relationship of the younger sediments occurring in the abandoned valleys play an important role in the hydrogeology of the High Plains Aquifer.

Overlying the Dockum Group is the Ogallala Formation, which was deposited from the late Miocene into the Pliocene, or from about 10 million years ago to about 2 million years ago. The Ogallala Formation formed primarily as a product of many large and small streams that flowed to the east and southeast from the rising mountains to the west. During and after deposition, the sediments were extensively reworked by wind action. Periodically the sediment deposition was interrupted and soil formation processes took over. The alternating patterns of deposition and erosion created the characteristic hard cemented layers that occur in the Cannon AFB area subsurface deposits. The thickness of the Ogallala deposition was controlled mostly by the irregular pre-Ogallala erosion surface. The thickest packages of the Ogallala sediments accumulated along the axes of the stream valleys. These stream valleys were oriented in a northwest to southeast direction which corresponds to the present day regional gradient for the Ogallala aquifer in the Southern High Plains. The Ogallala fluvial systems deposited sediments into collapse basins formed in the Triassic age rocks as well as existing stream valleys (Seni, 1980). As the fluvial systems moved across the plains and periodically overflowed, areas on the flanks of the valleys received thinner and finer grained sediments. The texture of the Ogallala Formation ranges from coarse gravel and sand through sand and silt to marl and clay. The formation's thickness varies from very thin (less than a few feet) to more than 500 feet and generally thins to the south and southeast in the direction of regional gradient.

2.4.5 Hydrogeology

Groundwater is primarily derived from the Ogallala Formation and occurs in a semiconfined state. Regionally, groundwater is encountered approximately 240 feet bgs, but saturated conditions do not commonly occur until approximately 320 feet bgs. Beneath the eastern portion of Cannon AFB, groundwater has been measured between 270 and 300 feet bgs. The hydrogeologic properties of the Ogallala Aquifer are controlled by the pre-Ogallala depositional topography, the alignment of the infilled former stream valleys, and the hydrologic barriers, particularly the buried soils that occur in the top half of the formation. The buried soils that exert the most control are the caliche horizons which limit the amount of recharge that may enter the aquifer. The hydraulic conductivity of the Ogallala Aquifer, measured in Base water wells, ranges between 2.0×10^{-3} centimeters per second (cm/sec) to 2.0×10^{-2} cm/sec (Radian, 1994d). The groundwater flow velocity is reportedly 45 meters per year (150 feet per year [ft/year]) (A.T. Kearney, 1987).

Soil infiltrating precipitation is the primary recharge source of the Ogallala Formation in the Southern High Plains area. The amount and rate of recharge to the aquifer depends upon the amount, distribution and intensity of rainfall over the area of the Southern High Plains. The amount of surface recharge to the aquifer is quite low because of the low annual rainfall and the high rates of evapotranspiration. The surface recharge has been estimated to be between 0.2 and 2 cm/yr (0.1 to 0.8 in/yr) over the entire extent of the Southern High Plains (Cromin, 1969).

The groundwater stored in the Ogallala Aquifer is discharged by both natural and artificial means. The natural discharge of the Ogallala Aquifer consists of springs and seeps that occur along the boundary escarpments and along the margins of the larger playa lakes (Cromin,

1969). Discharge also occurs through subsurface flow out of the area along the southern boundary of the plateau that makes up the Southern High Plains. The major artificial discharge from the aquifer consists of groundwater pumpage for private, municipal, and agricultural supply. Many wells penetrate the aquifer in the area of the Southern High Plains and impart the largest demand on the groundwater system. The amount of recharge to the Ogallala Aquifer does not offset current withdrawal demands; consequently, a net loss to the system occurs in the area of the Southern High Plains. Water level declines have occurred in wells that have been extensively pumped. Due to heavy irrigation usage and minimal recharge capability, the aquifer has been lowering over the years (A.T. Kearney, 1987). The aquifer is steadily declining at a rate of 2 ft/year due to high pumping rates (Radian, 1994d).

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3.0 LANDFILL NO. 3 (LF-03/SWMU 105)

3.1 DESCRIPTION

LF-03 (SWMU 105) is an inactive landfill occupying approximately nine acres in the eastern portion of Cannon AFB. The unit is bounded to the north by a road leading to the transmitter tower, on the south and east sides by barbed wire fences and agricultural fields, and on the west side by Perimeter Road. The location of LF-03 (SWMU 105) is depicted on Figure 2.2.

LF-03 (SWMU 105) is a rectangular open field covered with prairie grass. No visual evidence of unauthorized dumping was observed during site visits conducted for the numerous investigations.

3.2 WASTE HISTORY

The landfill operated from 1957 to 1967 as a burn and disposal trenching operation. Disposal activities consisted of placing collected waste material into a trench, burning the accumulated waste, and then covering the burned material with soil the following day. Based on available documentation, materials disposed at the landfill include domestic solid waste, waste oils and solvents, paints, paint strippers, paint thinners, pesticide containers, empty cans, and drums. Exploratory trenching of the former landfill uncovered the presence of numerous soda pop and beer bottles, plastic sheeting and bags, clothing, synthetic rubber machinery belt, unburned Styrofoam, scrap metal, insulated and non-insulated wiring, and a crushed 5-gallon can with no lid (Radian, 1994a). The material uncovered was burnt and unburnt (Radian, 1994a).

3.3 ENVIRONMENTAL SETTING

3.3.1 Topography

The topography of the Landfill No.3 is relatively flat with an overall slightly northward dipping slope towards Playa Lake (SWMU 103). Shallow depressions, most likely developed over former disposal trenches, were visible across the site during field investigation site visits (Radian, 1994a).

3.3.2 Hydrology

No surface water bodies or defined drainage pathways have been documented on, immediately adjacent to, or emanating from LF-03 (SWMU 105). Playa Lake (SWMU 103), approximately 450 feet north of LF-03 (SWMU 105), is the closest surface water body to the landfill and given the slight northward dipping slope was considered a potential discharge point for surface water runoff from the landfill (Radian, 1994a). However, given the low annual precipitation rate and high annual evapotranspiration rate for the region, the vegetated condition of the landfill, the presence of a sandy soil covering the landfill, and the presence of shallow depressions across the landfill, it is unlikely that surface water runoff from the landfill would reach Playa Lake. Most likely, the surface water would either infiltrate into the shallow

subsurface, pool within the landfill's shallow depressions, evaporate, or be transpired. The lack of surface water drainage pathways from the landfill to Playa Lake supports this assumption.

3.3.3 Geology

Subsurface investigations of the landfill determined a relatively uniform stratified lithology beneath the landfill. Several borings, depicted on Figure 3.1, were completed within former disposal trenches. The type of debris found at LF-03 included a boot heel, beer cans, plastic, glass, paper, styrofoam, insulated wires, and scrap metal. Waste along with former vegetation roots were encountered to a maximum explored depth of 26 to 27 feet bgs (e.g., borings 3L and 3R). Five of the twelve borings drilled during the RFI included wastes such as plastic bag pieces, steel scrap, small pieces of wire, wood chips, broken glass, and ash. Boring logs completed during the subsurface investigations are included in Appendix A.

Beneath LF-03, soils composed of brown to red-brown, loamy sand, with or without minor calcite cement, were observed to a maximum depth of 4 to 5 feet bgs. A caliche layer, developed primarily in a sand unit containing silt lens, directly underlies these soils to a maximum depth of approximately 55 feet across the landfill. The caliche unit appears to be laterally continuous beneath the landfill, but was observed to range in character from soft, weakly consolidated, sparsely calcareous sand to extremely hard, completely indurated calcrete with partial to extensive silicification in local zones. The caliche varies in texture from massive to laminated, honeycombed, and/or nodular. Beneath the caliche unit, unconsolidated sands and silt lenses were observed to 60 feet bgs. Based on the MW-O borehole, unconsolidated to cemented sands underlie the landfill to the maximum investigated depth of 304 feet bgs, corresponding to 15 feet below the regional water table.

Shallow groundwater (i.e., groundwater occurring in the soils above the regional aquifer) was not encountered during borehole advancement. No groundwater was observed within the waste material, at the basal contact of the disposal trenches, or beneath the disposal trenches within the underlying caliche.

3.3.4 Hydrogeology

Because LF-03 (SWMU 105) is bounded by the facility's property boundary, compliance monitoring well MW-O was constructed along the landfill's southern boundary. Groundwater monitoring began in 1996. Groundwater was initially encountered at a depth ranging between 277 and 280 feet bgs. Since water level elevation monitoring began in 1996, the elevation of the groundwater within well MW-O has been declining. During the 2003 annual sampling event (Bhate, 2005), groundwater was encountered at a depth of 297.98 feet bgs, a decline of approximately 18 feet over 7 years (2.5 ft/year).

3.3.5 Ecology

The landfill is an open, unmaintained lot covered with a variety of tall grasses (Radian, 1994a). Grain fields lie offsite to the east and south of the landfill across a narrow fence-like corridor.

Based on a wildlife survey of the landfill conducted by the Cannon AFB Natural Resource Planner, small mammal dens were observed in the area of LF-03 (SWMU 105) but all were shallow burrows (Cannon AFB, 1997). During the survey, migratory waterfowl were also observed in the area of Playa Lake but no known nesting occurred within the landfill. The migratory waterfowl along with pheasant and quail have been observed eating grains in the fields adjacent to the landfill (Radian, 1994a).

3.4 SUMMARY OF PREVIOUS INVESTIGATIONS

Table 3.1 summarizes the IRP and RCRA documents that apply to LF-03 (SWMU 105). The following narrative provides a timeline for IRP and RCRA activities conducted on the landfill. This timeline provides the context and framework for the investigations and decisions that have been made with respect to the landfill. The locations of soil samples, exploration trench, and compliance monitoring well MW-O associated with LF-03 (SWMU 105) are depicted on Figure 3.1.

Soil and groundwater analytical summary tables presented in the numerous investigations conducted at LF-03 (SWMU 105) have been summarized and attached to this section. The LF-03 (SWMU 105) soil data have been evaluated against current NMED residential soil screening levels (SSLs) and NMED soil to groundwater migration SSLs using a dilution attenuation factor (DAF) of 20, obtained from the New Mexico Environment Department's 2004 *Technical Background Document for Development of Soil Screening Levels, Revision 2.0.* Total petroleum hydrocarbon (TPH) data were evaluated against TPH screening values as presented in the NMED TPH Screening Guidance document dated June 30, 2003. Results of the data screening are included in each previous investigation summary. The groundwater data have been evaluated against current USEPA Maximum Contaminant Levels (MCLs) and New Mexico Groundwater Quality Standards (NWGWQS) (20.6.2.3103).

LF-03 (SWMU 105) soil analytical results are summarized on Tables 3.2 through 3.4. LF-03 (SWMU 105) groundwater analytical results are presented on Table 3.5.

3.4.1 IRP Phase I

To comply with DOD policy, an IRP Phase I investigation (i.e., records search) of the facility was completed in 1983. The Phase I investigation included a detailed review of pertinent installation records, contacting 23 agencies for relevant documents, a helicopter and ground tour of the facility in May 1983, and interviews with 37 base employees. Based on the information obtained and reviewed, the investigation identified 19 past disposal or spill sites at Cannon AFB, including Landfill No.3 (designated as IRP site "LF-03"). Based on site-

specific physical conditions and waste disposal information, Landfill No.3 received a Hazardous Assessment Ranking Methodology (HARM) score of 54. A copy of the HARM form is included in Appendix B. The Phase I investigation recommended NFA status for LF-03 as long as land use controls were implemented to minimize potential risk to humans and the environment (CH2M Hill, 1983). The report was submitted as final to the USEPA in September 1983.

3.4.2 IRP Phase II Presurvey

Five of the 19 sites identified during the IRP Phase I investigation were recommended for further investigation. In 1984, an IRP Phase II Presurvey was completed to address proposed IRP investigation activities at the five IRP sites as well as define the approach to be utilized to accomplish IRP Phase II requirements. However, at the request of Cannon AFB, the Phase I Presurvey also recommended additional base sites for Phase II activities using the data presented in the Phase I report. During the presurvey review, no distinct groupings or statistical trends of the HARM scores were noted (Radian, 1984). Based on the spread and limited range of the generated HARM scores and the lack of a cutoff score, there appeared to be no clear rationale for limiting Phase II activities to only five sites.

The data from all of the IRP sites were reviewed. Given the size of the landfills, waste disposal histories, and the lack of information on the integrity of the underlying caliche unit, the presurvey investigation recommended a Phase II investigation of LF-03 (SWMU 105). Specifically, the presurvey report recommended the installation and sampling of four groundwater monitoring wells around the landfill (Radian, 1984). In a USEPA Region 6 correspondence letter to Cannon AFB, the USEPA recommended Cannon AFB undertake a Phase II, Stage I, investigation to adequately verify the presence or absence of contamination and suggested that investigation activities in addition to those proposed may be warranted (USEPA, 1984).

3.4.3 IRP Phase II, Stage I

A Phase II Stage I investigation of 15 Cannon AFB IRP sites, including LF-03 (SWMU 105), was conducted in September 1984 (Radian, 1986). The investigation was conducted to determine if environmental contamination occurred as a result of former waste disposal practices, fuel spills/leaks and fire training activities. The investigation also estimated the magnitude and extent of contamination; identified potential environmental consequences from migrating pollutants; and provided recommendation for additional investigations if necessary.

IRP Phase II Stage I field sampling activities were conducted from November 1984 to April 1985. Nine soil borings (designated as 3A through 3I) were completed at the landfill in February 1985. During borehole advancement, soil samples were collected for subsurface soil lithologic characterization. Based on borehole logging data, a site-wide caliche layer was observed from 5 to 55 feet bgs. The maximum depth of the landfill trenches was determined to be approximately 20 feet bgs, indicating that a minimum of 35 feet of caliche underlay the waste.

Twenty-seven soil samples (including one quality assurance sample) were collected for laboratory analysis and submitted for priority pollutant metals (PPMs), oil and grease, purgable TPH, and purgable aromatic TPH. The 27 soil samples were collected from the soil borings at soil intervals corresponding to the top, five feet within, and immediately below the caliche layer. Analysis of the soil samples identified no purgable halocarbons or aromatics. Metal concentrations varied but were generally within normal soil ranges for the Cannon AFB area; however, mercury and selenium concentrations were detected in the three soil samples collected from boring 3E above background. Neither the mercury nor selenium concentrations in borehole 3E exceeded current NMED residential SSLs or NMED soil to groundwater SSLs (DAF 20). Oil and grease concentrations varied across the site, ranging from less than 10 mg/kg to 83 mg/kg in borehole 3E. Oil and grease concentrations detected in the landfill soils are well below TPH screening guidelines. Based on the lack of purgable halocarbons and aromatics, the oil and grease concentrations detected in the soil samples were believed to be the result of natural organics.

The Phase II, Stage I report was submitted final in 1986. Based on the analytical data obtained during the Phase II Stage I investigation, historical waste disposal activities conducted at LF-03 (SWMU 105) were concluded not to have significantly impacted the surrounding media (Radian, 1986). However, given that mercury and selenium concentrations were above background in boring 3E soil samples, the Phase II, Stage I, investigation recommended soil sampling and analysis around boring 3E for selenium and mercury.

3.4.4 Cannon AFB RCRA Facility Assessment

In response to a submittal of a 1986 RCRA Part B permit application for hazardous waste storage at the on-base Defense Reutilization and Marketing Office (DRMO) facility, USEPA required a RCRA Facility Assessment (RFA) of Cannon AFB. The RFA was conducted in early 1987 and consisted of a preliminary review (PR) and visual site inspection (VSI) of Cannon AFB, the Melrose Bombing Range, and Conchas Lake Recreation Annex. The RFA identified a total of 128 SWMUs and 52 areas of concern (AOCs) (A.T. Kearney, 1987). The RFA designated IRP site LF-03 as SWMU 105.

Based on the information obtained during the facility assessment, the RFA concluded that 74 of the 128 SWMUs (including SWMU 105 [LF-03]) and 3 of the 52 AOCs required RFIs. A RFI was recommended for SWMU 105 (LF-03) due to the high probability, as determined by the RFA, for the vertical migration of landfill contaminants to the underlying water table. The RFA concluded that there was an insufficient amount of data to determine whether the underlying caliche unit was laterally continuous beneath the landfill to act as a confining unit. The RFA also concluded that there was a low probability that impacts to the nearby surface water body (i.e., Playa Lake [SWMU 103]) would occur from surface water runoff due to the presence of a landfill soil cap, and that the probability of soil gas generation from LF-03 (SWMU 105) was moderate due to the generally non-aromatic type of material identified/detected during the Phase I investigation (Radian, 1986). The RFA assessment data is included in Appendix B.

3.4.5 Cannon AFB RCRA Part B permit

The Cannon AFB RCRA Part B permit was issued to the base on November 14, 1989, and became effective on December 17, 1989. The permit is based on provisions of New Mexico Hazardous Waste Management Regulations (HWMR) 5, as amended 1989. SWMU 105 (LF-03) is listed in the permit in Table 1 of Attachment 1, identifying the SWMU as a high priority site requiring a RFI. Because of the corrective action precedent established by the HSWA, the procedures of the CERCLA IRP approach, including investigations and/or Remedial Actions for all Cannon AFB IRP sites identified as SWMUs, were changed to meet the applicable requirements of the HSWA under the RCRA Corrective Action Plan.

3.4.6 Landfill No.3 RCRA Facility Investigation

After issuance of the RCRA Part B permit, RCRA Facility Investigation (RFI) project plans were developed for multiple Appendix 1 Table 1 sites, including LF-03 (SWMU 105). The purpose of the RFI was to obtain information on the nature and extent of contaminant impacts at the landfill and to determine the need for interim corrective action measures or a Corrective Measures Study (CMS) (Lee Wan, 1990). However, based on a review of previously collected LF-03 (SWMU 105) data, the RFI Field Sampling Plan concluded that no further investigation of LF-03 (SWMU 105) was warranted and recommended that the unit be considered in the CMS process (Lee Wan, 1990). Given the recommendations set forth in the RFI Field Sampling Plan (Lee Wan, 1990) and the Phase II Stage I investigation (Radian, 1986), Cannon AFB generated and submitted a Decision Document for LF-03 (SWMU 105) (EA Engineering [EA], 1990a) to the USEPA. The decision document summarized site-specific physical data (e.g., underlying lithology, depth to groundwater, ecology), regional environmental conditions (e.g., low precipitation and high evapotranspiration rates, depth to the underlying water table, and the minimal ecology of the area), and soil analytical results obtained from the Phase II Stage I investigation. The decision document also reiterated that all of the Phase II Stage I data quality objectives (DQOs) as agreed to by USEPA Region 6, were met in the Phase II Stage I investigation. Because the DQOs were met, the decision document considered the collected data sufficient in quality and quantity to reduce uncertainty and support NFA status (EA, 1990a).

Upon review of the 1990 LF-03 (SWMU 105) Final Decision Document, USEPA Region 6 required additional sampling at the landfill to address an identified data gap, specifically the lack of soil analytical data between 20 and 60 feet bgs (Radian, 1986). A supplemental RI project plan specifically addressing proposed field activities at Landfill No.3 was developed and submitted in June 1992 (Radian, 1992a).

The LF-03 (SWMU 105) RFI field event was conducted from July 5 through July 25, 1992. Twelve soil borings (designated as 3J through 3N and 3P through 3V) were completed to a maximum depth of 61 feet bgs as part of the RFI. The boring locations are depicted on Figure 3.2. A total of 144 soil samples, 3 surface soil samples and 6 to 12 subsurface soil samples per boring obtained from the 20 to 61 feet bgs soil interval, were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), total recoverable petroleum

hydrocarbons (TRPH), organochlorine pesticides, polychlorinated biphenyls (PCBs), and Total Analyte List (TAL) metals. In addition, 41 of the samples were also analyzed for total extractable TPH (diesel, jet fuel, and kerosene), total purgable TPH (gasoline and its components) and chlorinated herbicides.

Several VOCs, diesel, TRPH, bis(2-ethylhexyl)phthalate, organochlorine pesticides, and PCB Aroclors 1254 and 1260 were detected in the RFI soil samples at low concentrations. Toluene was the only organic compound detected in the surface soil samples collected from LF-03 (SWMU 105). Organochlorine pesticides were detected at low levels throughout the landfill. Aroclor 1254 was detected in only one boring (3M) at 21 feet bgs; Aroclor 1260 was also detected at 21 feet bgs in only one boring (3S).

As part of the RFI, the 1986 Phase II Stage I investigation (Radian, 1986) and 1992 RFI (Radian, 1994a) soil data was compared to RCRA Proposed Subpart S Media Action Levels. All of the detected analyte concentrations in the LF-03 (SWMU 105) samples were less than the proposed noncarcinogenic soil action levels. Aroclors 1254 and 1260 were the only organic compounds detected at concentrations exceeding carcinogenic action levels. The elevated Aroclor concentrations were detected in separate samples in only 1 of the 130 soil samples submitted for PCB analysis. The elevated concentrations of the Aroclor compounds occurred at 21 feet bgs. Beryllium was the only metal detected at concentrations exceeding its carcinogenic soil action level; however, the Cannon AFB background beryllium also exceeded the carcinogenic soil action level. Only one landfill soil sample, collected from boring 3M at 23.5 feet bgs, contained a beryllium concentration exceeding the Cannon AFB background beryllium concentration. As part of this assessment, the data were screened against current NMED residential SSLs. None of the analytes were above residential SSLs, including Aroclors 1254 and 1260 and beryllium. Based on the results of the soil screening evaluation, the RFI report recommended NFA status for LF-03 (SWMU 105) (Radian, 1994a).

A risk assessment, consisting of a quantitative Baseline Human Health Risk Assessment (BRA) and a qualitative Ecological Risk Assessment (ERA), was conducted as part of the 1992 RFI. The BRA evaluated the potential risk to human receptors posed by soil contaminants detected during the 1992 RFI. The Phase II, Stage I 1986 soil data was not incorporated into the risk assessment due to analytical detection limit differences between the two sampling events. A copy of the 1992 RFI risk assessment is included in Appendix B.

The risk assessment identified the following constituents of potential concern (COPCs): aldrin, beta-BHC, delta-BHC, gamma-BHC, bis(2-ethylhexyl)phthalate, 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, diesel fuel, heptachlor epoxide, hydrocarbons, tetrahydrofuran, toluene, and trichlorpropene. Exposure pathways evaluated in the BRA included releases to surface water bodies (e.g., Playa Lake) via runoff from the landfill and releases to the ambient air (volatilization from surface and subsurface soils and wind entrainment of contaminated dust). The vertical migration of contaminants from the landfill to the underlying groundwater was not conducted based on steady state soil to groundwater migration modeling indicating approximately 173 years, at a minimum, for contaminants to travel from the base of the

landfill to the underlying water table. Because the use of the landfill was not expected to change, the RFI BRA evaluated only current scenarios. Potential receptors considered in the BRA were:

- Animal and plant receptors;
- People who consume commercially produced agricultural crops grown at the perimeter of the site;
- People who consume meat and/or milk from livestock fed on crops grown at the site perimeter; and
- Cannon AFB personnel and on-site workers exposed to fugitive dust and volatilization of chemicals at the site.

Results of the BRA identified no unacceptable risk to human health receptors.

A qualitative ERA was conducted as part of the 1992 risk assessment to evaluate potential adverse impacts LF-03 (SWMU 105) contaminants may have on critical habitats and endangered species in the area. Ducks were used as the indicator species to evaluate potential impacts site-related contaminants may have on area wildlife. Although, ducks have not been observed nesting or feeding at the landfill, the ERA used ducks as an indicator species since they have been generally observed around Playa Lake and the grain fields to the south and east of LF-03 (SWMU 105). Ducks typically migrate through the Clovis area by late October and reach their highest numbers in mid-November, spending between 1.5 and 3 months in the area. Given the low precipitation rate for the region and the short time span ducks are present in the area the 1992 RFI ERA concluded that a duck's level of exposure is likely to be low.

After addressing several notices of deficiencies (NODs), Cannon AFB submitted the final Draft RFI report on February 9, 1993 (Radian, 1993a). Based on the results of the soil analytical data screening and risk assessment conclusions, the RFI recommended NFA status for LF-03 (SWMU 105) and a Class III permit modification. Based on this recommendation, Cannon AFB subsequently completed a draft Decision Document requesting NFA status for LF-03 (SWMU 105) (Radian, 1993c). NMED responded in a March 23, 1993, letter approving the Final RFI Report for Landfills No.3 and No.4 with the explicit understanding that NMED reserved the right to require additional work at LF-03 (SWMU 105) and LF-04 (SWMU 104) if ongoing investigation activities at Landfill No.5 (LF-05/SWMU 113) revealed the need for remedial action. A copy of the March 23, 1993, NMED RFI acceptance letter is included in Appendix C. Separate RFI reports were submitted for LF-03 (SWMU 105) and LF-04 (SWMU 104); however, the RFIs were reviewed as one report by both NMED and USEPA Region 6.

After review of the final Draft RFI (Radian, 1993a), the USEPA required additional clarification and submitted several NODs. Cannon AFB submitted several comment response letters and USEPA Region 6 approved the RFI report with the final report consisting of the January 1993 RFI report, and Cannon AFB comment responses to USEPA Region 6 NODs dated April 13, 1993, August 4, 1993, and November 1, 1993. A copy of the USEPA RFI

approval letter is included in Appendix C. The USEPA approval letter, however, stipulated that Cannon AFB must install a monitoring well into the uppermost aquifer along the downgradient edge of LF-03 (SWMU 105) to evaluate whether landfilling activities at LF-03 (SWMU 105) have impacted the underlying groundwater quality. Cannon AFB submitted the Final RFI in April 1994 through the inclusion of the USEPA Region 6 approved comment responses but still recommending NFA (Radian, 1994a). However, in a June 17, 1994, comment response letter to the USEPA Region 6, Cannon AFB agreed to the installation of a LF-03 (SWMU 105) downgradient monitoring well and annual sampling (Cannon AFB, June 17, 1994). A copy of this comment response letter is included in Appendix C.

3.4.7 RFI Phase II

RFI Phase II activities consisted of the installation and sampling of the LF-03 (SWMU 105) compliance monitoring well (designated as 'MW-O'). MW-O was installed along the downgradient edge of LF-03 (SWMU 103) in December 1994 in accordance with the approved RFI Phase II workplan (W-C, 1995a). The results of the sampling event were submitted in a final Phase II RFI report (W-C, 1995c).

In a March 26, 1997, letter, NMED requested additional information be provided in the LF-03 (SWMU 105) RFI Phase II report. Specifically, the NMED letter specified that an adequate ecological risk analysis had not been completed, that the Phase II RFI report was insufficient in addressing the potential migration of contaminants from 15 feet bgs (corresponding to highest DDT detection) through evapotranspiration and soil-dwelling animal activities, and that the report was insufficient in discussing the probability of surface water impacts through shallow groundwater migration, runoff, or other mechanisms. The ecological risk analysis data in question had been previously reported and approved by NMED and USEPA (Radian, 1994a). Cannon AFB responded to the March 1997 NMED letter on May 13, 1997. The Cannon AFB comment response letter included comment responses from the facility's remedial project manager, from the facility's Natural Resource Planner and from the United States Army Corps of Engineers (USACE). The comment response letter closed the issued by presenting again the analytical data from the RFI (Radian, 1994a), discussed the reasoning and validity of the risk assessment, provided additional information on the SWMUs ecology, discussed the potential for surface water runoff to discharge from LF-03 (SWMU 105), and included a discussion on the ecotoxicological screening conducted on the sediment organochlorine pesticide concentrations in Playa Lake (SWMU 103). Both the NMED request for additional information and the Cannon AFB comment response letter are included in Appendix C.

3.4.8 Groundwater LTM Activities

Beginning in 1996, Cannon AFB initiated groundwater LTM at LF-03 (SWMU 105) using MW-O as the compliance monitoring well. To date, LTM activities conducted at Landfill No. 3 have included 4 quarterly sampling events (1996), 2 semi-annual monitoring events (1997); and annual sampling events from 1998 to the present. A summary of the positive groundwater detections is included as Table 3.5. Groundwater data associated with the 2001

and 2004 LTM monitoring events was not included because the associated reports were not obtained from the Cannon AFB administrative record.

Annual groundwater LTM work plans have been generated since 1996 specifying the required analyses and sampling procedures. Groundwater samples were initially analyzed for Appendix IX VOCs, Appendix IX SVOCs, Appendix IX pesticides/PCBs, Appendix IX herbicides, Appendix IX metals, cyanide, Total Organic Carbon (TOC), Total Organic Halides (TOX), sulfide, total phenols, and dioxin 2,3,7,8-TCDD. In early 1998, Cannon AFB submitted a proposal to NMED asking to modify groundwater LTM analytical requirements. Specifically, Cannon AFB requested that Appendix IX sampling be conducted every three years with non-Appendix IX sampling conducted every year, except when Appendix IX sampling is conducted. In addition, Cannon AFB proposed to include sulfates, nitrates/nitrites, pH, conductivity, chloride, phenols, sodium, iron, and magnesium and requested the removal of dioxins, cyanide, sulfide, TOC, and TOX from the analytical sampling list. A copy of the Cannon AFB request letter is included in Appendix C. The proposed analyte list changes were instituted for the 1998 annual LTM sampling event.

Positive LTM analytical results through 2005 (with the exception of the 2001 and 2004 data) have been included on Table 3.5. Applicable USEPA MCLs and New Mexico Groundwater Quality Standards (NMGWQS) have been included on Table 3.5 for data evaluation. Several VOCs, di-n-butylphthalate, metals, and general groundwater chemistry components (i.e., chloride, nitrate, sulfide, TOC, and TOX) have been detected in the LF-03 (SWMU 105) groundwater since LTM activities began. No pesticides (organophosphorous or organochlorine), PCBs, herbicides, dioxin 2,3,7,8-TCDD, cyanide, total phenols, and polynuclear aromatic hydrocarbons (PAHs) have been detected in the groundwater since initiation of LTM activities in March 1996.

VOCs detected in the groundwater included carbon tetrachloride, chloroform, isobutyl alcohol, methylene chloride (a common laboratory contaminant), and trichloroethene (TCE). All of the VOCs were detected sporadically in the December 1997 semi-annual sampling event and the 1998 and/or 1999 annual sampling events. Methylene chloride was detected solely during the 1998 annual event and at a concentration slightly over its reporting limit. The 1998 positive methylene chloride detection in MW-N corresponds to the only positive methylene chloride detection in LF-04's compliance well MW-O. None of the VOCs were detected at concentrations exceeding Federal MCLs and/or NMGWQSs.

Di-n-butylphthalate was detected solely in 1996 during the second quarterly sampling event. The phthalate is a common field and laboratory contaminant, and given its lack of detection during other sampling events suggests that the reported positive detection was most likely attributable to blank contamination. Sixteen metals have been detected in the groundwater obtained from MW-O. None of the metals have been detected above applicable Federal MCLs and/or NMGWQSs (NMAC 20.6.2.3103). Chloride, one of the general chemistry indicators, has been detected at concentrations exceeding the Federal MCL for chloride (250 milligrams per liter [mg/L]) and the NMGWQS for chloride (250 mg/L) since December 1998 when the

water quality analyses were included in the LTM events. The chloride concentrations slightly exceeded (within the same order of magnitude) its MCLs and NMGWQSs. Given the uniformity of the chloride detections, the 173 year soil to groundwater migration time duration, age of the landfill, and nature of the disposed waste, the detected chloride concentrations are likely natural and unassociated with former LF-03 (SWMU 105) waste disposal practices.

3.4.9 Statement of Basis

In April 2001, Cannon AFB, pursuant to 40 CFR 270.42(c) of the 1984 HSWA, submitted a Statement of Basis requesting NFA status for 62 SWMUs (including LF-03 [SWMU 105]), 9 AOCs, and 1 disposal pit listed in the RCRA Part B Permit. In a January 12, 2004 response letter to the Statement of Basis, NMED stated that LF-03 (SWMU 105) did not qualify for NFA status because a CMS for the landfill was currently under review. However, a CMS for LF-03 (SWMU 105) has never been prepared or submitted to NMED, since it has been in NFA/LTM status and a CMS is not warranted. A copy of the January 12, 2004 NMED letter is included in Appendix C.

3.5 CONCEPTUAL SITE MODEL

3.5.1 Nature and Extent of Contamination

Numerous soil investigations have been conducted at Landfill No.3. A total of 21 soil borings and 1 exploratory trench were completed within the boundaries of the landfill and 157 surface and subsurface soil samples were collected and submitted for laboratory analyses. The soil borings were advanced to a maximum depth of 60 feet bgs. In addition, 13 rounds of sampling over nine years of groundwater LTM have occurred at Landfill No.3. Groundwater monitoring activities has consisted of 4 quarterly sampling events conducted in 1996, 2 semi-annual sampling events in 1997, and annual sampling events conducted from 1998 to the present.

3.5.1.1 <u>Soils</u>

Several VOCs, organochlorine pesticides, Aroclors 1254 and 1260, diesel, TRPH, herbicides, and metals were detected in the soil samples collected from Landfill No.3. Organic compounds, petroleum hydrocarbons, and metals were detected above background to the maximum sample depth of 59 feet bgs. None of the detected organic compounds or metals in the landfill soils exceeded NMED residential Soil Screening Levels (SSLs) (NMED, February 2002). In addition, based on the risk assessment conducted as part of the 1992 RFI, there is no unacceptable risk to human health and the environment.

Methylene chloride, beta-BHC, gamma-BHC, barium, chromium, and iron were detected at concentrations exceeding NMED soil to groundwater migration SSLs using a Dilution Attenuation Factor (DAF) of 20. Methylene chloride, barium, and iron are the only target constituents that have been detected in the groundwater samples obtained immediately downgradient of Landfill No.3 during groundwater LTM activities. However, methylene

chloride is a common laboratory contaminant and was positively detected only during the 1998 annual sampling event, which also corresponds to its only positive detection at Landfill No.4. The lack of positive detections at LF-03, and the corresponding positive detection at LF-04 during the same sampling event, indicated that the methylene chloride detection is associated with laboratory contamination. The three inorganics are routinely detected in the groundwater samples but at concentrations below criteria.

Diesel and TRPH concentrations in the landfill soils ranged from <0.1 mg/kg to 17 mg/kg and from <25 mg/kg to 320 mg/kg, respectively. The diesel and TRPH detected concentrations are well below NMED TPH Screening guidelines for residential direct exposure (i.e., 880 mg/kg for diesel and 800 mg/kg for unknown oils).

3.5.1.2 Groundwater

Chloride is the only target constituent monitored during Landfill No.3 groundwater LTM activities that exceeded criteria. None of the other targeted constituents detected in the LF-03 groundwater samples over a 10 year period have exceeded Federal MCLs and/or NMGWQSs (NMAC 20.6.2.3103).

3.5.2 Contaminant Migration Pathways

Contaminant migration pathways at Landfill No.3 have been identified as being soil to air migration through volatilization and dust transported, surface water runoff discharging to Playa Lake, soil to groundwater migration, and uptake by plants and animals (Radian, February 1994). However, regional and site-specific physical factors as well as the physical properties of the detected contaminants minimize and/or inhibit contaminant migration, as described below.

3.5.2.1 Soil to Air Migration (compound volatilization and fugitive dust transport)

A grass-vegetated 4 to 5 foot thick soil cap covers the former landfill. The presence of the grass-covered soil cap helps to minimize and potentially inhibits the transportation of landfill fugitive contaminated dust. In addition, no organic compounds prone to volatilization were detected in the landfill surface soil samples. With the exception of methylene chloride, a common laboratory contaminant, no VOCs were detected in the landfill surface soil samples. Given the volatile nature of methylene chloride, it's unlikely the VOC would have remained at detected concentrations in the surface soil after nearly 40 years of inactivity. Diesel and TRPH were both detected in the collected surface soil samples but the petroleum compounds are not highly volatile.

Little to no soil moisture was identified within the disposal trench soils or at the base of the disposal trenches during borehole advancement and completion of the exploratory trench. The apparent lack of soil moisture and leachate in the landfill soils indicates degassing of accumulated soil moisture/leachate is not occurring.

3.5.2.2 Surface Water Runoff Discharge

Although the landfill is relatively flat, an overall area-wide northerly slope is present; suggesting the possibility that surface water runoff generated at LF-03 (SWMU 105) may discharge to Playa Lake (SWMU 103). However, LF-03 (SWMU 105) is covered with a soil cap limiting the potential for the transport and discharge of landfill contaminants. In addition, as documented in the 1986 Phase II, Stage I report (Radian, 1986) and the 1994 final RFI report (Radian, 1994a), LF-03 (SWMU 105) is unpaved, underlain with a sandy soil, vegetated with grasses, and contains numerous shallow depressions which appear to have developed over the former disposal trenches. Given the landfill's generally dry sandy soil, vegetated condition and the regional low annual precipitation rate; the precipitation that falls onto the landfill surface would most likely infiltrate into the underlying soil as opposed to discharging as overland flow or sheet flow. If surface water runoff develops, the runoff would be diverted to the shallow depressions that pockmark the landfill's surface. The lack of a surface water transport mechanism at LF-03 (SWMU 105) is supported by the lack of visible surface water drainage features such as draws, rills, or swales emanating from the landfill.

3.5.2.3 Soil to Groundwater Migration

Vertical migration is limited by the Cannon AFB regional low annual precipitation rate and high annual evapotranspiration rate, the presence of a caliche unit within the upper 60 feet of soil, and groundwater occurring approximately 287 feet bgs.

The regional low annual precipitation rate and high annual evapotranspiration rate limit the amount of soil moisture able to infiltrate into the subsurface soil. The lack of soil moisture vertically migrating into the subsurface is supported by the lack of soil moisture identified during borehole advancement. Groundwater was not observed in the landfill soils, at the base of the landfill, or in the soils beneath the landfill. Also, no shallow groundwater or perched groundwater water bearing zones were observed to have developed on the more cemented layers of the caliche unit. The presence of the caliche unit most likely inhibits groundwater migration by impeding vertical migration and subjecting the infiltrating soil moisture in the shallow subsurface to evapotranspiration.

As discussed in the 1994 final RFI report (Radian, 1994a), mathematical models were employed to evaluate the soil to groundwater migration pathway. Based on the assumption used under steady state conditions, approximately 173 years, at a minimum, would be required for soil moisture at the base of the landfill to migrate to the underlying water table. The fate and movement of organic materials in subsurface environments are governed largely by sorption and biodegradation. Sorption affects the rate of travel of organic material, relative to that of water through subsurface systems (McCarty et. al., 1981). Solutes which may be sorbed/desorbed on soil, such as metals and pesticides, are expected to migrate at a slower apparent velocity than the soil moisture, and will require a longer period of time to reach the water table. The ultimate fate of organic compounds in the subsurface system depends upon biodegradative processes. The attenuation of organic species from biological, chemical, and physical degradation was estimated during the RFI investigation assuming a first-order decay

mechanism (Radian, 1994a). Based on the information obtained, the RFI concluded that significant contamination of the water table with contaminants originating at LF-03 (SWMU 105) is highly unlikely in the future. Furthermore, the few inorganics found in the soils above DAF-20 SSLs are not above groundwater standards.

3.5.2.4 Uptake by Plants and Animals

Land use in the area surrounding Cannon AFB is primarily agricultural. Agricultural fields are present in the vicinity of the landfill. However, no agricultural fields are present at LF-03 (SWMU 105) and none of the vegetation present within the landfill is used for livestock feed.

3.6 CONCLUSIONS AND RECOMMENDATIONS

LF-03 (SWMU 105) is a nine acre parcel of land formerly used for burn and disposal trenching operations between 1957 and 1967. Disposal trenches were excavated to a maximum depth of 16.5 feet bgs and possibly extending 250 feet. The amount of waste material disposed within the landfill trenches has not been determined. No waste disposal activities are known to have occurred for nearly 40 years. During subsurface investigation activities, waste material encountered included numerous soda pop and beer bottles, plastic sheeting and bags, clothing, synthetic rubber machinery belt, unburned Styrofoam, scrap metal, insulated and non-insulated wiring, and a crushed 5-gallon can with no lid.

Minor impacts to the soil were identified during the RFI conducted in 1992. NMED, upon review of the final RFI report submitted in February 1994 concurred with the report's recommendation for NFA status and Class III modification.

Upon review of the final 1994 RFI report, USEPA Region 6 accepted the RFI but required the installation and sampling of a downgradient monitoring well. Ten years of groundwater LTM activities have since occurred. No organic compounds or metals associated with former disposal activities at LF-03 have exceeded Federal MCLs or NMGWQS. Chloride, a groundwater quality indicator parameter, is the only target constituent observed to slightly exceed screening criteria since its inclusion into the groundwater LTM program in 1998. Elevated chloride concentrations are most likely consistent with background conditions.

Based on no soil impacts detected beneath the landfill above current SSLs, the absence of groundwater contamination detected in a downgradient compliance monitoring well over a nine year sampling period, risk assessment evaluations indicating no unacceptable risks to human health and the environment, NFA under NMED criterion 5 and a Class III permit modification is requested for LF-03 (SWMU 105).

4.0 LANDFILL NO. 4 (LF-04/SWMU 104)

4.1 DESCRIPTION

LF-04 (SWMU 104) is an inactive burn and disposal trench landfill occupying approximately seven acres of the eastern portion of the Cannon AFB. The landfill lies approximately 800 feet west of the ordnance area and is bounded to the north by Perimeter Road, to the west by a barbed wire fence, and to the east and south by vacant fields. The location of the landfill with respect to the surrounding facility is shown on Figure 2.2.

LF-04 (SWMU 104) is an open field covered with prairie grass. The land is relatively flat with a very slight overall dip to the south towards Playa Lake (SWMU 103). Noticeable elongated areas of subsidence within the land unit suggest the locations of former trenches (Radian, 1986). No visual evidence of unauthorized dumping has been documented in the investigation reports submitted for LF-04 (SWMU 104).

4.2 WASTE HISTORY

LF-04 (SWMU 104) operated for one year from 1967 to 1968 as a burn and disposal trenching operation. Disposal activities consisted of placing collected waste material into a trench, burning the accumulated waste, and then covering the burned material with soil the following day. Based on available documentation, material received by the landfill include domestic solid waste, waste oils and solvents, paints, paint strippers, paint thinners, pesticide containers, empty cans, and drums. Fill material composed of plastic bags, wood, glass, paper, scrap metal, electrical wire, and food cartons has been observed beneath LF-04 (SWMU 104) (Radian, 1994e).

4.3 ENVIRONMENTAL SETTING

4.3.1 Topography

The topography of the landfill is relatively flat with a slight overall southwesterly dip towards Playa Lake (Radian, 1993b). Undulations and ruts are present across the landfill and possibly represent former landfill trenches. The ruts generally trend roughly north-south and are approximately 250 feet in length.

4.3.2 Hydrology

No surface water bodies or defined drainage pathways have been documented within, adjacent to, or emanate from LF-04 (SWMU 104). Playa Lake (SWMU 103), located approximately 1,000 feet south of the landfill, is the closest surface water body to LF-04 (SWMU 104).

Given the regional annual low precipitation and high evapotranspiration rates, the vegetation covering the landfill, the landfill's sandy soil, and the presence of the shallow depressions (ruts) across the landfill, surface water generated within the landfill is unlikely to migrate off

the landfill and to reach Playa Lake (SWMU 103). Most likely, surface water runoff would either infiltrate into the shallow subsurface, pool within the landfill's shallow depressions, or evapotranspire. The abundance of vegetation in the undulations and ruts with respect to the surrounding undisturbed areas supports the conclusion that the depressions act as surface water catchments. In addition, no surface water drainage pathways leading from LF-04 (SWMU 104) to Playa Lake (SWMU 103) have been reported in the LF-04 (SWMU 104) investigation reports submitted to date, supporting the conclusion that surface water runoff from the landfill does not migrate to Playa Lake.

4.3.3 Geology

Subsurface investigations of LF-04 (SWMU 104) determined a relatively uniform stratified lithology beneath the landfill. Several borings were completed within former disposal trenches. Boring logs completed during the subsurface investigations are included in Appendix A.

The landfill was observed to be underlain by a 2 to 4.5 foot thick brown to red-brown, loamy sands with calcite nodules near the basal contact of the underlying caliche layer. A caliche layer was observed to underlay the surficial soils to a maximum depth of approximately 60 feet across the site. Borehole 4B encountered refusal at 59.5 feet due to calcrete impeding the progress of the drill bit. Most of the boreholes encountered unconsolidated sand between 50 and 60 feet bgs. The physical properties of the caliche were observed to be highly variable but similar to those at LF-03 (SWMU 105). The caliche unit ranged in character from soft, weakly consolidated, sparsely calcareous sand to extremely hard, completely indurated calcrete with partial to extensive silicification in local zones and varies in texture from massive to laminated, honeycombed, and/or nodular. Weakly consolidated sand deposits, ranging between 15 and 25 feet bgs, were identified in several of the LF-04 (SWMU 104) borings. Unconsolidated sands lie directly below the caliche layer with the caliche contact being more gradational. Based on the MW-N borehole, unconsolidated to cemented sands underlie the landfill to the maximum investigated depth of 287 feet bgs.

A thin, approximately 1.5 foot thick caliche layer exists at a depth of 3 feet in the area of LF-04 (SWMU 104). Fill material, which included domestic and construction-type wastes (e.g., wood, paper, and metal scrap), has been observed beneath the shallow caliche and extending to a depth of approximately 16.5 feet bgs. A largely unconsolidated 5-foot thick sand body was observed beneath the fill material.

Shallow groundwater (i.e., groundwater occurring above the regional aquifer) was not encountered during borehole advancement. No groundwater was observed within the landfill, at the basal contact of the disposal trenches, or within the underlying caliche unit.

4.3.4 Hydrogeology

Compliance monitoring well MW-N was constructed immediately downgradient of LF-04 (SWMU 104) in 1996. Groundwater was initially encountered at a depth ranging between 274

to 277 feet bgs. Since initiating groundwater LTM activities, the groundwater elevation has been declining. During the 2003 annual sampling event (Bhate, 2005), groundwater was encountered at a depth of 289.75 feet bgs, a decline of nearly 13 feet over 7 years (1.8 ft/year).

4.3.5 Ecology

LF-04 (SWMU 104) is vegetated with a variety of grasses. The former landfill is not maintained in any manner and the grass is overgrown. Land used for agricultural purposes lies east and south of the landfill. Based on a wildlife survey of the landfill, small mammal dens were observed in the area but were observed to be shallow burrows (Cannon AFB, 1997). Migratory waterfowl was also observed in the area of Playa Lake (SWMU 103) during the survey, but no known nesting occurred in the landfill area (Cannon AFB, 1997).

4.4 SUMMARY OF PREVIOUS INVESTIGATIONS

Table 4.1 summarizes the IRP and RCRA documents that apply to LF-04 (SWMU 104). The following narrative provides a timeline for IRP and RCRA activities conducted on the landfill. This timeline provides the context and framework for the investigations and decisions that have been made with respect to the landfill. The locations of the soil borings, exploration trench, surface soil sample locations, and compliance monitoring well MW-N associated with LF-04 (SWMU 104) are depicted on Figure 4.1.

Soil and groundwater analytical summary tables presented in the numerous investigations conducted at LF-04 (SWMU 104) have been summarized and attached to this section. Similar to LF-03, the data have been evaluated against current NMED residential SSLs and NMED soil to groundwater migration SSLs using a DAF of 20, TPH Screening Guidance, and current USEPA MCLs and NMGWQS (20.6.2.3103).

LF-04 (SWMU 104) soil analytical results are summarized on Tables 4.2 through 4.4. LF-04 (SWMU 104) groundwater analytical results are presented on Table 4.5.

4.4.1 IRP Phase I

To comply with DOD policy, an IRP Phase I investigation (i.e., records search) of the facility was completed in 1983. The Phase I investigation included a detailed review of pertinent installation records, contacting 23 agencies for relevant documents, a helicopter and ground tour of the facility in May 1983, and interviews with 37 base employees. Based on the information obtained and reviewed, the investigation identified a total of 19 past disposal or spill sites at Cannon AFB including Landfill No.4 (designated as IRP site "LF-04"). Based on site-specific physical conditions and waste disposal information, Landfill No.4 received a HARM score of 56. A copy of the HMRS form is included in Appendix D. The Phase I investigation recommended NFA status for LF-04 as long as land use controls were implemented to minimize potential risk to humans and the environment (CH2M Hill, 1983). The reported was submitted final to the USEPA in September 1983.

4.4.2 IRP Phase II Presurvey

Five of the 19 sites identified during the IRP Phase I investigation were recommended for further investigation. In 1984, an IRP Phase II Presurvey was completed to address proposed IRP investigation activities at the five IRP sites as well as define the approach to be utilized to accomplish IRP Phase II requirements. However, at the request of Cannon AFB, the Phase I Presurvey also identified additional base sites requiring Phase II activities using the data presented in the Phase I report. During the presurvey review, no distinct groupings or statistical trends of the HARM scores were noted (Radian, 1984). Based on the spread and limited range of the generated HARM scores and the lack of a cutoff score there appeared to be no clear rational for limiting Phase II activities to only five sites.

The data from all of the IRP sites were then reviewed and given the size of the landfills, waste disposal histories, and the lack of information on the integrity of the underlying caliche unit, the presurvey investigation recommended a Phase II investigation of LF-04 (SWMU 104). Specifically, the presurvey report recommended the installation and sampling of four groundwater monitoring wells around LF-04 (SWMU 104) (Radian, 1984). In a USEPA Region 6 correspondence letter to Cannon AFB, the USEPA recommended Cannon AFB undertake a Phase II, Stage I investigation to adequately verify the presence or absence of contamination was suggested and that investigation activities in addition to those proposed may be warranted (USEPA, 1984).

4.4.3 IRP Phase II, Stage I

A Phase II Stage I investigation of 15 Cannon AFB IRP sites, including LF-04 (SWMU 104), was conducted in September 1984 (Radian, 1986). The investigation was conducted to determine if environmental contamination occurred as a result of former waste disposal practices, fuel spills/leaks and fire training activities. The investigation also estimated the magnitude and extent of contamination; identified potential environmental consequences from migrating pollutants; and provided recommendation for additional investigations if necessary.

IRP Phase II Stage I field sampling activities began in November 1984 and ended in April 1985. Seven soil borings (designated as 4A through 4G) were completed at the landfill in February 1985. Based on lithologic characterization of the soil borings, the caliche layer appeared to be laterally continuous and extending from approximately 4.5 feet to 50 to 60 feet bgs. The maximum depth of the landfill trenches was determined to be approximately 20 feet bgs, indicating nearly 30 to 40 feet of caliche is present beneath the waste.

Twenty-two soil samples (including one quality assurance sample) were collected for laboratory analysis and submitted for the following analyses: PPMs, oil and grease, and purgable TPH and purgable aromatic TPH. The 22 soil samples were collected from the soil borings at soil intervals corresponding to the top, five feet within, and immediately below the caliche layer. Analysis of the soil samples identified no purgable halocarbons or aromatics. Metal concentrations varied but were generally within normal soil ranges for the Cannon AFB area. None of the metals detected exceeded NMED residential SSLs or soil to groundwater

SSLs (DAF 20). Oil and grease concentrations varied across the landfill, ranging from less than 18 mg/kg to 45 mg/kg. All of the oil and grease concentrations are well below NMED TPH screening guidelines. Based on the lack of purgable halocarbons and aromatics, the oil and grease detected in the LF-04 soil samples were believed to be the result of natural organics.

The Phase II, Stage I report was submitted final in 1986. Based on the analytical data obtained during the Phase II Stage I investigation, past waste disposal activities conducted at LF-04 (SWMU 104) were concluded not to have significantly impacted the surrounding media (Radian, 1986). Consequently, the Phase II Stage I report recommended NFA for LF-04 (SWMU 104) (Radian, 1986).

4.4.4 Cannon AFB RCRA Facility Assessment

In response to a submittal of a 1986 RCRA Part B permit application for hazardous waste storage at the on-base DRMO facility, USEPA required a RFA of Cannon AFB. The RFA was conducted in early 1987 and consisted of a PR and VSI of Cannon AFB, the Melrose Bombing Range, and Conchas Lake Recreation Annex. The RFA identified a total of 128 SWMUs and 52 AOCs (A.T. Kearney, 1987). The RFA labeled IRP site LF-04 as SWMU 104.

Based on the information obtained during the facility assessment, the RFA concluded that 74 of the 128 SWMUs (including SWMU 104 [i.e., LF-04]) and 3 of the 52 AOCs required RFIs. A RFI was recommended for SWMU 104 (LF-04) due to the high probability, as determined by the RFA, for the vertical migration of landfill contaminants to the underlying water table. The RFA concluded that there was an insufficient amount of data to determine whether the underlying caliche unit was laterally continuous beneath the landfill and act as a confining unit. The RFA also concluded that there was a low probability that impacts to the nearby surface water body (i.e., Playa Lake [SWMU 103]) would occur from surface water runoff due to the presence of a landfill soil cap and that the probability of soil gas generation from LF-04 (SWMU 104) was moderate due to the generally non-aromatic type of material identified/detected during the Phase I investigation (Radian, 1986). The RFA assessment data is included in Appendix D.

4.4.5 Cannon AFB RCRA Part B permit

The Cannon AFB RCRA Part B permit was issued to the base on November 14, 1989, and became effective on December 17, 1989. The permit is based on provisions of New Mexico Hazardous Waste Management Regulations (HWMR-5, as amended 1989). SWMU 104 (LF-04) is listed in the permit in Table 1 of Attachment 1, identifying the SWMU as a high priority site requiring a RFI. Because of the corrective action precedent established by the HSWA, the procedures of the CERCLA IRP approach, including investigations and/or Remedial Actions for all Cannon AFB IRP sites identified as SWMUs, were changed to meet the applicable requirements of the HSWA under the RCRA Corrective Action Plan.

4.4.6 Landfill No. 4 RCRA Facility Investigation

After implementation of the RCRA Part B permit, RFI project plans were developed for multiple Appendix 1 Table 1 sites, including LF-04 (SWMU 104). The purpose of the RFI was to obtain information on the nature and extent of contaminant impacts at the landfill and to determine the need for interim corrective action measures or a CMS (Lee Wan, 1990). However, based on a review of previously collected data, the RFI Field Sampling Plan concluded that no further investigation of LF-04 (SWMU 104) was warranted and recommended that the unit be considered in the CMS process (Lee Wan, 1990). Given the recommendations set forth in the RFI Field Sampling Plan (Lee Wan, 1990) and the Phase II Stage I investigation (Radian, September 1986), Cannon AFB generated and submitted a Decision Document for LF-04 (SWMU 104) (EA, 1990b) to the USEPA. The decision document summarized site-specific physical data (e.g., underlying lithology, depth to groundwater, ecology), regional environmental conditions (e.g., low precipitation and high evapotranspiration rates, depth to the underlying water table, and the minimal ecology of the area), and soil analytical results obtained from the Phase II Stage I investigation. The decision document also reiterated that all of the Phase II Stage I DQOs as agreed to by USEPA Region 6, were met in the Phase II Stage I investigation. Because the DQOs were met, the decision document considered the collected data sufficient in quality and quantity to reduce uncertainty and support NFA status (EA, 1990b).

Upon review of the 1990 LF-04 (SWMU 104) Final Decision document, USEPA Region 6 required additional sampling at the landfill to address an identified data gap, specifically the lack of soil analytical data between 15 and 50 feet bgs, the soil interval previously not analyzed during the IRP Phase II Stage I investigation (Radian, 1986). Consequently, at the request of the USEPA, a supplemental RI project plan was developed and submitted in July 1992 (Radian, 1992b).

The LF-04 (SWMU 104) RFI field event was conducted from August through September 1992. The field event consisted of 10 soil borings (designated as 4H through 4N and 4P through 4R) completed to a maximum depth of 60 feet bgs. The borings were located in former disposal trenches, as discerned by slight surface depressions, in order to preferentially sample beneath the burned and buried wastes. Four of the borings (4H, 4I, 4L, and 4M) encountered refusal during advancement of the borehole. Backfill/soil cover was encountered in six of the borings. A total of 120 soil samples (6 surface soil samples and 10 to 12 subsurface soil samples per boring from the base of the landfill to 60 feet bgs) were analyzed for VOCs, SVOCs, TRPH, organochlorine pesticides, PCBs, and TAL metals. In addition, 30 of the samples were also analyzed for TPH (diesel, jet fuel, and kerosene), total purgable TPH (gasoline and its components) and chlorinated herbicides.

The soil samples obtained during the 1992 RFI contained several VOCs: organochlorine pesticides, Aroclor-1260, diesel, TRPH, and herbicides. Borehole 4M contained 4,4'-DDT (10 to 640 micrograms per kilogram [μg/kg]), 4,4'-DDD (0.6 to 64 μg/kg), and 4,4'-DDE (<0.37 to 23 μg/kg) in samples obtained from 15, 20, 22.5, and 30 feet bgs. Toluene, xylenes, and 2-(2-Methyl-4-chlorophenoxy)propanoic acid (MCPP) were detected at low (sub-

parts per million) concentrations in less than 10 percent of the LF-04 (SWMU 104) 1992 RFI samples. None of the detected compounds exceeded NMED residential SSLs.

As part of the RFI, the 1986 Phase II Stage I investigation (Radian, 1986) and 1992 RFI (Radian, 1994c) soil data were compared to the RCRA Proposed Subpart S Media Action Levels. The concentrations of all target analytes in the Landfill No.4 samples were found to be less than the proposed noncarcinogenic action levels. Inorganics were analyzed using Induced Coupled Plasma Emission Spectroscopy (ICPES). This method yielded elevated detection limits and matrix interference for antimony and thallium. Several of these samples were submitted for reanalysis using atomic absorption, which is less susceptible to strong inter-elemental calcium effects as ICPES. All samples were determined (by atomic absorption) to contain antimony and thallium well below the soil action levels. All other metal concentrations were below listed soil action levels.

None of the organic compounds detected exceeded NMED residential SSLs; however, beta-BHC and methylene chloride were detected at concentrations slightly exceeding NMED soil to groundwater migration SSLs (DAF 20). Both beta-BHC and methylene chloride compounds were detected in only one and two samples, respectively, at concentrations slightly exceeding the NMED soil to groundwater migration SSLs (DAF 20). Beta-BHC was not detected in the groundwater collected downgradient of LF-04 (SWMU 104). Methylene chloride is suspected to be a result of laboratory contamination since it was only detected once. Arsenic was the only metal detected in the soils that exceeded NMED residential SSLs, and was detected solely in the surface soil sample obtained from boring 4I. Both barium and iron were detected at concentrations exceeding NMED soil to groundwater migration SSLs (DAF 20). Given the semi-arid climate, high concentrations of barium and iron are expected.

Groundwater flow and contaminant transport were modeled as part of the RFI using analytical solutions for estimating the time of travel of soil moisture through unsaturated soil from the bottom of the landfill to the Ogallala aquifer, assuming steady-state conditions in the soil column. The time required for a contaminant to migrate to the underlying aquifer was approximately 173 years. The fate and movement of organic materials in subsurface environments are governed largely by sorption and biodegradation. Sorption affects the rate of travel of organic material, relative to that of water through subsurface systems. Solutes which may be sorbed/desorbed on soil, such as metals and pesticides, are expected to migrate at a slower apparent velocity than the soil moisture, and will therefore require a longer period of time to reach the water table. However, the ultimate fate of organic compounds in the subsurface system depends upon biodegradative processes. The attenuation of organic species from biological, chemical, and physical degradation was estimated assuming a first-order decay mechanism. Based on the modeling, significant future contamination of the water table with contaminants originating at LF-04 (SWMU 104) was determined to be highly unlikely. A detailed discussion of the modeling, the inputs used, and the soil to groundwater contaminant migration results are located in Attachment 2 along with the RFI risk assessment.

A risk assessment, consisting of a quantitative BRA and a qualitative ERA, was conducted as part of the 1992 RFI. The BRA evaluated the potential risk to human receptors posed by soil contaminants detected during the 1992 RFI. The Phase II, Stage I 1986 soil data was not incorporated into the risk assessment due to analytical detection limit differences between the two sampling events. A copy of the 1992 RFI risk assessment is included in Appendix D.

The following COPCs were identified from the 1992 RFI soil data: acetone, aldrin, beta-BHC, delta-BHC, gamma-BHC, 2,4-D, 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, dichloroprop, diesel, endrin, heptachlor epoxide, 2-hexanone, hydrocarbons, methylene chloride, 4-methyl-2-pentanone, MCPP, toluene, 2,4,5-T, xylenes, and zinc. Exposure pathways investigated in the risk assessment included releases to ambient air, groundwater, and surface water (e.g., Playa Lake [SWMU 103]) via runoff from the landfill. Releases to the groundwater were included even though the time required for the constituents to travel to the groundwater and the assumed attenuation factors indicate that the concentrations of chemicals in the groundwater would be insignificant (Radian, 1994c). Because the use of the landfill was not expected to change, the RFI BRA evaluated only current scenarios. Potential receptors in the BRA were:

- Animal and plant receptors;
- People who consume commercially produced agricultural crops grown at the perimeter of the site;
- People who consume meat and/or milk from livestock fed on crops grown at the site perimeter; and
- Cannon AFB personnel and on-site workers exposed to fugitive dust and volatilization of chemicals at the site.

Results of the risk assessment identified no unacceptable risk to human health and the environment.

Based on the results of the RFI risk assessment, the RFI report recommended a Class III permit modification for LF-04 (SWMU 04). Cannon AFB subsequently completed a draft Decision Document requesting NFA status for LF-04 (SWMU 104) (Radian, 1993d).

After addressing several NODs, Cannon AFB submitted the final Draft RFI report in January 1993 (Radian, 1993b). The final Draft RFI report recommended NFA status and requested a Class III permit modification for LF-04 (SWMU 104) (Radian, 1993b) NMED responded in a March 23, 1993, letter approving the Final RFI Report (inaccurately labeled as a Remedial Investigation Report on the submitted final Draft report) for Landfills No.3 and No.4 with the explicit understanding that NMED reserved the right to require additional work at these landfills if the investigation at LF-05 revealed the need for remedial action. A copy of the March 23, 1993, NMED RFI (inaccurately identified as Remedial Investigation Report) acceptance letter is included in Appendix C. Separate RFI reports were submitted for LF-03 (SWMU 105) and LF-04 (SWMU 104); however the RFIs were reviewed as one report by both NMED and USEPA Region 6.

After review of the final Draft RFI (Radian, 1993b), the USEPA required additional clarification and submitted several NODs. Cannon AFB submitted several comment response letters and USEPA Region 6 approved the RFI report with the final report consisting of the January 1993 RFI report, and Cannon AFB comment responses to USEPA Region 6 NODs dated April 13, 1993, August 4, 1993, and November 1, 1993. A copy of the USEPA RFI approval letter is included in Appendix C. The USEPA approval letter, however, stipulated that Cannon AFB must complete a monitoring well to the uppermost aquifer at the downgradient edge of LF-04 (SWMU 104) in order to analyze the groundwater for contamination. Cannon AFB updated the Final RFI report with the USEPA Region 6 approved comment responses and resubmitted the Final RFI report in March 1994, recommending a class III permit modification (Radian, 1994c). However, in a comment response letter to the USEPA Region 6, Cannon AFB agreed to the installation of a downgradient monitoring well for LF-04 (SWMU 104) and annual sampling (Cannon AFB, June 17, 1994). A copy of this letter is included in Appendix C.

4.4.7 RFI Phase II

RFI Phase II activities consisted of the installation and sampling of LF-04 (SWMU 104) compliance monitoring well (designated as 'MW-N'). Groundwater monitoring well MW-N was installed downgradient of Landfill No.4 in December 1994 in accordance with the approved RFI Phase II workplan (W-C, 1995a). The well was installed in the upper 30 feet of the Ogallala Aquifer, developed, and sampled. The results of the sampling event were submitted in a final Phase II RFI report.

In a March 26, 1997, letter, NMED requested additional information be provided in the LF-04 (SWMU 104) RFI Phase II report. Specifically, the NMED letter specified that an adequate ecological risk analysis had not been completed, that the Phase II RFI report was insufficient in addressing the potential migration of contaminants from 15 feet bgs (corresponding to highest DDT detection) through evapotranspiration and soil-dwelling animal activities, and that the report was insufficient in discussing the probability of surface water impacts through shallow groundwater migration, runoff, or other mechanisms. The ecological risk analysis data in question had been previously reported and approved by NMED and USEPA (Radian, 1994c). Cannon AFB closed issues raised by the March 1997 NMED letter on May 13, 1997. The Cannon AFB comment response letter included comment responses from the facility's remedial project manager, from the facility's Natural Resource Planner and from the USACE. The comment response letter re-presented the analytical data from the RFI (Radian, 1994c), discussed the reasoning and validity of the risk assessment, provided additional information on the SWMUs ecology, discussed the potential for surface water runoff to discharge from LF-04 (SWMU 104), and included a discussion on the ecotoxicological screening conducted on the sediment organochlorine pesticide concentrations in Playa Lake (SWMU 103). Both the NMED request for additional information and the Cannon AFB comment response letter are included in Appendix C.

4.4.8 Groundwater LTM activities

Beginning in 1996, Cannon AFB initiated groundwater LTM at LF-04 (SWMU 104) using MW-N as the compliance monitoring well. To date LTM activities conducted at LF-04 (SWMU 104) has included 4 quarterly sampling events (1996); two semi-annual monitoring events (1997); and annual sampling events from 1998 to the present. A summary of the positive groundwater detections is included as Table 4.5. Groundwater data associated with the 2001 and 2004 LTM monitoring events was not included because the associated reports were not obtained from the Cannon AFB administrative record.

Annual groundwater LTM work plans have been generated since 1996 specifying the required analyses and sampling procedures. Groundwater samples were initially analyzed for Appendix IX VOCs, Appendix IX SVOCs, Appendix IX pesticides/PCBs, Appendix IX herbicides, Appendix IX metals, cyanide, TOC, Total Organic Halides TOX, sulfide, total phenols, and dioxin 2,3,7,8-TCDD. In early 1998, Cannon AFB submitted a proposal to NMED asking to modify groundwater LTM analytical requirements. Specifically, Cannon AFB requested that Appendix IX sampling to be conducted every three years with non-Appendix IX sampling conducted every year except every third year when Appendix IX sampling is conducted. In addition, Cannon AFB proposed to add the following water quality and contaminant indicators, sulfates, nitrates/nitrites, pH, conductivity, chloride, phenols, sodium, iron, and magnesium and requested the removal of dioxins, cyanide, sulfide, TOC, and TOX. A copy of the Cannon AFB request letter is included in Appendix C.

Positive LTM analytical results through 2005 (with the exception of the 2001 and 2004 data) have been included on Table 4.5. In addition, applicable USEPA MCLs and NMGWQSs (NMAC 20.6.2.3103) have been included on Table 4.5 to evaluate the groundwater data using current regulatory screening criteria. Methylene chloride, bis(2-ethylhexyl)phthalate, di-n-butylphthalate, 15 metals, and general groundwater chemistry components (i.e., chloride, nitrate, sulfate, sulfide, TOC, and TOX) have been detected in the groundwater immediately downgradient of LF-04 (SWMU 104). None of the detected compounds or metals exceeded Federal MCLs or NMGWQS. Pesticides, PCBs, herbicides, dioxin 2,3,7,8-TCDD, cyanide, total phenols, and PAHs have never been detected in the groundwater since LTM activities were initiated.

4.4.9 Statement of Basis

In April 2001, Cannon AFB submitted a Statement of Basis requesting NFA status for 62 SWMUs (including LF-04 [SWMU 104]), 9 AOCs, and 1 disposal pit listed in the RCRA Part B Permit pursuant to 40 CFR 270.42(c) of the 1984 HSWA. In a January 12, 2004 response letter, NMED stated that LF-04 (SWMU 104) did not qualify for NFA status because a CMS of Landfill No.4 is currently under review. However, a CMS for LF-04 (SWMU 104) has never been prepared or submitted to NMED, since it has been in NFA/LTM status and a CMS is not warranted. A copy of the January 12, 2004 NMED letter is included in Appendix C.

4.5 SITE CONCEPTUAL SITE MODEL

4.5.1 Nature and Extent of Contamination

Numerous soil investigations have been conducted at LF-04 (SWMU 104). A total of 17 soil borings and 1 exploratory trench were completed within the boundaries of the landfill and 142 surface and subsurface soil samples were collected and submitted for laboratory analyses. The soil borings were advanced to a maximum depth of 60 feet bgs. In addition, nine years of groundwater LTM activities have occurred at LF-04 (SWMU 104).

4.5.1.1 Soils

Several VOCs, organochlorine pesticides, Aroclor 1260, diesel, TRPH, herbicides, and metals were detected in the soil samples collected from Landfill No.4. Organic compounds, petroleum hydrocarbons, and metals were detected above background to the maximum sample depth of 59 feet bgs.

None of the organic compounds detected exceeded RCRA Proposed Subpart S Media Action Levels or NMED residential SSLs. None of the metals detected exceeded Subpart S noncarcinogenic action levels or NMED residential SSLs.

Methylene chloride and beta-BHC were detected at concentrations exceeding NMED soil to groundwater SSLs (DAF 20). Beta-BHC has not been detected in the groundwater downgradient of Landfill No.4. Methylene chloride, a common laboratory contaminant, was detected in the groundwater downgradient of Landfill No.4 only during the 1998 annual sampling event. The only positive methylene chloride detections in the groundwater downgradient of Landfill Nos. 3 and 25 (after installation of monitoring well MW-R) also occurred in 1998, suggesting that the methylene chloride detection during this round was a result of laboratory contamination. Barium and iron were also detected at concentrations exceeding NMED soil to groundwater SSLs (DAF 20); however, the iron facility background concentration also exceeds the NMED soil to groundwater SSL (DAF 20). The elevated barium concentrations were detected in four samples obtained from separate borings and occurred between 22 and 51 feet bgs. Iron and barium are not present in groundwater above standards.

Diesel and TRPH concentrations in the landfill soils ranged from 3,300 μg/kg to 19,000 μg/kg and from <26 mg/kg to 87 mg/kg, respectively. The diesel and TRPH detected concentrations are well below NMED TPH Screening guidelines for residential direct exposure (i.e., 880 mg/kg for diesel and 800 mg/kg for unknown oils).

Based on a risk assessment of the 1992 RFI soil data, no unacceptable risk to human health or the environment was identified.

4.5.1.2 Groundwater

There is no impact to the groundwater downgradient of LF-04 (SWMU 104). Methylene chloride, two phthalates, 15 metals, and several of the groundwater chemistry components have been detected in the groundwater downgradient of LF-04 (SWMU 104). None of the organic compounds or inorganics has been detected above USEPA MCLs or NMGWQS. As stated above, the methylene chloride detection is suspected to be a result of laboratory contamination since it was detected only once (i.e., during the annual 1998 sampling event), which also corresponded to its only positive detection in the groundwater of LF-03 (SWMU 105). Methylene chloride was also only positively detected in the groundwater obtained from LF-25 (SWMU 97) in 1998 after the installation of monitoring well MW-R and startup of the groundwater LTM activities.

4.5.2 Contaminant Migration Pathways

Contaminant migration pathways at LF-04 (SWMU 104) have been identified as being soil to air migration through volatilization and dust transported, surface water runoff discharging to Playa Lake, soil to groundwater migration, and uptake by plants and animals (Radian, 1994c). However, regional and site-specific physical factors as well as the physical properties of the detected contaminants minimize and/or inhibit contaminant migration.

4.5.2.1 Soil to Air Migration (compound volatilization and fugitive dust transport)

A grass-vegetated 2 to 4.5 foot thick soil cap was observed to cover the former LF-04 (SWMU 104) disposal trenches. The presence of the grass-covered soil cap helps to minimize and potentially inhibits the transportation of landfill contaminated dust. In addition, few organic compounds prone to volatilization were detected in the landfill surface soil samples. With the exception of methylene chloride, a common laboratory contaminant, no VOCs were detected in the landfill surface soil samples. Given the volatile nature of methylene chloride, it's unlikely the VOC would have remained at detected concentrations in the surface soil after nearly 40 years of inactivity. Diesel and TRPH were both detected in the collected surface soil samples but the petroleum compounds are not highly volatile.

Little to no soil moisture was identified within the disposal trench soils or at the base of the disposal trenches during borehole advancement and completion of the exploratory trench. The apparent lack of soil moisture and leachate in the landfill soils indicates degassing of accumulated soil moisture/leachate is not occurring.

4.5.2.2 Surface Water Runoff Discharge

Although the landfill is relatively flat, an overall area-wide northerly slope is present; suggesting the possibility that surface water runoff generated at LF-04 (SWMU 104) may discharge to Playa Lake (SWMU 103). However, LF-04 (SWMU 104) is covered with a soil cap limiting the potential for the transport and discharge of landfill contaminants. In addition, as documented in the 1986 Phase II, Stage I report (Radian, 1986) and the 1994 final RFI

report (Radian, 1994c), LF-04 (SWMU 104) is unpaved, underlain with a sandy soil, vegetated with grasses, and contains numerous shallow depressions which appear to have developed over the former disposal trenches. Given the landfill's generally dry sandy soil, vegetated condition, and the regional low annual precipitation rate, the precipitation that falls onto the landfill surface would most likely infiltrate into the underlying soil as opposed to discharging as overland flow or sheet flow. If surface water runoff develops, the runoff would be diverted to the shallow depressions that pockmark the landfill's surface. The lack of a surface water transport mechanism at LF-04 (SWMU 104) is supported by the lack of visible surface water drainage features such as draws, rills, or swales emanating from the landfill.

4.5.2.3 Soil to Groundwater Migration

Based on vertical profiling of the soil analytical results, vertical migration of organic compounds and metals above facility background concentrations has occurred to at least the maximum sample depth of 60 feet bgs. Vertical migration is limited by the Cannon AFB regional low annual precipitation rate and high annual evapotranspiration rate, the presence of a caliche unit within the upper 60 feet of soil, and groundwater occurring approximately 289 feet bgs.

The regional low annual precipitation rate and high annual evapotranspiration rate limit the amount of soil moisture able to infiltrate into the subsurface soil. The lack of soil moisture vertically migrating into the subsurface is supported by the lack of soil moisture identified during borehole advancement. Groundwater was not observed in the landfill soils, at the base of the landfill, or in the soils beneath the landfill. Also, no shallow groundwater or perched groundwater water bearing zones were observed to have developed on the more cemented layers of the caliche unit. The presence of the caliche unit most likely inhibits groundwater migration by impeding vertical migration and subjecting the infiltrating soil moisture in the shallow subsurface to evapotranspiration.

As discussed in the 1994 final RFI report (Radian, 1994c), mathematical models were employed to evaluate the soil to groundwater migration pathway. Based on the assumption used under steady state conditions, approximately 173 years, at a minimum, would be required for soil moisture at the base of the landfill to migrate to the underlying water table. The fate and movement of organic materials in subsurface environments are governed largely by sorption and biodegradation. Sorption affects the rate of travel of organic material, relative to that of water through subsurface systems (McCarty et. al., 1981). Solutes which may be sorbed/desorbed on soil, such as metals and pesticides, are expected to migrate at a slower apparent velocity than the soil moisture, and will require a longer period of time to reach the water table. The ultimate fate of organic compounds in the subsurface system depends upon biodegradative processes. The attenuation of organic species from biological, chemical, and physical degradation was estimated during the RFI investigation assuming a first-order decay mechanism (Radian, 1994e). Based on the information obtained, the RFI concluded that significant contamination of the water table with contaminants originating at LF-04 (SWMU 104) is highly unlikely in the future.

4.5.2.4 Uptake by Plants and Animals

Land use in the area surrounding Cannon AFB is primarily agricultural. Agricultural fields are present in the vicinity of the landfill. However, no agricultural fields are present at LF-04 (SWMU 104) and none of the vegetation present within the landfill is used for livestock feed.

4.6 CONCLUSIONS AND RECOMMENDATIONS

LF-04 (SWMU 104) is a seven acre parcel of land formerly used for burn and disposal trenching operations for one year between 1967 and 1968. Disposal trenches were excavated to a maximum depth of 16.5 feet bgs and possibly extending 250 feet. The amount of waste material disposed within the landfill trenches has not been determined. No waste disposal activities are know to have occurred for nearly 40 years. During subsurface investigation activities, waste material encountered included glass, soda and beer cans, clothing, plastic sheeting and bags, scrap metal, insulated and non-insulated wiring, unburnt styrofoam, and one crushed 5-gallon can.

Minor impacts to the soil were identified during the RFI conducted in 1992. NMED upon review of the final RFI report submitted in June 1994 concurred with the report's recommendation for NFA status and Class III modification.

Upon review of the final 1994 RFI report, USEPA Region 6 accepted the RFI but required the installation and sampling of a downgradient monitoring well. Ten years of groundwater LTM activities have since occurred. No organic or inorganic compounds detected in the groundwater have exceeded Federal MCLs or NMGWQS.

Given no soil impacts beneath the landfill, the absence of groundwater contamination detected in a downgradient compliance monitoring well over a 10 year sampling period, risk assessment evaluations indicating no unacceptable risks to human health and the environment, NFA under NMED Criterion 5 and a Class III permit modification is requested for LF-04 (SWMU 104).

5.0 LANDFILL NO. 25 (LF-25/SWMU 97)

5.1 DESCRIPTION

LF-25 (SWMU 97) is an inactive construction rubble landfill occupying a 32 acre elongated trapezoidal area in the eastern portion of the Cannon AFB east of Perimeter road. The landfill location with respect to the surrounding facility is depicted on Figure 2.2.

The site encompasses multiple rubble piles consisting of large chucks of concrete formerly mixed with asbestos siding tiles, metal and asbestos/cement pipe, asphalt mixed with soil, and small amounts of wood. The heights of the rubble piles vary across the site and reach a maximum height of 15 feet above natural ground surface in the northern portion of the unit. However, most of the unit is covered with individual rubble piles approximately 3 to 4 feet high. The oldest piles of rubble are present on the north and west sides of the unit and are covered with grasses, shrubs, and small trees.

5.2 WASTE HISTORY

The rubble occupying LF-25 (SWMU 97) consists of the remains of demolished World War II temporary buildings and runways. The exact startup date of disposal activities is unknown but believed to be between 1945 and 1961. In 1959, the 312th Fighter-Bomber Group was deactivated and replaced by the 27th Tactical Fighter Wing. To support this command change, programming, planning and design for a major base realignment occurred allowing demolition/remodeling of existing facilities and construction of new facilities to begin in 1961 with the resulting rubbish and debris dumped near the munitions compound. The closure date of the rubble landfill is unknown but no evidence of recent dumping has been observed during the numerous investigations conducted at the unit.

During the 1991 Environmental Assessment (USACE, 1991), waste consisting of cinders, ash, burned material, glass, and metal was encountered in what appeared to be burn trenches. One of the burn trenches appeared to be 10 feet wide and approximately three feet below the original land surface.

5.3 ENVIRONMENTAL SETTING

5.3.1 Topography

The topography of the LF-25 (SWMU 97) area slopes from north to south. As stated above, the topography of the site has been modified due to the surficial disposal of construction debris. The northern portion of the unit reaches a maximum height of approximately 15 feet above the natural ground surface, while the southern portion of the unit varies due to individual debris piles ranging from 3 to 4 feet above the natural ground surface.

5.3.2 Hydrology

No surface water bodies have been observed on or immediately adjacent to LF-25 (SWMU 97). Based on observations obtained during the LF-25 (SWMU 97) RFI, runoff from Landfill No.25 discharges to Playa Lake (SWMU 103) (Radian, 1994f). Playa Lake is located approximately 500 feet southeast of the landfill.

5.3.3 Geology

Based on the results of the RFI, a generalized geologic column consisting of surface rubble, subsurface rubble, a soil horizon, and two divisions of the Ogallala Formation is present beneath the landfill (Radian, 1994f). Boring logs completed during the subsurface investigations are included in Appendix A.

The surface rubble consisted of construction debris, bricks, concrete blocks, tiles, concrete culvert, asphalt roofing shingles, asphalt and concrete paving, and sub-base material (USACE, 1991). The subsurface rubble was similar to the surface rubble but usually only 5 inches in diameter or less and mixed with sands and gravels that appear to be the upper portion of the Ogallala Formation.

The soil horizon at Landfill No.25 consisted of thin sandy topsoil, a 2 to 3 foot thick caliche layer, and a c-horizon developed from the Ogallala Formation. The soil horizon ranged in thickness from 0 to 4 feet. Beneath the soil horizon, 25 to 30 feet of the Ogallala Formation was observed to be well cemented sandstone with extremely hard caliche layers and nodules. The caliche ranged from the consistency of concrete to a friable material. Beneath the caliche layer, the Ogallala Formation consists of unconsolidated sand. Several caliche layers are present but are not as abundant as in the top 25 feet.

Shallow groundwater (i.e., groundwater occurring in the soils above the regional aquifer) was not encountered during borehole advancement. No groundwater was observed within the waste material, at the basal contact of the disposal trenches, or beneath the disposal trenches within the underlying caliche.

5.3.4 Hydrogeology

Since groundwater monitoring began, the depth to groundwater has ranged from 287 to 294 feet bgs. Based on regional groundwater sampling, groundwater flows in a south-southeasterly direction beneath the facility. None of the RFI investigations indicate the presence of a shallower groundwater (Radian, 1986 and Radian, 1994b).

5.3.5 Ecology

A visual survey of the vegetative cover was completed during the RFI field investigation (Radian, 1994f). The overall vegetative cover was patchy with the unconsolidated landfill debris above the firmer Ogallala sediments supporting a different vegetative cover than

adjacent parts of the base. Chinese elms along with various other deciduous trees are found on the northern half of the landfill. Yucca is present throughout LF-25 (SWMU 97). Sage and rabbitbrush are the most common shrubs. Indian rice grass, foxtail barley, and blue gramma are the most common grasses.

5.4 SUMMARY OF PREVIOUS INVESTIGATIONS

Table 5.1 provides a summary of IRP documents that apply to LF-25 (SWMU 97). The following narrative provides a timeline for IRP and RCRA activities conducted on the landfill. This timeline provides the context and framework for the investigations and decisions that have been made with respect to the landfill. The locations of the soil borings, exploration trench, surface soil sample locations, and compliance monitoring well MW-K, MW-R, and MW-Ra associated with LF-25 (SWMU 97) are depicted on Figure 5.1.

Soil and groundwater analytical summary tables obtained from the previous investigations are attached as Tables 5.2 through 5.9. Similar to LF-03 and LF-04, the data are compared to current criteria.

LF-25 (SWMU 97) soil analytical results are summarized on Tables 5.2 through 5.8. LF-25 (SWMU 97) groundwater analytical results are presented on Table 5.9.

5.4.1 Site 17 (Old Entomology Area) IRP Phase IV Environmental Assessment

Although not identified as a site prior to the RFA, two soil borings, a groundwater monitoring well, and several soil and groundwater samples were collected from the area to be identified as LF-25 during a 1988 IRP Phase IV Environmental Assessment of Site 17 (SWMU 96), the Entomology Rinse area. Site 17 is located immediately west of LF-25 (SWMU 97) across Perimeter Road, and north of the facility's sewage lagoons (SWMUs 101 and 102). Two (borings B2 and B3) of the 8 soil borings and the groundwater monitoring well completed for the Phase IV investigation were completed within the confines of LF-25 (SWMU 97). Both borings B2 and B3 were completed to 100 feet bgs and sampled at 0.5 feet, 1.0 feet, 5 to 6 feet, and at every 10 foot interval thereafter to 100 feet bgs. The monitoring well (MW-K) was completed at a depth of 356 feet bgs, corresponding to the uppermost aquifer. All of the soil samples and the groundwater samples were analyzed for herbicides and pesticides. No herbicides were detected in any of the soil and groundwater samples and no pesticides were detected in the soil samples obtained from boring B2 or in the groundwater sample. Only the surface soil sample (collected at 0.5 feet bgs) obtained from boring B3 contained detectable concentrations of pesticides. Three pesticides, 4,4'-DDE, 4,4'-DDT, and chlordane, were detected at 0.5 mg/kg, 0.2 mg/kg, and 0.1 mg/kg, respectively, well below current NMED residential SSLs. According to the Phase IV Environmental Assessment, the pesticide concentrations do not pose a significant impact to the environment and that based on the site characteristics and the physical and chemical characteristics of the pesticides, groundwater contamination was not anticipated. The Phase IV investigation recommended no further action of Site 17. In an October 11, 2000 letter from NMED to Cannon AFB, NMED indicated that SWMU 96 may receive a NFA status award if additional documentation is provided.

5.4.2 Cannon AFB RCRA Facility Assessment

The RFA was the first investigation to identify the concrete rubble landfill as an environmental issue and labeled Landfill No.25 as SWMU 97 (and consequently LF-25). The RFA was unable to obtain information on the SWMU's startup date or closure date. In addition, release controls were not observed at the unit; however, there was no indication in the reviewed documents that a release had occurred from the rubble landfill (A.T. Kearney, 1987). Because the landfill appeared to be composed solely of construction-type of material, the RFA concluded that there was a low potential for contaminants to be released to the surrounding and underlying media and recommended NFA. SWMU 97 RFA summary sheets are included in Appendix E.

5.4.3 Cannon AFB RCRA Part B Permit

The Cannon AFB RCRA Part B permit was issued to the base on November 14, 1989, and became effective on December 17, 1989. The permit is based on provisions of New Mexico HWMR-5, as amended 1989. LF-25 (SWMU 97) is listed in the permit in Attachment 1, Table 3. Because of the corrective action precedent established by the HSWA, the procedures of the CERCLA IRP approach, including investigations and/or Remedial Actions for all Cannon AFB IRP sites identified as SWMUs, were changed to meet the applicable requirements of HSWA under the RCRA Corrective Action Plan.

5.4.4 Environmental Assessment

Due to the low priority status of LF-25 (SWMU 97), an RFI was scheduled for 1992 to 1993. However, the adjacent munitions facility was undergoing expansion and required the removal of the landfill. Consequently an environmental assessment of SWMU 97 was completed to determine if the landfill material could be safely moved.

(1) In December 1990, eight trenches were excavated in the northern portion of the landfill and sampled. Two types of trenches were excavated. Type A trenches were excavated only through the rubble, and samples of the rubble were submitted for asbestos and PCB analysis. Type B trenches were excavated through the rubble and five feet into the underlying soil. Rubble samples from the Type B trenches were analyzed for Toxicity Characteristic Leaching Procedure (TCLP) extractable organics, volatile organics, herbicides, pesticides, and metals, as well as for asbestos and PCBs. In addition, soil samples from the surface to 1 foot bgs and from 4 to 5 feet bgs were obtained from the Type B trenches and analyzed for VOCs, SVOCs, pesticides, PCBs, and selected metals.

Trenching of SWMU 97 indicated that the majority of the material in the rubble pile was airfield paving and sub-grade material. Building demolition rubble was also present at the unit, primarily in the southeastern portion of the unit at the surface in individual piles. A third type of waste encountered included cinders, ash, other burned material, as well as glass and metal in potential burn trenches. The burn trenches were encountered in two excavation

trenches, with the burn trench in one of the excavation trenches appearing to be approximately 10 feet wide by approximately 3 feet deep (USACE, 1991).

Asbestos was detected in one trench and was detected at a concentration of less than 0.25 percent actinolite asbestos. PCBs were not detected in any of the rubble samples. With respect to the TCLP analyses, no organic compounds were detected and only three metals, barium, cadmium, and mercury were detected in the samples. Both barium and mercury were detected at or below the maximum safe drinking water standards (MCLs and New Mexico State Standard [NMSS]). Cadmium was detected in one TCLP sample (Trench 3) at a concentration slightly exceeding the MCL for cadmium (0.005 mg/L). With respect to the soil sampling results, no VOCs, pesticides, or PCBs were detected in the surface to 1 foot and the 4 to 5 foot soil samples. Two SVOCs and thirteen metals were detected in the soil samples. All concentrations were below NMED residential SSLs. Benzidine was detected above current NMED residential standards in one soil sample collected from Trench 3 (4-5 feet bgs). One cadmium concentration, detected in a shallow soil sample, and all of the manganese positive detections exceeded NMED soil to groundwater migration SSLs (DAF 20) This data is presented on Table 5.4.

A review of the analytical data indicated that the north end of the rubble pile showed minimal amounts of contamination. Cadmium and benzidine were detected below the ash encountered in Trench 3. The number, length, location, and variation of material in the uncovered burn trenches remained unknown. Consequently, the environmental assessment recommended further investigation of the burn trenches and impacts to the underlying soil (USACE, 1991).

5.4.5 Landfill No. 25 RFI

Based on the results of the environmental assessment, an RFI was conducted to confirm and further define subsurface soil contamination and to delineate the extent of two burnpit areas identified during the environmental assessment (USACE, 1991). However, based upon a VSI, no visible evidence of the former potential burn trenches was observed. Due to this and since investigation activities associated with the large landfill would capture impacts from potential burn trenches, delineation of the former potential burn trenches was removed as an objective of the RFI (Radian, June 1994f).

(2) RFI field activities were conducted between September and October 1992 and included the completion of 14 soil borings and 9 trenches. Eight of the 14 borings were drilled through the approximate locations of four former excavation trenches to confirm the presence of contamination identified in the USACE Environmental Assessment investigation. The eight borings were completed to a maximum depth of 60 feet below the native ground surface, with soil samples collected from the surface and at every five foot interval. A background soil boring, located west of Perimeter Road and north of the sewage lagoons, was also completed to 60 feet bgs. The background soil boring was sampled in the same manner as the other eight deep soil borings. The remaining six soil borings were drilled to 10 feet bgs with soil samples collected on the surface, between 4 and 6 feet bgs, and 8 to 10 feet bgs. In addition, several trenches were excavated in the previously uninvestigated southern portion of the landfill to

determine the presence or absence of waste disposal trenches that had been previously observed in the northern portion of the landfill. A total of 139 soil samples plus 28 quality assurance (QA)/quality control (QC) samples were collected and submitted for the following laboratory analyses: VOCs, SVOCs, total metals, TRPH, pesticides/PCBs, and soil pH. Thirty-five of the samples were also analyzed for TPH and herbicides and 46 samples were analyzed for grain size.

VOCs, SVOCs, metals, organochlorine pesticides, TRPH, TPH, and chlorinated herbicides were all detected at levels above the analytical method reporting limit. With the exception of benzo(a)pyrene, TRPH, and arsenic, all compounds were detected below current NMED residential SSLs. TRPH was detected in these surface soil samples (0-2 ft bgs) at concentrations exceeding the TPH screening level (800 mg/kg) for unknown oil. One surface soil sample exceeded the noncarcinogenic RCRA Proposed Subpart S Media Action Level for lead. All other target metals and organics were less than the proposed noncarcinogenic action levels. Beryllium was the only metal detected above the RCRA Proposed Subpart S carcinogenic soil action level. However, the background beryllium concentration also exceeded the RCRA Proposed Subpart S carcinogenic soil action level. One surface soil sample contained benzo(a)pyrene and benzo(b)fluoranthene at concentrations exceeding the proposed carcinogenic soil action levels. No other compounds were detected at levels exceeding the proposed carcinogenic soil action levels.

Benzo(a)pyrene and arsenic were detected at concentrations exceeding NMED residential SSLs in one soil sample each. All other positive detections of benzo(a)pyrene and arsenic from the 139 samples collected as part of the study were below NMED residential SSLs. Dieldrin, beta-BHC, phenol, trichloropropene, methylene chloride, barium, iron, lead, and manganese were detected at concentrations exceeding NMED soil to groundwater migration SSLs. With the exception of methylene chloride, none of the other organic compounds exceeding the NMED soil to groundwater migration SSLs were detected in the groundwater downgradient of the landfill. Iron was the only metal detected in the soils above criteria exceeding New Mexico groundwater standards, but is believed to have been attributable to degradation of the monitoring well's stainless steel well screen. This assumption appears to be correct since iron hasn't exceeded screening criteria since replacing compliance well MW-R with MW-Ra.

GRO and DRO were detected in the soil samples obtained from LF-25 (SWMU 97). GRO was detected in three samples with concentrations ranging from 3 mg/kg to 5.4 mg/kg. DRO concentrations in the landfill soils ranged from 3.7 mg/kg to 120 mg/kg which are well below NMED Diesel TPH Screening guidelines for residential direct exposure of 880 mg/kg.

Groundwater flow and contaminant transport were modeled using analytical solutions for estimating the time of travel of soil moisture through unsaturated soil from the bottom of the landfill to the Ogallala aquifer, assuming steady-state conditions in the soil column. The time required for a contaminant to migrate to the underlying aquifer was approximately 173 years. The fate and movement of organic materials in subsurface environments are governed largely by sorption and biodegradation. Sorption affects the rate of travel of organic material, relative

to that of water through subsurface systems. Solutes which may be sorbed/desorbed on soil, such as metals and pesticides, are expected to migrate at a slower apparent velocity than the soil moisture, and will therefore require a longer period of time to reach the water table. However, the ultimate fate of organic compounds in the subsurface system depends upon biodegradative processes. The attenuation of organic species from biological, chemical, and physical degradation was estimated assuming a first-order decay mechanism. Based on the modeling, significant future contamination of the water table with contaminants originating at Landfill No.25, should they be present, was determined to be highly unlikely. A detailed discussion of the modeling, the inputs used, and the soil to groundwater contaminant migration results are located in Appendix E along with the RFI risk assessment.

A risk assessment was performed using the data gathered from the RFI and included a BRA and a qualitative ERA. Based on USEPA guidance documents, Landfill No.25 COPCs included benzene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, beta-BHC, 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, diesel, fluoranthene, heptachlor epoxide, heptachlor, hydrocarbons, MCPP, methylene chloride, pyrene, toluene, aluminum, arsenic, manganese, thallium, vanadium, and zinc.

The BRA assessment process considered the effects of site contamination on animal and plant receptors, people who consume commercially produced agricultural crops grown near the perimeter of the site, people who consume meat and/or milk from livestock fed on crops grown at the site perimeter, and Cannon AFB personnel, on-site workers, and nearby residents exposed to fugitive dust and volatized chemicals from the site. The potential releases to media from contaminants originating at LF-25 (SWMU 97) addressed in the risk assessment were those to ambient air, groundwater, and surface water (Playa Lake [SWMU 103]). Future risk associated with groundwater was evaluated, even though soil to groundwater migration modeling indicated little to no probability of landfill contaminants reaching the underlying water table, as a conservative approach to the BRA. All calculated risks for carcinogenic effects fell below the risk goal of $1x10^{-6}$ and all calculated risks for non-carcinogenic effects fell below the hazard index (HI) goal of 1.0. Consequently, the RFA recommended NFA status for LF-25 (SWMU 97).

The ERA selected dabbler ducks, including gadwells, mallards, pintails, shovelers, and widgeons, as the indicator species to represent potential impacts of the landfill on wildlife in the area. These duck species make up the majority of the wildlife found in the vicinity of Cannon AFB, typically in the vicinity Playa Lake during the migratory period. The ducks are not usually observed at LF-25 (SWMU 97). On average, ducks spend approximately 1.5 to 3 months per year at Cannon AFB (Radian, 1994f).The qualitative ERA considered the principal exposure to migratory ducks would result from runoff generated at LF-25 (SWMU 97) discharging to Playa Lake (SWMU 103). Although contaminants were detected in the landfill's surface soil, few chemicals are likely to be transported to Playa Lake due to low annual precipitation and high evapotranspiration rates.

Based on the soil analytical results, the results of the BRA and qualitative ERA, the RFA recommended NFA status and submittal of a Class III permit modification requesting LF-25 (SWMU 97) be removed from the permit. A draft copy of the RFI, inaccurately identified as a RI report, was submitted in August 1993 (Radian, 1993e). NMED responded in a December 1, 1993, letter approving the Draft RI Report.

After review of the Draft RFI, the USEPA required additional clarification as expressed in several NOD letters. Cannon AFB submitted several comment response letters and Cannon AFB submitted the Final RFI report (formerly the RI report) in June 1994 (Radian, 1994f). However, in a comment response letter to an USEPA Region 6 letter regarding the installation of compliance monitoring wells at Landfill Nos. 3 and 4, Cannon AFB agreed to annual sampling at LF-25 (SWMU 97) (Cannon AFB, June 17, 1994).

5.4.6 RFI Phase II

In July 1994, Cannon AFB submitted a Phase II RFA workplan for Appendix II and Appendix III SWMUs, including Landfill No.25 (SWMU 97). The workplan specified the redevelopment and sampling of monitoring well MW-K, previously installed within LF-25 (SWMU 97) during a Phase IV investigation of the Old Entomology Area (SWMU 96) (Walk Haydel, 1988), in order to determine the presence or absence of contamination in the groundwater beneath Landfill No.25. The groundwater collected from MW-K would be analyzed for VOCs, SVOCs, TAL metals, TRPH, pesticides/PCBs, and chlorinated herbicides.

MW-K was sampled on January 23 and 24, 1995. Three VOCs, carbon disulfide, methylene chloride, and toluene; one SVOC, 2-methylphenol, gasoline-range organics (GRO), and seven metals were detected in the groundwater. Carbon disulfide, a common laboratory contaminant, was detected in the sample obtained from well MW-K at a concentration of 36 micrograms per liter (μg/L) but was not detected in the sample's duplicate sample. The lack of a positive detection in the duplicate suggests the reported concentration of carbon disulfide in the groundwater may be attributable to laboratory contamination. Toluene was detected at 12 μg/L while GRO was detected at 19 μg/L. The positive toluene and GRO detections were believed to be associated with the asphalt present in the concrete rubble piles. As stated above, seven metals (arsenic, barium, copper, lead, selenium, vanadium, and zinc) were detected in the groundwater sample. None were detected at concentrations exceeding USEPA MCLs or the NMGWQS. The draft Phase II report was submitted in April 1995 (W-C, 1995b) to the USEPA and NMED. Upon review, USEPA responded requesting that additive non-cancer risk be calculated for LF-25 (SWMU 97) since the calculated HI of 1.7 for carbon disulfide required additional sampling and analysis to further assess groundwater contamination (USEPA, 1995). In a response to comment letter, Cannon AFB agreed to additional sampling to determine if carbon disulfide is present in the groundwater or the positive detection was associated with laboratory blank contamination (Appendix F).

5.4.7 Groundwater LTM Activities

Beginning in June 1997, CAFB initiated groundwater LTM of LF-25 (SWMU 97). It is important to note that NMED Solid Waste Management Regulations 20 NMAC 9.1, Subpart VIII specifically states construction and demolition landfills are exempt from groundwater monitoring requirements. LTM at LF-25 (SWMU 97) has included 4 quarterly sampling events, conducted from June 1997 to March 1998, and semi-annual sampling events since June 1998 to present.

Annual groundwater LTM work plans have been generated specifying the required analyses and sampling procedures. The required analyses have varied since instituting the groundwater LTM program with the approval of NMED. Prior to initiating groundwater LTM activities, monitoring well MW-K was abandoned due to a decline in the water level within the well. Consequently, MW-R was installed as a replacement well for MW-K. MW-R was located along the landfill's west-central boundary, approximately 70 feet east for MW-K and constructed of a 15-foot stainless steel well screen straddling the top of the uppermost aquifer underlying the landfill.

Table 5.9 presents the positive groundwater analytical data collected since groundwater sampling activities were initiated. Groundwater data associated with the December 2001 and both 2004 LTM monitoring events was not included because the associated reports were not obtained from the Cannon AFB administrative record. Initially, NMED required groundwater monitoring be conducted in order to determine if carbon disulfide, detected during the Phase II RFI investigation for Appendix III SWMUs (W-C, 1995b), but described as laboratory contamination was present. This was expressed in a November 1995 USEPA NOD letter regarding the Phase II Report (USEPA, 1995). Carbon disulfide has never been detected in the groundwater samples obtained from LF-25 (SWMU 97) since LTM activities began. Several VOCs and phthalates have been detected periodically during the LTM; however, none of the detected compounds have been detected at concentrations exceeding USEPA MCLs or NMGWQS. Several metals, aluminum, chromium, iron, manganese, and nickel have been detected above NMGWQS (chromium, iron, and nickel) and secondary MCLs (aluminum, iron, and manganese). Elevated dissolved iron and nickel concentrations were also detected in the MW-R groundwater samples. The elevated concentrations of chromium, iron, manganese, and nickel were considered to be most likely attributable to the corrosion of the well's stainless steel well screen. In December 2000, MW-R was replaced with a polyvinyl chloride constructed well, MW-Ra. Since the installation of MW-Ra, neither nickel nor chromium has been detected above screening criteria. However, aluminum, iron, and manganese have been detected above secondary (non-enforceable) MCLs but below NMGWQS.

5.4.8 Remedial Action

Remedial Action activities associated with asbestos removal were conducted at LF-25 (SWMU 97) in 2000 and reported in 2001 (Foster Wheeler, 2001). Remedial action activities included initial and final site surveys; tree removal and trimming; asbestos-containing material (ACM) separation, transportation, and disposal; concrete separation, crushing, and removal; native soil

cover/debris consolidation; grading and drainage construction; site revegetation. Based on a site walk-through and visual inspection conducted in August 2000, exposed ACM was identified as non-friable. The ACM consisted of intact transite pipe, transite siding, and roofing material. Field activities began in September 25, 2000 with major activities completed by January 5, 2001. Revegetation of the former landfill was completed by June 21, 2001.

During the remedial action, approximately 56 cubic yards (yd^3) of ACM waste and 16,000 yd^3 of concrete was removed from the Landfill No.25. The ACM was disposed at a certified asbestos landfill in Mountainair, New Mexico. Salvaged rebar from crushing operations was placed in metal bins and transported to DRMO for recycling. Over 77,000 pounds of rebar was generated during this project. In addition, 16,000 yd^3 of concrete rubble was permanently removed from the site and an earthen berm was constructed to a height of 2 feet above ground surface along the landfill's southern and eastern edges to prevent stormwater runoff from leaving the site. Final sight contouring was designed to retain and accommodate stormwater within the SWMU. The site grading generated the clean fill required for a 6-inch soil cover for the unit. No imported fill was necessary to complete the cover. Revegetation was conducted by seeding and mulching with native grasses using an approved seed mix. A three-strand barbed-wire fence was also installed around the site boundary.

5.5 SITE CONCEPTUAL SITE MODEL

5.5.1 Nature and Extent of Contamination

Numerous soil investigations have been conducted at LF-25 (SWMU 97). 16 soil borings, one monitoring well (MW-K), and 17 exploratory trenches were completed within the boundaries of the landfill. Two monitoring wells, MW-R and its replacement MW-Ra, were installed immediately downgradient of the rubble pile. A total of 181 surface and subsurface soil samples were collected and submitted for laboratory analyses. In addition, eight years of groundwater LTM activities have occurred at LF-25 (SWMU 97). Groundwater monitoring activities have consisted of 4 quarterly sampling events conducted in 1997-1998 and semi-annual sampling events conducted from 1998 to the present.

5.5.1.1 Soils

Minimal impact to the landfill soils has been detected during the three soil investigations conducted at LF-25 (SWMU 97).

Of the organic compounds and metals positively detected in the LF-25 (SWMU 97) soils, only benzidine, detected at 4 to 5 feet bgs in a trench sample (Trench 3) and benzo(a)pyrene detected in one surface soil sample, exceeded NMED residential SSLs. The elevated concentration of benzo(a)pyrene in the surface soil sample is most likely attributable to the asphalt debris documented within the rubble pile. Barium, cadmium, iron, lead, manganese, dieldrin, beta-BHC, and methylene chloride were detected at concentrations exceeding NMED soil to groundwater SSL (DAF 20). However, with the exception of methylene chloride, none

of the organic compounds exceeding respective NMED soil to groundwater SSL (DAF 20) have been detected in the groundwater since 1997.

Based on a risk assessment of the 1992 RFI soil data, no unacceptable risk to human health or the environment was identified.

5.5.1.2 Groundwater

In January 1995, carbon disulfide, a common laboratory contaminant, was detected in a groundwater sample collected from MW-K. Because the HI for carbon disulfide was determined to be 1.7, additional sampling was required by the USEPA to determine if the carbon disulfide detection was site related or associated with blank contamination. Cannon AFB agreed to additional sampling. Groundwater LTM activities have been conducted since June 1997 and have included 4 quarterly sampling events and 13 semi-annual sampling events. Carbon disulfide has never been detected in the groundwater samples collected during LTM activities.

Chromium, iron, and nickel concentrations above NMGWQS have been detected during groundwater LTM activities. Iron was the only metal detected in the landfill soils to exceed its respective NMED soil to groundwater migration SSL (DAF 20) value. Neither chromium nor nickel was identified as site-related soil contaminants.

5.5.2 Contaminant Migration Pathways

Contaminant migration pathway identified at LF-25 (SWMU 97) include soil to air migration through volatilization and dust transported, surface water runoff discharging to Playa Lake, soil to groundwater migration, and uptake by plants and animals (Radian, 1994f). All of these potential migration pathways were evaluated in the RFI risk assessment. However, regional and site-specific physical factors as well as the physical properties of the detected contaminants minimize and/or inhibit contaminant migration.

5.5.2.1 Soil to Air Migration (compound volatilization and fugitive dust transport)

RFI risk assessment evaluated the potential for site related contaminants to be transported through volatilization and wind transport. Several compounds (i.e., benzene, diesel fuel, hydrocarbons, methylene chloride, and toluene) detected in site soils have the potential to volatilize. However, all of these compounds were detected below analytical reporting limits or were considered to be associated with laboratory contamination (Radian, 1994f).

In addition to volatilization, wind transport of nonvolatile organic compounds and metals was also considered to be a potential migration pathway. However, the vegetated condition of the landfill, low contaminant concentrations in the surficial soils, and the actual presence of the construction debris (when present) would have helped minimize wind contact with the underlying impacted soils. Remedial actions conducted in early 2001, including the removal of the construction debris rubble, regarding of the unit's topography, and replanting, have further

minimized risk to human health and the environment from landfill contaminants present in the unit's surficial soils.

5.5.2.2 Surface Water Runoff Discharge

Based on the area topographic gradient, surface water runoff generated at LF-25 (SWMU 97) discharged to Playa Lake (SWMU 97), located southeast of the landfill (Radian, 1994f). Playa Lake (SWMU 103) receives effluent from the facility sewage treatment units and surrounding farmland. Playa Lake (SWMU 103) is already being investigated under the DOD IRP and RCRA programs. During remedial activities, a berm was constructed along the southeastern portion of the landfill to prevent surface water runoff generated at the site from discharging to Playa Lake.

5.5.2.3 Soil to Groundwater Migration

Vertical migration of potential contaminants is retarded by the Cannon AFB regional low annual precipitation rate and high annual evapotranspiration rate, the presence of a caliche unit within the upper 60 feet of soil, and groundwater occurring approximately 285 feet bgs.

The regional low annual precipitation rate and high annual evapotranspiration rate limit the amount of soil moisture able to infiltrate into the subsurface soil. The lack of soil moisture vertically migrating into the subsurface is supported by the lack of soil moisture identified during borehole advancement. Groundwater was not observed in the landfill soils, at the base of the landfill, or in the soils beneath the landfill. Also, no shallow groundwater or perched groundwater water bearing zones were observed to have developed on the more cemented layers of the caliche unit. The presence of the caliche unit most likely inhibits groundwater migration by impeding vertical migration and subjecting the infiltrating soil moisture in the shallow subsurface to evapotranspiration.

As discussed in the 1994 final RFI report (Radian, 1994f), mathematical models were employed to evaluate the soil to groundwater migration pathway. Based on the assumption used under steady state conditions, 173 years, at a minimum, would be required for soil moisture at the base of the landfill to migrate to the underlying water table. The fate and movement of organic materials in subsurface environments are governed largely by sorption and biodegradation. Sorption affects the rate of travel of organic material, relative to that of water through subsurface systems (McCarty et. al., 1981). Solutes which may be sorbed/desorbed on soil, such as metals and pesticides, are expected to migrate at a slower apparent velocity than the soil moisture, and will require a longer period of time to reach the water table. The ultimate fate of organic compounds in the subsurface system depends upon biodegradative processes. The attenuation of organic species from biological, chemical, and physical degradation was estimated during the RFI investigation assuming a first-order decay mechanism (Radian, 1994f). Based on the information obtained, the RFI concluded that significant contamination of the water table with contaminants originating at LF-25 (SWMU 97) is highly unlikely in the future.

5.5.2.4 Uptake by Plants and Animals

Land use in the area surrounding Cannon AFB is primarily agricultural. Agricultural fields are present offsite east and south of LF-25 which are grown for human consumption and livestock feed. However, no agricultural fields are present at LF-25 and none of the vegetation present within the landfill is used for livestock feed. Remedial activities conducted in 2001, including removal of the construction debris and regrading of the landfill unit, would further minimize bioaccumulation of landfill contaminants in the food chain.

5.6 CONCLUSIONS AND RECOMMENDATIONS

LF-25 (SWMU 97) is a 32-acre parcel of land formerly used to stockpile former construction debris generated during the demolition of former runways and base buildings. The startup of the former concrete rubble pile is unknown but is believed to be around 1961. Material observed within the debris pile included large chucks of concrete mixed with asbestos siding tiles, metal and asbestos/cement pipe, asphalt mixed with soil, and small amounts of wood. The heights of the rubble piles vary across the site and reach a maximum height of 15 feet above natural ground surface in the northern portion of the unit. However, most of the unit is covered with individual rubble piles approximately 3 to 4 feet high. The oldest piles of rubble are present on the north and west sides of the unit and are covered with grasses, shrubs, and small trees. During subsurface investigations, two potential burn disposal trenches were encountered in the northern portion of the landfill. At least one of the trenches appeared to be 10 feet wide and 3 to 4 feet deep. Material encountered in the burn trenches included cinders, ash, burned material, glass, and metal.

Minor impacts to the soil were identified during the RFI conducted in 1992. NMED upon review of the final RFI report submitted in June 1994 concurred with the report's recommendation for NFA status and Class III modification. ?

Upon review of the final 1994 RFI report, USEPA Region 6 accepted the RFI but required the installation and sampling of a downgradient monitoring well in order to determine if the positive detection of carbon disulfide in the groundwater beneath LF-25 (SWMU 97) during the Site 17 (Old Entomology Area) Phase IV investigation was the result of laboratory blank contamination or associated with former landfilling activities. Cannon AFB initiated groundwater LTM activities in 1995. Since the institution of groundwater LTM activities, several metals believed to be associated with the corrosion of monitoring well MW-R's stainless steel well screen were detected above USEPA MCLs and/or NMGWQS. MW-R was replaced with MW-Ra in 2001. Since replacing MW-Ra, none of the metals have been detected above USEPA MCLs or NMGWQS. During the December 2003 sampling event, both arsenic and thallium were detected at concentrations exceeding USEPA MCLs and NMGWQS. Neither metal was previously or has since been detected above these criteria.

Given the minor soil impacts detected beneath the landfill, the lack of groundwater contamination detected in a downgradient compliance monitoring well over nearly 10 years of LTM, risk assessment evaluations indicating no unacceptable risks to human health and the

environment, a completion of remedial activities associated with the removal of the construction debris, regrading of the former landfill, and implementation of engineering controls to contain surface water runoff, NFA status and Class III permit modification is requested for LF-25 (SWMU 97).

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TABLES

TABLE 3.1

SUMMARY OF LANDFILL No.3 DOCUMENTS
LANDFILL No.3 (LF-03/SWMU 105)
CANNON AFB

Date	Report/Activity	Reference	Report Conclusion/Recommendation	Action Taken by Cannon AFB
1983-1984	Initial Assessment/Record Search	CH2M HILL, August 1984	NFA with implementation of land use controls	Re-evaluated collected data
1984	Presurvey for Phase II IRP Investigation	Radian, 1984	IRP Phase II Groundwater Investigation	Initiated IRP Phase II, Stage I activities
1985-1986	IRP Phase II, Stage I Investigation	Radian, September 1986	Additional sampling around boring 3E	Initiated IRP Phase II/becomes RFI after 1989
1987	RCRA Facility Assessment (RFA)	A.T. Kearney, July 1987	RFI	Initiated RFI activities
1989	RCRA Hazardous Waste Part B Permit	NMED, November 1989	RFI	Initiated RFI activities - Workplan generation
1990	RFI Project Workplans (FSP, QAPP, HASP)	Lee Wan, June 1990	NFA	Developed Decision Document
1990	Final Decision Document	EA Engineering, November 1990a	NFA	Generated supplement Workplan
1992	RCRA Facility Investigation Project Management Plan	Radian, June 1992	Require soil sampling to address identified data gab	Conducted field sampling activities in July 1992
1993	Draft RFA report (inaccurately identified as Remedial Investigation Report)	Radian, January 1993a	NFA	Generated Decision Document
1993	Draft Decision Document	Radian, March 1993a	NFA	Addressed USEPA NODs
1994	(Draft Final) RCRA Facility Investigation Report	Radian, February 1994	NFA	Addressed USEPA NODs
1994	Final RCRA Facility Investigation Report	Radian, April 1994	NFA/Request for Class III Permit Modification	Agreed to annual groundwater monitoring. Prepared RFI Phase II Project Plans addressing groundwater well installation and sampling
1995	RCRA Facility Investigation Activities, Phase II to Appendix I SWMUs - Supplemental RFI report	Woodward-Clyde, January 1995	Submitted groundwater data	Prepared for quarterly groundwater LTM activities
1996	Quarterly Groundwater LTM	Foothill, February 1996; June 1996; August 1996; November 1996; January 1996; and October 1997	Requested Semi-Annual Monitoring	Prepared for semi-annual groundwater LTM activities
1997	Semi-Annual Groundwater LTM	Foothill, March 1997; September 1997; and March 1998	Requested Annual Monitoring and minor changes to analytical sampling scheme	Prepared for annual groundwater LTM activities
1998	Annual Groundwater LTM	Foothill, August 1998 and September 1999	none	Prepared for annual groundwater LTM activities
1999	Annual Groundwater LTM	Foothill, May 1999 and June 2000	none	Prepared for annual groundwater LTM activities
2000	Annual Groundwater LTM	Parallax, August 2000 and June 2001	none	Prepare Statement of Basis/Prepared for annual groundwater LTM activities
2001	Statement of Basis	Cannon AFB	NFA	None
2001	Annual Groundwater LTM	Bhate, June 2001	none	Prepared for annual groundwater LTM activities
2002	Annual Groundwater LTM	Bhate, August 2003	none	Prepared for annual groundwater LTM activities
2003	Semi-Annual Groundwater LTM	Bhate, April 2004	none	Prepared for semi-annual groundwater LTM activities
2005	Semi-Annual Groundwater LTM	HGL, February 2006	none	Prepared for semi-annual groundwater LTM activities

NFA - no further action
AFT - Air Force Base
IRP - Installation Restoration Program
RFI - RCRA facility investigation
RFA - RCRA facility assessment
RCRA - Resource Conservation and Recovery Act
FSP - field sampling plan
QAPP - Quality Assurance Project Plan
USEPA - United States Environmental Protection Agency
NOD - notice of deficeny
LTM - long term monitoring

TABLE 3.2

TRPH, DIESEL, VOC AND SVOC CONCENTRATIONS FOUND IN LF-03 (SWMU 105) SOILS
1992 RFI
CANNON AFB

CONSTITUENTS	NMED Residential SSLs[1]	NMED Soil to Groundwater SSLs (DAF 20)[1]	1992 RFI											
			CAN-105-3J-21	CAN-105-3J-25.5	CAN-105-3J-30	CAN-105-3J-30DUP	CAN-105-3J-35	CAN-105-3J-40	CAN-105-3J-45	CAN-105-3J-50	CAN-105-3J-52.5	CAN-105-3J-55	CAN-105-3J-61	CAN-105-3K-20
VOCS (ug/kg)														
Acetone 28100000	70,400,000	2,060	--	--	--	--	--	240	--	--	--	--	--	--
Acetonitrile	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--
Ethyl acetate 21000000	70,400,000	28,300	240	87	150	82	110	180	220	81	71	60	170	6.4
Methylene chloride 165000	165,000	16.9	--	--	5.6	5.8	--	5.3	--	--	--	--	--	--
Tetra-hydrofuran	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--
Toluene 252000	248,000	6,800	--	29	--	10	--	--	--	--	--	--	--	--
Xylenes 85000	132,000	10,100	--	--	--	--	--	--	--	--	--	--	--	--
SVOCs (ug/kg)														
Bis(2-ethylhexyl)phthalate 347000	347,000	2,170,000	--	--	--	--	--	--	--	--	--	--	--	--
Cyclohexanone 140000 EPA	NA	NA	--	220	--	--	--	--	--	--	--	--	--	360
Trichloropropene(s) 1210	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--
Diesel (ug/kg) 520 mg/kg	880,000[2][4]	NA	5,300 B	NA	NA	NA	4,400 B	5,800 B	NA	NA	NA	NA	NA	NA
TRPH (mg/kg) UNKNOWN OIL	800[2][3]	NA	31 B	31 B	--	46 B	33 B	27 B	--	31 B	--	--	--	50 B

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)
(2) NMED TPH Screening Guidelines
(3) TPH Screening Guideline for unknow TPH oil
(4) Presented in ug/kg for consistency with presented analytical data

200 mg/Kg as of 10/2006

NMED - New Mexico Environment Department
SSL - soil screening level
DAF - dilution attenuation factor
VOC - volatile organic compound
SVOC - semi-volatile organic compound
TRPH - total recoverable petroleum hydrocarbons
TPH - total petroleum hydrocarbons
mg/kg - milligrams per kilogram
ug/kg - micrograms per kilogram
-- - not detected
NA - not applicable/not analyzed
B - Indicates reported concentration was determined to be associated with laboratory contamination

Bolded text/shaded cells indicate constituent concentration above one or more screening criteria.

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TRPH, DIESEL, VOC AND SVOC CONCENTRATIONS FOUND IN LF-03 (SWMU 105) SOILS
1992 RFI
CANNON AFB

CONSTITUENTS	NMED Residential SSLs[1]	NMED Soil to Groundwater SSLs (DAF 20)[1]	1992 RFI											
			CAN-105-3K-22.5	CAN-105-3K-25	CAN-105-3K-30	CAN-105-3K-36	CAN-105-3K-40	CAN-105-3K-40DUP	CAN-105-3K-45	CAN-105-3K-51	CAN-105-3K-56	CAN-105-3K-59	CAN-105-3K-61	CAN-105-3L-21
VOCS (ug/kg)														
Acetone	70,400,000	2,060	--	--	--	--	--	--	--	--	--	--	--	--
Acetonitrile	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--
Ethyl acetate	70,400,000	28,300	28	64	73	120	73	82	160	54	140	77	14	110
Methylene chloride	165,000	16.9	--	--	--	--	--	--	--	--	--	--	--	--
Tetra-hydrofuran	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--
Toluene	248,000	6,800	--	--	--	--	--	--	--	--	--	--	--	--
Xylenes	132,000	10,100	--	--	--	--	--	--	--	--	--	--	--	--
SVOCs (ug/kg)														
Bis(2-ethylhexyl)phthalate	347,000	2,170,000	--	--	--	--	--	--	--	--	--	--	--	--
Cyclohexanone	NA	NA	150	260	180	240	240	770	280	--	--	--	280	150
Trichloropropene(s)	NA	NA	230	150	1,400	1,970	2,840	170	1,400	--	--	--	2,170	--
Diesel (ug/kg) 520.60U	880,000[2][4]	NA	3,700 B	2,900 B	--	--	3,100 B	3,300 B	4,100 B	--	--	--	--	3,300 B
TRPH (mg/kg)	800[2][3]	NA	38 B	--	53 B	30	--	--	36 B	36 B	38 B	27 B	27 B	34

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)
(2) NMED TPH Screening Guidelines
(3) TPH Screening Guideline for unknow TPH oil
(4) Presented in ug/kg for consistency with presented analytical data

NMED - New Mexico Environment Department
SSL - soil screening level
DAF - dilution attenuation factor
VOC - volatile organic compound
SVOC - semi-volatile organic compound
TRPH - total recoverable petroleum hydrocarbons
TPH - total petroleum hydrocarbons
mg/kg - milligrams per kilogram
ug/kg - micrograms per kilogram
-- - not detected
NA - not applicable/not analyzed
B - Indicates reported concentration was determined to be associated with laboratory contamination

Bolded text/shaded cells indicate constituent concentration above one or more screening criteria.

TABLE 3.2

TRPH, DIESEL, VOC AND SVOC CONCENTRATIONS FOUND IN LF-03 (SWMU 105) SOILS
1992 RFI
CANNON AFB

CONSTITUENTS	NMED Residential SSLs[1][2]	NMED Soil to Groundwater SSLs (DAF 20)[1]	1992 RFI											
			CAN-105-3L-23.5	CAN-105-3L-25	CAN-105-3L-30	CAN-105-3L-38	CAN-105-3L-38DUP	CAN-105-3L-41	CAN-105-3L-43	CAN-105-3L-48.5	CAN-105-3L-52.5	CAN-105-3L-56	CAN-105-3L-61	CAN-105-3M-23.5
VOCS (ug/kg)														
Acetone	70,400,000	2,060	--	--	--	--	--	--	--	--	--	--	--	--
Acetonitrile	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--
Ethyl acetate	70,400,000	28,300	92	180	260	99	190	180	300	330	180	140	190	190
Methylene chloride	165,000	16.9	--	--	--	--	--	--	--	--	--	--	--	7.3 B
Tetra-hydrofuran	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--
Toluene	248,000	6,800	--	--	--	--	--	--	--	--	--	--	--	--
Xylenes	132,000	10,100	--	--	--	--	--	--	--	--	--	--	--	--
SVOCs (ug/kg)														
Bis(2-ethylhexyl)phthalate	347,000	2,170,000	--	--	--	--	--	--	--	--	--	--	--	--
Cyclohexanone	NA	NA	--	150	190	--	--	220	--	140	--	210	280	--
Trichloropropene(s)	NA	NA	--	--	--	--	--	--	570	690	--	170	2,170	--
Diesel (ug/kg)	880,000[2][4]	NA	--	6,300 B	NA	NA	NA	--	NA	NA	NA	NA	NA	NA
TRPH (mg/kg)	800[2][3]	NA	35	39	--	31	41	34	28	34	61	43 B	38 B	--

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)
(2) NMED TPH Screening Guidelines
(3) TPH Screening Guideline for unknow TPH oil
(4) Presented in ug/kg for consistency with presented analytical data

NMED - New Mexico Environment Department
SSL - soil screening level
DAF - dilution attenuation factor
VOC - volatile organic compound
SVOC - semi-volatile organic compound
TRPH - total recoverable petroleum hydrocarbons
TPH - total petroleum hydrocarbons
mg/kg - milligrams per kilogram
ug/kg - micrograms per kilogram
-- - not detected
NA - not applicable/not analyzed
B - Indicates reported concentration was determined to be associated with laboratory contamination

Bolded text/shaded cells indicate constituent concentration above one or more screening criteria.

TABLE 3.2

TRPH, DIESEL, VOC AND SVOC CONCENTRATIONS FOUND IN LF-03 (SWMU 105) SOILS
1992 RFI
CANNON AFB

CONSTITUENTS	NMED Residential SSLs[1]	NMED Soil to Groundwater SSLs (DAF 20)[1]	1992 RFI											
			CAN-105-3M-40	CAN-105-3M-50	CAN-105-3M-52.5	CAN-105-3M-56	CAN-105-3M-61	CAN-105-3M-SFC	CAN-105-33MM-21	CAN-105-33MM-25	CAN-105-33MM-30.5	CAN-105-33MM-35	CAN-105-33MM-37.5	CAN-105-33MM-37.5DUP
VOCS (ug/kg)														
Acetone	70,400,000	2,060	--	--	--	--	--	--	--	--	--	--	--	--
Acetonitrile	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--
Ethyl acetate	70,400,000	28,300	180	110	240	230	190	--	--	--	24	130	130	99
Methylene chloride	165,000	16.9	--	--	--	--	--	--	--	7.2 B	--	--	--	--
Tetra-hydrofuran	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--
Toluene	248,000	6,800	--	11	--	--	--	63	--	--	--	23	--	--
Xylenes	132,000	10,100	--	--	--	--	--	--	--	--	--	--	--	--
SVOCs (ug/kg)														
Bis(2-ethylhexyl)phthalate	347,000	2,170,000	--	530 B	--	--	--	--	--	--	--	--	--	--
Cyclohexanone	NA	NA	--	--	--	--	--	200	--	180	140	--	--	--
Trichloropropene(s) 1,2,3	NA	NA	--	140	--	--	140	--	--	--	--	--	--	--
Diesel (ug/kg)	880,000[2][4]	NA	NA	NA	NA	NA	NA	NA	8,000 B	NA	NA	8,600 B	NA	NA
TRPH (mg/kg)	800[2][3]	NA	33	31	39	45	54	--	--	--	--	--	--	--

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)
(2) NMED TPH Screening Guidelines
(3) TPH Screening Guideline for unknow TPH oil
(4) Presented in ug/kg for consistency with presented analytical data

NMED - New Mexico Environment Department
SSL - soil screening level
DAF - dilution attenuation factor
VOC - volatile organic compound
SVOC - semi-volatile organic compound
TRPH - total recoverable petroleum hydrocarbons
TPH - total petroleum hydrocarbons
mg/kg - milligrams per kilogram
ug/kg - micrograms per kilogram
-- - not detected
NA - not applicable/not analyzed
B - Indicates reported concentration was determined to be associated with laboratory contamination

Bolded text/shaded cells indicate constituent concentration above one or more screening criteria.

Table 3.2

TRPH, DIESEL, VOC AND SVOC CONCENTRATIONS FOUND IN LF-03 (SWMU 105) SOILS
1992 RFI
CANNON AFB

			1992 RFI											
CONSTITUENTS	NMED Residential SSLs[1]	NMED Soil to Groundwater SSLs (DAF 20)[1]	CAN-105-3N-27	CAN-105-3N-30	CAN-105-3N-36	CAN-105-3N-SPC	CAN-105-3NN-20	CAN-105-3NN-41	CAN-105-3NN-45	CAN-105-3NN-45DUP	CAN-105-3NN-50	CAN-105-3NN-53	CAN-105-3NN-55	CAN-105-3NN-61
VOCS (ug/kg)														
Acetone	70,400,000	2,060	--	--	--	--	--	--	--	--	--	--	--	--
Acetonitrile	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--
Ethyl acetate	70,400,000	28,300	78	160	89	--	54	180	200	92	--	370	250	33
Methylene chloride	165,000	16.9	--	--	5.5 B	--	--	--	--	--	--	--	--	--
Tetra-hydrofuran	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--
Toluene	248,000	6,800	--	--	--	26	--	--	40	6.2	--	--	--	--
Xylenes	132,000	10,100	--	--	--	--	--	--	--	--	--	--	--	--
SVOCs (ug/kg)														
Bis(2-ethylhexyl)phthalate	347,000	2,170,000	--	--	--	--	--	--	--	--	--	--	--	--
Cyclohexanone	NA	NA	140	250	240	170	--	--	150	--	--	180	170	--
Trichloropropene(s)	NA	NA	--	--	240	--	250	280	150	--	430	320	--	--
Diesel (ug/kg)	880,000[2][4]	NA	NA	6,100 B	NA	NA	NA	NA	7,100 B	5,500 B	5,600 B	NA	NA	NA
TRPH (mg/kg)	800[2][3]	NA	--	--	--	--	--	--	--	--	--	--	--	--

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)
(2) NMED TPH Screening Guidelines
(3) TPH Screening Guideline for unknow TPH oil
(4) Presented in ug/kg for consistency with presented analytical data

NMED - New Mexico Environment Department
SSL - soil screening level
DAF - dilution attenuation factor
VOC - volatile organic compound
SVOC - semi-volatile organic compound
TRPH - total recoverable petroleum hydrocarbons
TPH - total petroleum hydrocarbons
mg/kg - milligrams per kilogram
ug/kg - micrograms per kilogram
-- - not detected
NA - not applicable/not analyzed
B - Indicates reported concentration was determined to be associated with laboratory contamination

Bolded text/shaded cells indicate constituent concentration above one or more screening criteria.

TRPH, DIESEL, VOC AND SVOC CONCENTRATIONS FOUND IN LF-03 (SWMU 105) SOILS
1992 RFI
CANNON AFB

CONSTITUENTS	NMED Residential SSLs[1]	NMED Soil to Groundwater SSLs (DAF 20)[1]	1992 RFI											
			CAN-105-3P-21	CAN-105-3P-26	CAN-105-3P-31	CAN-105-3P-36	CAN-105-3P-40	CAN-105-3P-45	CAN-105-3P-51	CAN-105-3P-53	CAN-105-3P-56	CAN-105-3P-56DUP	CAN-105-3P-61	CAN-105-3Q-21
VOCS (ug/kg)														
Acetone	70,400,000	2,060	--	--	--	--	--	--	--	--	--	--	--	--
Acetonitrile	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--
Ethyl acetate	70,400,000	28,300	41	--	31	130	110	60	84	31	7.2	--	43	21
Methylene chloride	165,000	16.9	--	5.5 B	--	--	--	--	--	--	--	--	--	36 B
Tetra-hydrofuran	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--
Toluene	248,000	6,800	--	--	--	--	--	--	--	--	--	--	--	--
Xylenes	132,000	10,100	--	--	--	--	--	--	--	--	--	--	--	--
SVOCs (ug/kg)														
Bis(2-ethylhexyl)phthalate	347,000	2,170,000	--	--	--	--	--	--	--	--	--	--	--	--
Cyclohexanone	NA	NA	140	--	180	--	--	170	--	240	240	--	200	320
Trichloropropene(s)	NA	NA	--	--	--	--	--	--	--	--	--	410	--	--
Diesel (ug/kg)	880,000[2][4]	NA	NA	NA	6,300 B	--	--	--	5,200 B	NA	NA	--	--	5,900
TRPH (mg/kg)	800[2][3]	NA	35 B	43 B	--	--	29 B	--	--	--	--	--	26 B	--

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)
(2) NMED TPH Screening Guidelines
(3) TPH Screening Guideline for unknow TPH oil
(4) Presented in ug/kg for consistency with presented analytical data

NMED - New Mexico Environment Department
SSL - soil screening level
DAF - dilution attenuation factor
VOC - volatile organic compound
SVOC - semi-volatile organic compound
TRPH - total recoverable petroleum hydrocarbons
TPH - total petroleum hydrocarbons
mg/kg - milligrams per kilogram
ug/kg - micrograms per kilogram
-- - not detected
NA - not applicable/not analyzed
B - Indicates reported concentration was determined to be associated with laboratory contamination

Bolded text/shaded cells indicate constituent concentration above one or more screening criteria.

TA[illegible].2

TRPH, DIESEL, VOC AND SVOC CONCENTRATIONS FOUND IN LF-03 (SWMU 105) SOILS
1992 RFI
CANNON AFB

CONSTITUENTS	NMED Residential SSLs[1]	NMED Soil to Groundwater SSLs (DAF 20)[1]	1992 RFI											
			CAN-105-3Q-26	CAN-105-3Q-30	CAN-105-3Q-36	CAN-105-3Q-41	CAN-105-3Q-46	CAN-105-3Q-51	CAN-105-3Q-51DUP	CAN-105-3Q-53.5	CAN-105-3Q-55	CAN-105-3Q-60	CAN-105-3Q-SFC	CAN-105-3R-21
VOCS (ug/kg)														
Acetone	70,400,000	2,060	--	--	--	--	--	--	--	--	--	--	--	--
Acetonitrile	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--
Ethyl acetate	70,400,000	28,300	88	84	8.4	--	91	32	84	9.4	87	57	--	--
Methylene chloride	165,000	16.9	15 B	19 B	--	--	--	--	--	--	--	--	22 B	--
Tetra-hydrofuran	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--
Toluene	248,000	6,800	--	--	--	--	--	--	--	--	--	--	--	--
Xylenes	132,000	10,100	--	--	--	--	--	--	--	--	--	--	--	--
SVOCs (ug/kg)														
Bis(2-ethylhexyl)phthalate	347,000	2,170,000	430	--	--	--	--	--	--	--	--	--	--	--
Cyclohexanone	NA	NA	--	260	--	--	--	180	180	140	--	--	240	220
Trichloropropene(s)	NA	NA	--	--	--	--	--	390	--	--	--	--	--	--
Diesel (ug/kg)	880,000[2][4]	NA	NA	NA	NA	NA	8,800 B	NA	NA	NA	7,300 B	NA	NA	NA
TRPH (mg/kg)	800[2][3]	NA	41 B	32 B	--	34 B	--	--	--	--	--	--	--	--

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)
(2) NMED TPH Screening Guidelines
(3) TPH Screening Guideline for unknow TPH oil
(4) Presented in ug/kg for consistency with presented analytical data

NMED - New Mexico Environment Department
SSL - soil screening level
DAF - dilution attenuation factor
VOC - volatile organic compound
SVOC - semi-volatile organic compound
TRPH - total recoverable petroleum hydrocarbons
TPH - total petroleum hydrocarbons
mg/kg - milligrams per kilogram
ug/kg - micrograms per kilogram
-- - not detected
NA - not applicable/not analyzed
B - Indicates reported concentration was determined to be associated with laboratory contamination

Bolded text/shaded cells indicate constituent concentration above one or more screening criteria.

TABLE 5.2

TRPH, DIESEL, VOC AND SVOC CONCENTRATIONS FOUND IN LF-03 (SWMU 105) SOILS
1992 RFI
CANNON AFB

CONSTITUENTS	NMED Residential SSLs[1]	NMED Soil to Groundwater SSLs (DAF 20)[1]	1992 RFI											
			CAN-105-3R-25	CAN-105-3R-31	CAN-105-3R-35	CAN-105-3R-41	CAN-105-3R-45	CAN-105-3R-51	CAN-105-3R-52.5	CAN-105-3R-52.5DUP	CAN-105-3R-56	CAN-105-3R-61	CAN-105-3S-21	CAN-105-3S-25
VOCS (ug/kg)														
Acetone	70,400,000	2,060	--	--	--	--	--	--	--	--	--	--	--	--
Acetonitrile	NA	NA	--	4.9	--	5.2	6.2	--	2.9	--	--	--	--	--
Ethyl acetate	70,400,000	28,300	--	--	--	--	--	--	--	--	--	--	--	--
Methylene chloride	165,000	16.9	--	--	--	--	10 B	--	--	--	--	--	--	5.9 B
Tetra-hydrofuran	NA	NA	--	--	--	--	--	--	--	--	--	--	--	5.7
Toluene	248,000	6,800	--	--	--	--	--	--	--	--	--	--	--	--
Xylenes	132,000	10,100	--	--	--	--	--	--	--	--	--	--	--	--
SVOCs (ug/kg)														
Bis(2-ethylhexyl)phthalate	347,000	2,170,000	--	--	--	--	--	--	--	--	400	--	680	--
Cyclohexanone	NA	NA	--	--	190	--	--	170	440	--	--	37 B	--	--
Trichloropropene(s)	NA	NA	--	--	260	--	--	--	270	--	--	--	--	--
Diesel (ug/kg)	880,000[2][4]	NA	17,000	NA	NA	10,000	NA	NA	8,300	11,000	NA	NA	NA	NA
TRPH (mg/kg)	800[2][3]	NA	--	--	--	--	--	--	--	--	--	--	320	--

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)
(2) NMED TPH Screening Guidelines
(3) TPH Screening Guideline for unknow TPH oil
(4) Presented in ug/kg for consistency with presented analytical data

NMED - New Mexico Environment Department
SSL - soil screening level
DAF - dilution attenuation factor
VOC - volatile organic compound
SVOC - semi-volatile organic compound
TRPH - total recoverable petroleum hydrocarbons
TPH - total petroleum hydrocarbons
mg/kg - milligrams per kilogram
ug/kg - micrograms per kilogram
-- - not detected
NA - not applicable/not analyzed
B - Indicates reported concentration was determined to be associated with laboratory contamination

Bolded text/shaded cells indicate constituent concentration above one or more screening criteria.

TABLE 3.2

TRPH, DIESEL, VOC AND SVOC CONCENTRATIONS FOUND IN LF-03 (SWMU 105) SOILS
1992 RFI
CANNON AFB

CONSTITUENTS	NMED Residential SSL[1]	NMED Soil to Groundwater SSL[1] (DAF 20)[1]	1992 RFI											
			CAN-105-3S-31	CAN-105-3S-31DUP	CAN-105-3S-36	CAN-105-3S-40	CAN-105-3S-43	CAN-105-3S-45	CAN-105-3S-51	CAN-105-3S-55	CAN-105-3S-60	CAN-105-3T-20	CAN-105-3T-25	CAN-105-3T-25DUP
VOCS (ug/kg)														
Acetone	70,400,000	2,060	--	--	--	--	--	--	--	--	--	--	--	--
Acetonitrile	NA	NA	--	--	21	480	16	20	--	--	6.4	--	--	--
Ethyl acetate	70,400,000	28,300	--	--	--	--	--	--	--	--	--	320	130	110
Methylene chloride	165,000	16.9	--	--	--	5.5 B	15 B	13 B	--	--	--	--	--	--
Tetra-hydrofuran	NA	NA	--	--	--	11	5.7	--	--	--	--	--	--	--
Toluene	248,000	6,800	--	--	--	--	--	--	--	--	--	--	--	--
Xylenes	132,000	10,100	--	--	--	--	--	--	--	--	--	--	--	--
SVOCs (ug/kg)														
Bis(2-ethylhexyl)phthalate	347,000	2,170,000	--	--	--	--	--	--	--	--	--	--	--	--
Cyclohexanone	NA	NA	210	320	280	--	270	220	340	310	340	--	--	--
Trichloropropene(s)	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--
Diesel (ug/kg)	880,000[2][4]	NA	NA	NA	NA	6,400	NA	5,500	NA	6,800	NA	4,100 B	4,100 B	4,700 B
TRPH (mg/kg)	800[2][3]	NA	--	--	--	--	--	--	--	--	--	--	--	--

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)
(2) NMED TPH Screening Guidelines
(3) TPH Screening Guideline for unknow TPH oil
(4) Presented in ug/kg for consistency with presented analytical data

NMED - New Mexico Environment Department
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DAF - dilution attenuation factor
VOC - volatile organic compound
SVOC - semi-volatile organic compound
TRPH - total recoverable petroleum hydrocarbons
TPH - total petroleum hydrocarbons
mg/kg - milligrams per kilogram
ug/kg - micrograms per kilogram
-- - not detected
NA - not applicable/not analyzed
B - Indicates reported concentration was determined to be associated with laboratory contamination

Bolded text/shaded cells indicate constituent concentration above one or more screening criteria.

TA[illegible]3.2

TRPH, DIESEL, VOC AND SVOC CONCENTRATIONS FOUND IN LF-03 (SWMU 105) SOILS
1992 RFI
CANNON AFB

CONSTITUENTS	NMED Residential SSL[1]	NMED Soil to Groundwater SSL[1] (DAF 20)	1992 RFI											
			CAN-105-3T-28.5	CAN-105-3T-31	CAN-105-3T-35	CAN-105-3T-40	CAN-105-3T-46	CAN-105-3T-48	CAN-105-3T-52	CAN-105-3T-56	CAN-105-3T-60	CAN-105-3U-20	CAN-105-3U-25	CAN-105-3U-30
VOCS (ug/kg)														
Acetone	70,400,000	2,060	--	--	230	--	--	--	--	--	--	--	--	--
Acetonitrile	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--
Ethyl acetate	70,400,000	28,300	260	--	--	--	--	--	75	--	--	8.8	13	6.8
Methylene chloride	165,000	16.9	--	--	--	--	--	--	--	--	--	5.9 B	--	--
Tetra-hydrofuran	NA	NA	--	--	--	--	--	--	--	--	--	14	15	7.9
Toluene	248,000	6,800	--	--	--	17	19	9.2	--	7.6	8.5	--	--	--
Xylenes	132,000	10,100	--	--	--	--	--	--	--	--	--	--	--	--
SVOCs (ug/kg)														
Bis(2-ethylhexyl)phthalate	347,000	2,170,000	--	--	--	--	--	--	--	--	--	--	--	--
Cyclohexanone	NA	NA	210	--	--	140	--	--	--	--	--	330	180	190
Trichloropropene(s)	NA	NA	--	210	--	320	420	350	270	--	--	--	--	--
Diesel (ug/kg)	880,000[2][3][4]	NA	NA	NA	NA	NA	6,600 B	NA	NA	NA	NA	5,900	NA	NA
TRPH (mg/kg)	800[2][3]	NA	--	--	--	--	--	--	--	--	--	--	--	--

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(3) TPH Screening Guideline for unknow TPH oil
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VOC - volatile organic compound
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TPH - total petroleum hydrocarbons
mg/kg - milligrams per kilogram
ug/kg - micrograms per kilogram
-- - not detected
NA - not applicable/not analyzed
B - Indicates reported concentration was determined to be associated with laboratory contamination

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TRPH, DIESEL, VOC AND SVOC CONCENTRATIONS FOUND IN LF-03 (SWMU 105) SOILS
1992 RFI
CANNON AFB

			1992 RFI											
CONSTITUENTS	NMED Residential SSLs[1]	NMED Soil to Groundwater SSLs (DAF 20)[1]	CAN-105-3U-30DUP	CAN-105-3U-32.5	CAN-105-3U-33.5	CAN-105-3U-35	CAN-105-3U-41	CAN-105-3U-43.5	CAN-105-3U-46	CAN-105-3U-51	CAN-105-3U-55	CAN-105-3U-55DUP	CAN-105-3U-61	CAN-105-3V-20.5
VOCS (ug/kg)														
Acetone	70,400,000	2,060	--	--	--	--	--	--	--	--	--	--	--	--
Acetonitrile	NA	NA	--	--	--	--	--	--	640	33	--	--	--	--
Ethyl acetate	70,400,000	28,300	16	20	20	--	--	--	--	--	--	--	--	19
Methylene chloride	165,000	16.9	--	--	--	--	--	6.5 B	8.6 B	5.5 B	--	--	--	--
Tetra-hydrofuran	NA	NA	8.6	9.8	6.5	--	--	13	11	5.5	--	--	--	28
Toluene	248,000	6,800	--	--	--	--	--	--	--	--	--	--	--	--
Xylenes	132,000	10,100	--	--	--	32	--	--	--	--	--	--	--	--
SVOCs (ug/kg)														
Bis(2-ethylhexyl)phthalate	347,000	2,170,000	--	510 B	--	--	--	--	--	--	--	--	--	--
Cyclohexanone	NA	NA	220	250	220	400	180	--	240	510	280	350	270	330
Trichloropropene(s)	NA	NA	900	760	--	--	540	580	--	--	--	--	--	--
Diesel (ug/kg)	880,000[2][4]	NA	NA	NA	NA	7,800	NA	8,900	NA	NA	NA	NA	NA	8,200 B
TRPH (mg/kg)	800[4][3]	NA	--	--	--	--	--	--	--	--	--	--	--	--

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)
(2) NMED TPH Screening Guidelines
(3) TPH Screening Guideline for unknow TPH oil
(4) Presented in ug/kg for consistency with presented analytical data

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DAF - dilution attenuation factor
VOC - volatile organic compound
SVOC - semi-volatile organic compound
TRPH - total recoverable petroleum hydrocarbons
TPH - total petroleum hydrocarbons
mg/kg - milligrams per kilogram
ug/kg - micrograms per kilogram
-- - not detected
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B - Indicates reported concentration was determined to be associated with laboratory contamination

Bolded text/shaded cells indicate constituent concentration above one or more screening criteria.

TA[illegible].2

TRPH, DIESEL, VOC AND SVOC CONCENTRATIONS FOUND IN LF-03 (SWMU 105) SOILS
1992 RFI
CANNON AFB

CONSTITUENTS	NMED Residential SSL[1]	NMED Soil to Groundwater SSLs (DAF 20)[1]	1992 RFI								
			CAN-105-3V-25	CAN-105-3V-45	CAN-105-3V-50	CAN-105-3V-52	CAN-105-3V-53	CAN-105-3V-[illegible]	CAN-105-3V[illegible]	CAN-105-3V[illegible]	CAN-105-3V[illegible]
VOCS (ug/kg)											
Acetone	70,400,000	2,060	--	--	--	--	--	--	--	--	--
Acetonitrile	NA	NA	--	--	--	--	--	--	--	--	--
Ethyl acetate	70,400,000	28,300	79	67	68	51	23	13	--	--	83
Methylene chloride	165,000	16.9	--	--	--	5.4 B	--	--	5.7 B	--	--
Tetra-hydrofuran	NA	NA	23	16	14	14	14	16	24	21	32
Toluene	248,000	6,800	--	--	--	--	--	--	--	--	--
Xylenes	132,000	10,100	--	--	--	--	--	--	--	--	--
SVOCs (ug/kg)											
Bis(2-ethylhexyl)phthalate	347,000	2,170,000	--	--	--	--	390 B	--	--		--
Cyclohexanone	NA	NA	220	210	1,000	320	240	210	--	210	490
Trichloropropene(s)	NA	NA	890	--	--	--	--	--	250	--	210
Diesel (ug/kg)	880,000[2][4]	NA	NA	NA	8,900 B	7,200 B	NA	--	NA	NA	NA
TRPH (mg/kg)	800[2][3]	NA	--	--	--	--	--	--	72	--	--

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)
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(4) Presented in ug/kg for consistency with presented analytical data

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DAF - dilution attenuation factor
VOC - volatile organic compound
SVOC - semi-volatile organic compound
TRPH - total recoverable petroleum hydrocarbons
TPH - total petroleum hydrocarbons
mg/kg - milligrams per kilogram
ug/kg - micrograms per kilogram
-- - not detected
NA - not applicable/not analyzed
B - Indicates reported concentration was determined to be associated with laboratory contamination

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7

TABLE 3.3

105

ORGANOCHLORINE PESTICIDES AND PCBs FOUND IN LF-03 (SWMU 97) SOILS
1992 RFI
CANNON AFB

Analytes	NMED Residential SSLs	NMED Soil to Groundwater SSLs (DAF 20)(1)	1992 RFI								
			CAN-105-3J-21	CAN-105-3J-30	CAN-105-3J-35	CAN-105-3J-52.5	CAN-105-3J-61	CAN-105-3K-20	CAN-105-3K-25	CAN-105-3K-30	CAN-105-3K-36
ORGANOCHLORINE PESTICIDES (ug/kg)											
Aldrin	284	294	0.72	0.51	0.75	1.6	0.6	--	--	--	1.2
BHC, beta	3,160	1.52	--	--	--	--	--	1.3	--	--	--
BHC, delta	NA	NA	4	3.8	--	--	3.8	--	--	--	--
BHC, gamma	4,370	7.09	--	--	--	--	--	2.8	--	5.3	--
4,4'-DDD	24,400	8,400	--	--	--	--	--	--	--	--	--
4,4'-DDE	17,200	26,800	--	--	--	--	--	--	--	--	--
4,4'-DDT	17,200	15,800	--	--	--	--	--	--	1.2		1
Dieldrin	304	2.71	--	--	--	--	--	--	--	--	--
Endrin	18,000	745	--	--	--	--	--	--	--	--	--
Endrin Aldehyde	NA	NA	--	--	--	--	--	--	--	--	--
Heptachlor Epoxide	NA	NA	3.1	--	--	--	--	--	--	--	--
Methoxychlor	NA	NA									
PCBs (ug/kg)											
Aroclor-1254	1,110	NA	--	--	--	--	--	--	--	--	--
Aroclor-1260	2,220	NA	--	--	--	--	--	--	--	--	--

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)

NMED - New Mexico Environment Department
RFI - Resource Conservation and Recovery Act facility investigation
PCB - polychlorinated biphenyl
SSL - soil screening level
DAF - dilution attenuation factor
ug/kg - micrograms per kilogram
-- - not detected
NA - not applicable

Bolded text/shaded cells indicate constituent concentration above one or more screening criteria.

TABLE 3.3

ORGANOCHLORINE PESTICIDES AND PCBs FOUND IN LF-03 (SWMU 97) SOILS
1992 RFI
CANNON AFB

Analytes	NMED Residential SSLs[1]	NMED Soil to Groundwater SSLs (DAF 20)[1]	1992 RFI								
			CAN-105-3K-40DUP	CAN-105-3K-45	CAN-105-3K-51	CAN-105-3K-59	CAN-105-3L-23.5	CAN-105-3L-25	CAN-105-3L-56	CAN-105-3L-61	CAN-105-3M-40
ORGANOCHLORINE PESTICIDES (ug/kg)											
Aldrin	284	294 2840	--	--	0.65	0.54	--	0.42	--	1.1	0.35
BHC, beta	3,160	1.52 15.2	--	--	--	--	--	--	--	--	--
BHC, delta	NA	NA	--	--	--	--	--	3.2	5.9	6.2	--
BHC, gamma	4,370	7.09 18.2	0.65	0.75	--	--	--	--	7.1	1.5	--
4,4'-DDD	24,400	8,400 8300	--	--	--	--	0.6	--	--	--	--
4,4'-DDE	17,200	26,800 262000	--	--	--	--	0.71	--	--	--	--
4,4'-DDT	17,200	15,800 154000	--	--	--	--	5.1	--	--	0.97	--
Dieldrin	304	2.71 26.8	--	--	--	--	--	--	--	--	--
Endrin	18,000	745 4080	--	--	--	--	--	--	--	--	--
Endrin Aldehyde	NA	NA	--	--	--	--	--	--	--	--	--
Heptachlor Epoxide	NA	NA	--	--	0.42	--	--	--	--	--	--
Methoxychlor	NA	NA									
PCBs (ug/kg)											
Aroclor-1254	1,110	NA	--	--	--	--	--	--	--	--	--
Aroclor-1260	2,220	NA	--	--	--	--	--	--	--	--	--

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(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004) ?

Rev. 3.0 available

NMED - New Mexico Environment Department
RFI - Resource Conservation and Recovery Act facility investigation
PCB - polychlorinated biphenyl
SSL - soil screening level
DAF - dilution attenuation factor
ug/kg - micrograms per kilogram
-- - not detected
NA - not applicable

Bolded text/shaded cells indicate constituent concentration above one or more screening criteria.

TABLE 3.3

ORGANOCHLORINE PESTICIDES AND PCBs FOUND IN LF-03 (SWMU 97) SOILS
1992 RFI
CANNON AFB

Analytes	NMED Residential SSL[1]	NMED Soil to Groundwater SSL[1] (DAF 20)[1]	1992 RFI								
			CAN-105-33MM-21	CAN-105-3N-27	CAN-105-3N-30	CAN-105-3NN-20	CAN-105-3NN-45	CAN-105-3NN-61	CAN-105-3D-30	CAN-105-3F-45	CAN-105-3F-51
ORGANOCHLORINE PESTICIDES (ug/kg)											
Aldrin	284	294	--	2.1	--	--	--	--	--	--	--
BHC, beta	3,160	1.52	--	--	--	0.64	--	--	--	--	--
BHC, delta	NA	NA	--	--	--	--	1.3	6.6	--	--	2
BHC, gamma	4,370	7.09	--	--	--	0.36	--	--	--	--	--
4,4'-DDD	24,400	8,400	--	1.1	--	--	--	--	--	--	--
4,4'-DDE	17,200	26,800	--	0.61	--	--	--	--	--	--	--
4,4'-DDT	17,200	15,800	--	1.7	--	--	--	0.83	3.1	0.88	--
Dieldrin	304	2.71	--	--	--	--	--	--	0.89	--	--
Endrin	18,000	745	--	--	--	--	--	--	--	--	--
Endrin Aldehyde	NA	NA	--	0.81	0.86	--	--	--	--	--	--
Heptachlor Epoxide	NA	NA	--	--	--	--	--	1.6	--	--	--
Methoxychlor	NA	NA									
PCBs (ug/kg)											
Aroclor-1254	1,110	NA	110	--	--	--	--	--	--	--	--
Aroclor-1260	2,220	NA	--	--	--	--	--	--	--	--	--

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)

NMED - New Mexico Environment Department
RFI - Resource Conservation and Recovery Act facility investigation
PCB - polychlorinated biphenyl
SSL - soil screening level
DAF - dilution attenuation factor
ug/kg - micrograms per kilogram
-- - not detected
NA - not applicable

Bolded text/shaded cells indicate constituent concentration above one or more screening criteria.

TABLE 3.3

ORGANOCHLORINE PESTICIDES AND PCBs FOUND IN LF-03 (SWMU 105) SOILS
1992 RFI
CANNON AFB

Analytes	NMED Residential SSLs[1]	NMED Soil to Groundwater SSLs (DAF 20)[1]	1992 RFI								
			CAN-105-3P-56DUP	CAN-105-3Q-26	CAN-105-3Q-36	CAN-105-3Q-41	CAN-105-3Q-46	CAN-105-3Q-53.5	CAN-105-3R-25	CAN-105-3R-31	CAN-105-3R-32.5
ORGANOCHLORINE PESTICIDES (ug/kg)											
Aldrin	284	294	--	--	--	--	--	--	0.75	--	--
BHC, beta	3,160	1.52	--	--	--	15	18	--	37	--	--
BHC, delta	NA	NA	--	--	--	--	--	--	0.72	0.6	0.71
BHC, gamma	4,370	7.09	--	--	--	--	--	--	--	--	--
4,4'-DDD	24,400	8,400	--	--	--	--	--	--	0.75	--	2.1
4,4'-DDE	17,200	26,800	--	--	--	--	--	--	--	--	--
4,4'-DDT	17,200	15,800	1.2	0.88	0.76	0.78	0.8	0.8	--	--	1.5
Dieldrin	304	2.71	--	--	--	--	--	--	--	--	--
Endrin	18,000	745	--	--	--	--	--	--	--	--	--
Endrin Aldehyde	NA	NA	--	--	--	--	--	--	--	--	--
Heptachlor Epoxide	NA	NA	--	--	--	--	--	--	--	--	--
Methoxychlor	NA	NA				--	--	--	2.2	--	--
PCBs (ug/kg)											
Aroclor-1254	1,110	NA	--	--	--	--	--	--	--	--	--
Aroclor-1260	2,220	NA	--	--	--	--	--	--	--	--	--

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)

NMED - New Mexico Environment Department
RFI - Resource Conservation and Recovery Act facility investigation
PCB - polychlorinated biphenyl
SSL - soil screening level
DAF - dilution attenuation factor
ug/kg - micrograms per kilogram
-- - not detected
NA - not applicable

Bolded text/shaded cells indicate constituent concentration above one or more screening criteria.

TABLE 3.3

ORGANOCHLORINE PESTICIDES AND PCBs FOUND IN LF-03 (SWMU 97) SOILS
1992 RFI
CANNON AFB

Analytes	NMED Residential SSLs[1]	NMED Soil to Groundwater SSLs (DAF 20)[1]	1992 RFI								
			CAN-105-3R-35	CAN-105-3R-41	CAN-105-3R-52.5DUP	CAN-105-3R-61	CAN-105-3S-21	CAN-105-3S-25	CAN-105-3S-36	CAN-105-3S-43	CAN-105-3S-51
ORGANOCHLORINE PESTICIDES (ug/kg)											
Aldrin	284	294	--	--	--	--	--	--	--	--	--
BHC, beta	3,160	1.52	--	--	--	--	--	--	--	--	--
BHC, delta	NA	NA	--	--	0.57	0.58	0.6	--	0.59	0.69	0.56
BHC, gamma	4,370	7.09	--	--	--	--	--	--	--	--	--
4,4'-DDD	24,400	8,400	--	--	--	--	--	--	--	--	--
4,4'-DDE	17,200	26,800	--	--	--	--	1.8	--	--	--	--
4,4'-DDT	17,200	15,800	1	1	1	0.93	--	1	0.94	1.3	0.9
Dieldrin	304	2.71	--	--	--	--	2.6	--	--	--	--
Endrin	18,000	745	--	--	--	--	--	--	--	--	--
Endrin Aldehyde	NA	NA	--	--	--	--	--	--	--	--	--
Heptachlor Epoxide	NA	NA	--	--	--	--	--	--	--	--	--
Methoxychlor	NA	NA	--	--	--	--	--	--	--	--	--
PCBs (ug/kg)											
Aroclor-1254	1,110	NA	--	--	--	--	--	--	--	--	--
Aroclor-1260	2,220	NA	--	--	--	--	160	--	--	--	--

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)

NMED - New Mexico Environment Department
RFI - Resource Conservation and Recovery Act facility investigation
PCB - polychlorinated biphenyl
SSL - soil screening level
DAF - dilution attenuation factor
ug/kg - micrograms per kilogram
-- - not detected
NA - not applicable

Bolded text/shaded cells indicate constituent concentration above one or more screening criteria.

TABLE 3.3

105

ORGANOCHLORINE PESTICIDES AND PCBs FOUND IN LF-03 (SWMU 97) SOILS
1992 RFI
CANNON AFB

Analytes	NMED Residential SSL[1]	NMED Soil to Groundwater SSLs (DAF 20)[1]	1992 RFI								
			CAN-105-3T-20	CAN-105-3T-29	CAN-105-3T-31	CAN-105-3T-35	CAN-105-3T-40	CAN-105-3T-46	CAN-105-3T-48	CAN-105-3T-52	CAN-105-3T-56
ORGANOCHLORINE PESTICIDES (ug/kg)											
Aldrin	284	294	--	0.9	--	--	--	1.2	--	--	--
BHC, beta	3,160	1.52	--	--	--	--	0.37	--	--	0.41	0.52
BHC, delta	NA	NA	6.4	5.5	--	--	--	--	--		5.5
BHC, gamma	4,370	7.09	--	--	0.81	0.69	1.3	1.5	3.8	2.7	4
4,4'-DDD	24,400	8,400	--	--	--	--	--	--	--	--	--
4,4'-DDE	17,200	26,800	--	--	--	--	--	--	--	--	--
4,4'-DDT	17,200	15,800	0.94	--	--	--	0.75	0.75	--	1.5	2
Dieldrin	304	2.71	--	--	--	--	--	--	--	--	--
Endrin	18,000	745	--	--	--	--	--	--	--	--	--
Endrin Aldehyde	NA	NA	--	--	--	--	--	--	--	--	--
Heptachlor Epoxide	NA	NA	2.6	--	--	--	--	--	--	--	--
Methoxychlor	NA	NA	--	--	--	--	--	--	--	--	--
PCBs (ug/kg)											
Aroclor-1254	1,110	NA	--	--	--	--	--	--	--	--	--
Aroclor-1260	2,220	NA	--	--	--	--	--	--	--	--	--

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)

NMED - New Mexico Environment Department
RFI - Resource Conservation and Recovery Act facility investigation
PCB - polychlorinated biphenyl
SSL - soil screening level
DAF - dilution attenuation factor
ug/kg - micrograms per kilogram
-- - not detected
NA - not applicable

Bolded text/shaded cells indicate constituent concentration above one or more screening criteria.

TABLE 3.3

ORGANOCHLORINE PESTICIDES AND PCBs FOUND IN LF-03 (SWMU 97) SOILS
1992 RFI
CANNON AFB

Analytes	NMED Residential SSLs[1]	NMED Soil to Groundwater SSLs (DAF 20)[1]	1992 RFI								
			CAN-105-3T-60	CAN-105-3T-60DUP	CAN-105-3U-20	CAN-105-3U-25	CAN-105-3U-30	CAN-105-3U-30DUP	CAN-105-3U-32.5	CAN-105-3U-35	CAN-105-3U-43.5
ORGANOCHLORINE PESTICIDES (ug/kg)											
Aldrin	284	294	--	1.2	--	--	--	--	--	--	--
BHC, beta	3,160	1.52	--	0.49	--	--	--	--	--	--	0.42
BHC, delta	NA	NA	--	6.2	0.61	0.74	0.62	0.7	0.59	2.2	--
BHC, gamma	4,370	7.09	3.4	2	--	--	--	--	--	--	--
4,4'-DDD	24,400	8,400	--	--	1.3	--	--	--	--	--	--
4,4'-DDE	17,200	26,800	--	--	--	--	--	--	--	--	--
4,4'-DDT	17,200	15,800	--	0.81	1.2	1.6	1.1	1.6	1	--	--
Dieldrin	304	2.71	--	--	--	--	--	--	--	--	--
Endrin	18,000	745	--	--	--	--	--	--	--	--	--
Endrin Aldehyde	NA	NA	--	--	--	--	--	--	--	--	--
Heptachlor Epoxide	NA	NA	--	--	--	--	--	--	--	--	--
Methoxychlor	NA	NA	--	--	--	--	--	--	--	--	--
PCBs (ug/kg)											
Aroclor-1254	1,110	NA	--	--	--	--	--	--	--	--	--
Aroclor-1260	2,220	NA	--	--	--	--	--	--	--	--	--

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)

NMED - New Mexico Environment Department
RFI - Resource Conservation and Recovery Act facility investigation
PCB - polychlorinated biphenyl
SSL - soil screening level
DAF - dilution attenuation factor
ug/kg - micrograms per kilogram
-- - not detected
NA - not applicable

Bolded text/shaded cells indicate constituent concentration above one or more screening criteria.

TABLE 3.3

ORGANOCHLORINE PESTICIDES AND PCBs FOUND IN LF-03 (SWMU 97) SOILS
1992 RFI
CANNON AFB

Analytes	NMED Residential SSLs[1]	NMED Soil to Groundwater SSLs (DAF 20)[1]	1992 RFI								
			CAN-105-3U-55	CAN-105-3V-25.5	CAN-105-3V-45	CAN-105-3V-50	CAN-105-3V-52	CAN-105-3V-55	CAN-105-3V-61	CAN-105-3VV-30	CAN-105-3VV-35
ORGANOCHLORINE PESTICIDES (ug/kg)											
Aldrin	284	294	--	--	--	--	--	--	--	0.41	--
BHC, beta	3,160 ✓	~~152~~ 15.2	0.41	--	--	--	--	--	--	**9.1**	--
BHC, delta	NA	NA	--	0.62	0.59	0.74	0.65	--	0.62	1	0.61
BHC, gamma	4,370	7.09	--	--	--	--	--	--	--	0.68	--
4,4'-DDD	24,400	8,400	--	--	--	--	--	--	1.6	--	1.5
4,4'-DDE	17,200	26,800	--	--	--	--	--	--	--	8.4	0.54
4,4'-DDT	17,200	15,800	--	1	1.2	1.4	1.1	1.6	1.2	7.6	1.4
Dieldrin	304	2.71	--	--	--	--	--	--	--	--	--
Endrin	18,000	745	--	--	--	--	--	--	--	6.1	--
Endrin Aldehyde	NA	NA	--	--	--	--	--	--	--	--	--
Heptachlor Epoxide	NA	NA	--	--	--	--	--	--	--	--	--
Methoxychlor	NA	NA	--	--	--	--	--	--	--	4.2	--
PCBs (ug/kg)											
Aroclor-1254	1,110	NA	--	--	--	--	--	--	--	--	--
Aroclor-1260	2,220	NA	--	--	--	--	--	--	--	--	--

problem

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)

NMED - New Mexico Environment Department
RFI - Resource Conservation and Recovery Act facility investigation
PCB - polychlorinated biphenyl
SSL - soil screening level
DAF - dilution attenuation factor
ug/kg - micrograms per kilogram
-- - not detected
NA - not applicable

Bolded text/shaded cells indicate constituent concentration above one or more screening criteria.

TABLE 3.3

105

ORGANOCHLORINE PESTICIDES AND PCBs FOUND IN LF-03 (SWMU 97) SOILS
1992 RFI
CANNON AFB

Analytes	NMED Residential SSL (1)	NMED Soil to Groundwater SSL (DAF 20) (1)	1992 RFI CAN-IC-SYY-01
ORGANOCHLORINE PESTICIDES (ug/kg)			
Aldrin	284	294	--
BHC, beta	3,160	1.52	-
BHC, delta	NA	NA	0.7
BHC, gamma	4,370	7.09	--
4,4'-DDD	24,400	8,400	--
4,4'-DDE	17,200	26,800	--
4,4'-DDT	17,200	15,800	--
Dieldrin	304	2.71	--
Endrin	18,000	745	--
Endrin Aldehyde	NA	NA	--
Heptachlor Epoxide	NA	NA	--
Methoxychlor	NA	NA	--
PCBs (ug/kg)			
Aroclor-1254	1,110	NA	--
Aroclor-1260	2,220	NA	--

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)

NMED - New Mexico Environment Department
RFI - Resource Conservation and Recovery Act facility investigation
PCB - polychlorinated biphenyl
SSL - soil screening level
DAF - dilution attenuation factor
ug/kg - micrograms per kilogram
-- - not detected
NA - not applicable

Bolded text/shaded cells indicate constituent concentration above one or more screening criteria.

T[illegible]3.4 105

METALS FOUND AT CONCENTRATIONS GREATER THAN THE BACKGROUND SOIL UPPER TOLERANCE LIMITS
IN LF-03 (SWMU 97) SOILS
1985 IRP PHASE II STAGE I AND 1992 RFI
CANNON AFB

	NMED Residential SSLs[1]	NMED Soil to Groundwater SSLs (DAF 20)[1]		1985 IRP Phase II Stage I						
			Background	3A-1 (4.5)	3A-2 (11.0)	3C-1 (4.0)	3C-2 (10.0)	3D-2 (11.0)	3E-1 (4.0)	3G-1 (4.5)
METALS (mg/kg)										
Aluminum	77,800	150,000	12,240	--	--	--	--	--	--	--
Barium	5,450	823	228	--	310	--	--	260	240	--
Beryllium	156	63.2	0.81	--	--	--	--	--	--	--
Calcium	NA	NA	241,000	--	--	--	--	--	--	--
Chromium	234	19.2	15	--	--	--	--	--	--	--
Cobalt	1,520	45.2	5.7	--	--	--	--	--	--	--
Copper	3,130	703	<4.4	--	--	--	--	--	--	--
Iron	23,500	65.4	10,000	--	--	--	--	--	--	--
Magnesium	NA	NA	14,500	--	--	--	--	--	--	--
Nickel	1,560	261	10	--	--	--	--	--	--	--
Potassium	NA	NA	2,790	--	--	--	--	--	--	--
Selenium	391	5.17	<2.2	--	--	--	--	--	--	--
Vanadium	548	807	24	--	--	--	--	--	--	--
Zinc	23,500	12,400	<15	19	--	17	23	--	--	110

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)

NMED - New Mexico Environment Department
SSL - soil screening level
DAF - dilution attenuation factor
mg/kg - milligrams per kilogram
-- - not detected
NA - not applicable

Bolded text/shaded cells indicate constituent concentration above one or more screening criteria.

TABLE 3.4

METALS FOUND AT CONCENTRATIONS GREATER THAN THE BACKGROUND SOIL UPPER TOLERANCE LIMITS
IN LF-03 (SWMU 97) SOILS
1985 IRP PHASE II STAGE I AND 1992 RFI
CANNON AFB

	NMED Residential SSL[1]	NMED Soil to Groundwater SSLs (DAF 20)[1]		1985 IRP Phase II Stage I		1992 RFI				
			Background	3G-2 (10.5)	3H-2 (11.0)	CAN-105-3J-21a	CAN-105-3J-30	CAN-105-3J-30DUP	CAN-105-3K-20	CAN-105-3K-25
METALS (mg/kg)										
Aluminum	77,800	150,000	12,240	--	--	--	--	--	--	--
Barium	5,450	823	228	--	540	250	--	250	490	390
Beryllium	156	63.2	0.81	--	--	--	--	--	--	--
Calcium	NA	NA	241,000	--	--	--	--	--	--	--
Chromium	234	19.2	15	--	--	--	--	--	--	--
Cobalt	1,520	45.2	5.7	--	--	--	--	--	--	--
Copper	3,130	703	<4.4	--	--	--	--	--	--	--
Iron	23,500	65.4	10,000	--	--	--	--	--	--	--
Magnesium	NA	NA	14,500	--	--	--	--	--	--	20,000
Nickel	1,560	261	10	--	--	--	--	--	--	--
Potassium	NA	NA	2,790	--	--	--	--	--	--	--
Selenium	391	5.17	<2.2	--	--	--	--	--	--	--
Vanadium	548	807	24	--	--	--	--	--	--	--
Zinc	23,500	12,400	<15	43	--	--	--	--	--	--

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)

NMED - New Mexico Environment Department
SSL - soil screening level
DAF - dilution attenuation factor
mg/kg - milligrams per kilogram
-- - not detected
NA - not applicable

Bolded text/shaded cells indicate constituent concentration above one or more screening criteria.

TABLE 3.4

METALS FOUND AT CONCENTRATIONS GREATER THAN THE BACKGROUND SOIL UPPER TOLERANCE LIMITS IN LF-03 (SWMU 97) SOILS 1985 IRP PHASE II STAGE I AND 1992 RFI CANNON AFB

				1992 RFI		1992 RFI				
	NMED Residential SSLs[1]	NMED Soil to Groundwater SSLs (DAF 20)[1]	Background	CAN-105-3K-30	CAN-105-3K-56	CAN-105-3L-23.5	CAN-105-3L-25	CAN-105-3L-30	CAN-105-3M-SFC	CAN-105-3M-23.5
METALS (mg/kg)										
Aluminum	77,800	150,000	12,240	--	--	--	--	--	--	22,000
Barium	~~5,450~~ 15,600	~~823~~ 6,131	228	270	580	270	250	**980**	--	340
Beryllium	156	63.2	0.81	--	--	--	--	--	--	1.1
Calcium	NA	NA	241,000	--	--	--	--	--	--	460,000
Chromium	234	19.2	15	--	--	--	--	--	--	--
Cobalt	1,520	45.2	5.7	--	--	--	--	--	--	8.3
Copper	3,130	703	<4.4	--	--	--	--	--	--	9.8
Iron	23,500	~~65.4~~ 5,540	10,000	--	--	--	--	--	--	**15,000**
Magnesium	NA	NA	14,500	--	--	--	--	--	--	18,000
Nickel	1,560	261	10	--	--	--	--	--	--	30
Potassium	NA	NA	2,790	--	--	--	--	3100	--	4,400
Selenium	391	5.17	<2.2	--	--	--	--	--	--	--
Vanadium	548	807	24	--	--	--	--	--	--	49
Zinc	23,500	12,400	<15	--	--	--	--	22	17	39

problems

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)

NMED - New Mexico Environment Department
SSL - soil screening level
DAF - dilution attenuation factor
mg/kg - milligrams per kilogram
-- - not detected
NA - not applicable

Bolded text/shaded cells indicate constituent concentration above one or more screening criteria.

TABLE 3.4

METALS FOUND AT CONCENTRATIONS GREATER THAN THE BACKGROUND SOIL UPPER TOLERANCE LIMITS IN LF-03 (SWMU 97) SOILS 1985 IRP PHASE II STAGE I AND 1992 RFI CANNON AFB

	NMED Residential SSLs[1]	NMED Soil to Groundwater SSLs (DAF 20)[1]	Background	1992 RFI						
				CAN-105-33MM-30.5	CAN-105-3M-40	CAN-105-3N-27	CAN-105-3N-30	CAN-105-3NN-20	CAN-105-3P-21	CAN-105-3P-26
METALS (mg/kg)										
Aluminum	77,800	150,000	12,240	--	--	--	25,000	--	--	--
Barium	5,450	~~823~~ 5,330	228	**1,500**	--	310	**910**	320	320	620
Beryllium	156	63.2	0.81	--	--	--	--	--	--	--
Calcium	NA	NA	241,000	--	--	--	300,000	--	--	--
Chromium	234	~~19.2~~ 42	15	--	--	--	**26**	--	--	16
Cobalt	1,520	45.2	5.7	--	--	--	--	--	--	--
Copper	3,130	703	<4.4	--	--	--	--	--	--	--
Iron	23,500	65.4	10,000	--	--	--	**16,000**	--	--	--
Magnesium	NA	NA	14,500	--	3,500	--	22,000	--	--	--
Nickel	1,560	261	10	--	--	--	21	--	--	--
Potassium	NA	NA	2,790	--	--	--	4,900	--	--	--
Selenium	391	5.17	<2.2	--	--	--	--	--	--	--
Vanadium	548	807	24	--	--	--	44	--	--	--
Zinc	23,500	12,400	<15	17	--	--	28	--	--	--

no problem

no problem

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)

NMED - New Mexico Environment Department
SSL - soil screening level
DAF - dilution attenuation factor
mg/kg - milligrams per kilogram
-- - not detected
NA - not applicable

Bolded text/shaded cells indicate constituent concentration above one or more screening criteria.

TABLE 3.4

METALS FOUND AT CONCENTRATIONS GREATER THAN THE BACKGROUND SOIL UPPER TOLERANCE LIMITS IN LF-03 (SWMU 97) SOILS 1985 IRP PHASE II STAGE I AND 1992 RFI CANNON AFB

	NMED Residential SSLs[1]	NMED Soil to Groundwater SSLs (DAF 20)[1]	Background	1992 RFI						
				CAN-105-3Q-SFC	CAN-105-3Q-21	CAN-105-3Q-26	CAN-105-3Q-30	CAN-105-3R-25	CAN-105-3R-36	CAN-105-3R-41
METALS (mg/kg)										
Aluminum	77,800	150,000	12,240	--	--	--	--	--	--	--
Barium	5,450	823	228	--	390	550	460	280	--	--
Beryllium	156	63.2	0.81	--	--	--	--	--	--	--
Calcium	NA	NA	241,000	--	--	--	--	--	--	--
Chromium	234	19.2	15	--	--	--	--	--	--	--
Cobalt	1,520	45.2	5.7	--	--	--	--	--	--	--
Copper	3,130	703	<4.4	6.4	--	8.7	8.1	10	4.4	--
Iron	23,500	65.4	10,000	--	--	--	--	--	--	--
Magnesium	NA	NA	14,500	--	--	21,000	19,000	--	--	15,000
Nickel	1,560	261	10	--	--	--	--	--	--	--
Potassium	NA	NA	2,790	--	--	--	--	--	--	--
Selenium	391	5.17	<2.2	--	--	--	--	--	--	--
Vanadium	548	807	24	--	--	--	--	--	--	--
Zinc	23,500	12,400	<15	21	17	--	--	--	--	--

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)

NMED - New Mexico Environment Department
SSL - soil screening level
DAF - dilution attenuation factor
mg/kg - milligrams per kilogram
-- - not detected
NA - not applicable

Bolded text/shaded cells indicate constituent concentration above one or more screening criteria.

TA[illegible]3.4

METALS FOUND AT CONCENTRATIONS GREATER THAN THE BACKGROUND SOIL UPPER TOLERANCE LIMITS
IN LF-03 (SWMU 97) SOILS
1985 IRP PHASE II STAGE I AND 1992 RFI
CANNON AFB

	NMED Residential SSLs (1)	NMED Soil to Groundwater SSLs (DAF 20) (1)	1992 RFI							
			Background	CAN-105-3R-51	CAN-105-3S-21	CAN-105-3S-25	CAN-105-3S-31	CAN-105-3S-31DUP	CAN-105-3S-36	CAN-105-3S-43
METALS (mg/kg)										
Aluminum	77,800	150,000	12,240	--	--	--	--	--	--	--
Barium	5,450	823	228	230	410	270	2,400	2,200	24	--
Beryllium	156	63.2	0.81	--	--	--	--	--	--	--
Calcium	NA	NA	241,000	--	--	--	--	--	--	--
Chromium	234	19.2	15	--	--	--	--	--	--	--
Cobalt	1,520	45.2	5.7	--	--	--	--	--	--	--
Copper	3,130	703	<4.4	--	--	--	--	--	--	--
Iron	23,500	65.4	10,000	--	--	--	--	--	--	--
Magnesium	NA	NA	14,500	--	18,000	--	--	--	--	15,000
Nickel	1,560	261	10	--	--	--	--	--	--	--
Potassium	NA	NA	2,790	--	--	--	--	--	--	--
Selenium	391	5.17	<2.2	--	3.3	2.2	--	--	--	--
Vanadium	548	807	24	--	--	--	--	--	--	--
Zinc	23,500	12,400	<15	--	--	--	--	--	--	--

no problem

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)

NMED - New Mexico Environment Department
SSL - soil screening level
DAF - dilution attenuation factor
mg/kg - milligrams per kilogram
-- - not detected
NA - not applicable

Bolded text/shaded cells indicate constituent concentration above one or more screening criteria.

TABLE 3.4

METALS FOUND AT CONCENTRATIONS GREATER THAN THE BACKGROUND SOIL UPPER TOLERANCE LIMITS IN LF-03 (SWMU 97) SOILS 1985 IRP PHASE II STAGE I AND 1992 RFI CANNON AFB

	NMED Residential SSLs[1]	NMED Soil to Groundwater SSLs (DAF 20)[1]	Background	1992 RFI						
				CAN-105-3S-45	CAN-105-3T-20	CAN-105-3U-20	CAN-105-3U-25	CAN-105-3U-30	CAN-105-3U-32.5	CAN-105-3U-33.5
METALS (mg/kg)										
Aluminum	77,800	150,000	12,240	--	--	13,000	14,000	--	--	--
Barium	5,450	823	228	--	510	--	--	--	--	--
Beryllium	156	63.2	0.81	--	--	--	--	--	--	--
Calcium	NA	NA	241,000	--	--	--	--	--	--	--
Chromium	234	19.2	15	18	--	--	17	--	--	--
Cobalt	1,520	45.2	5.7	--	--	--	--	--	--	--
Copper	3,130	703	<4.4	--	--	--	--	--	--	--
Iron	23,500	65.4	10,000	--	--	--	--	--	--	--
Magnesium	NA	NA	14,500	--	--	--	--	--	--	--
Nickel	1,560	261	10	--	--	--	--	--	--	--
Potassium	NA	NA	2,790	--	--	--	2,800	--	--	--
Selenium	391	5.17	<2.2	--	--	--	--	--	2.3	2.3
Vanadium	548	807	24	--	--	--	--	--	--	--
Zinc	23,500	12,400	<15	--	--	17	26	17	--	--

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)

NMED - New Mexico Environment Department
SSL - soil screening level
DAF - dilution attenuation factor
mg/kg - milligrams per kilogram
-- - not detected
NA - not applicable

Bolded text/shaded cells indicate constituent concentration above one or more screening criteria.

TABLE 3.4

METALS FOUND AT CONCENTRATIONS GREATER THAN THE BACKGROUND SOIL UPPER TOLERANCE LIMITS IN LF-03 (SWMU 97) SOILS 1985 IRP PHASE II STAGE I AND 1992 RFI CANNON AFB

	NMED Residential SSLs (1)	NMED Soil to Groundwater SSLs (DAF 20) (1)	Background	1992 RFI				
				CAN-105-3U-35	CAN-105-3V-20.5	CAN-105-3V-25.5	CAN-105-3VV-30	CAN-105-3VV-35
METALS (mg/kg)								
Aluminum	77,800	150,000	12,240	--	--	--	--	--
Barium	5,450	823	228	--	470	--	--	560
Beryllium	156	63.2	0.81	--	--	--	--	--
Calcium	NA	NA	241,000	--	--	--	--	--
Chromium	234	19.2	15	**20**	--	--	--	--
Cobalt	1,520	45.2	5.7	--	--	--	--	--
Copper	3,130	703	<4.4	--	--	--	--	--
Iron	23,500	65.4	10,000	--	--	--	--	--
Magnesium	NA	NA	14,500	--	--	--	--	--
Nickel	1,560	261	10	--	--	--	--	--
Potassium	NA	NA	2,790	--	--	--	--	--
Selenium	391	5.17	<2.2	--	2.6	2.6	2.6	2.5
Vanadium	548	807	24	--	--	--	--	--
Zinc	23,500	12,400	<15	--	--	--	46	--

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)

NMED - New Mexico Environment Department
SSL - soil screening level
DAF - dilution attenuation factor
mg/kg - milligrams per kilogram
-- - not detected
NA - not applicable

Bolded text/shaded cells indicate constituent concentration above one or more screening criteria.

TABLE 3.5

GROUNDWATER ANALYTICAL RESULTS
LF-03 (SWMU 105)
CANNON AFB

CONSTITUENTS	EPA MCLs	New Mexico State Standards	Phase II RFI (January 16, 1995)	1st Qrt 1996 (March 28, 1996)	2nd Qrt 1996 (June 25, 1996) original	2nd Qrt 1996 (June 25, 1996) duplicate
VOCs[2] (ug/L)						
Carbon Tetrachloride	5	10	1.6 J	--	--	--
Chloroform	NA	100	--	--	--	--
Isobutyl Alcohol	NA	NA	--	--	--	--
Methylene Chloride	NA	100	--	--	--	--
Toluene	1000	750	6.8	--	--	--
Trichloroethene	5	100	--	--	--	--
SVOCs[2] (ug/L)						
bis(2-ethylhexyl)phthalate AKA di(2-ETC)	6	NA	2 J	--	ND	ND
di-n-butylphthalate	NA	NA	--	--	34	ND
GRO (ug/L)	NA	NA	16	NA	NA	NA
PAHs	NA	NA	NA	--	NA	NA
Organochlorine[2] Pesticides (ug/L)	NA	NA	--	--	--	--
Organophosphorous Pesticides (ug/L)	NA	NA	--	NA	NA	NA
PCBs[2] (mg/L)	0.0005	0.001	--	--	--	--
Herbicides[2]	NA	NA	--	--	--	--
Dioxins						
2,3,7,8-TCDD ug/L	3.0×10^{-11}	NA	NA	--	ND	ND
Metals[2] (mg/L)						
Aluminum	NA	5	--	--	--	--
Antimony			--	--	--	--
Arsenic 0.010	~~0.05~~	0.1	0.0022 J	--	--	--
Barium	2	1	0.064	0.0609	0.0561	0.0576
Beryllium	0.004	NA	--	--	--	--
Cadmium	0.005	0.01	--	--	--	--
Calcium	NA	NA	--	--	--	--
Chromium	0.1	0.05	--	--	--	--
Cobalt			--	--	--	--
Copper SCL=1.0	1.3[3]	1	--	--	--	--
Iron	NA	1	--	--	--	--
Lead	0.015[3]	0.05	--	--	--	--
Magnesium	NA	NA	--	--	--	--
Manganese	NA	0.2	--	--	--	--
Mercury	0.002	0.002	--	--	--	--
Nickel	NA	0.2	--	--	--	--
Potassium	NA	NA	--	--	--	--
Selenium	0.05	0.05	0.0025 J	--	--	--
Sodium	NA	NA	--	--	--	--
Vanadium	NA	NA	0.018	0.012 J	0.12 J	0.0095 J
Zinc	NA	10	--	0.0058 J	0.0462	0.023 J
General Chemistry (mg/L)						
Chloride	NA	250	NA	NA	NA	NA
Nitrate	10	10	NA	NA	NA	NA
Sulfate	NA	600	NA	NA	NA	NA
Sulfide	NA	NA	NA	--	--	--
TOC	NA	NA	NA	1.8	7.6	6.3
TOX	NA	NA	NA	0.057	0.031	0.036
Other (mg/L)						
Cyanide	0.2	0.2	NA	--	--	--
Phenol	NA	0.005	NA	NA	NA	NA

(1) New Mexico State Standards as provided in 20.6.2.3103
(2) Appendix IX analysis conducted for the 1996 and 1997 sampling events
(3) Action Level

Bold/shaded text indicates constituent concentration above screening criteria

Acronyms
USEPA - U.S. Environemntal Protection Agency
MCLs - Maximum Contaminant Levels
NMSS - New Mexico State Standard
VOCs - volatile organic compounds
SVOCs - semi-volatile organic compounds
ug/L - micrograms per liter
mg/L - milligrams per liter

NA - not applicable/not analyzed
-- - not detected
Qrt - quarter
S-A - semi-annual

TABLE 3.5

GROUNDWATER ANALYTICAL RESULTS
LF-03 (SWMU 105)
CANNON AFB

CONSTITUENTS	EPA's MCLs	New Mexico State Standards[1]	3rd Qrt 1996 (October 2, 1996)	4th Qrt 1996 (December 18, 1996)	June 1997 S-A Event (June 9, 1997) original	June 1997 S-A Event (June 9, 1997) duplicate
VOCs[2] (ug/L)						
Carbon Tetrachloride	5	10	--	--	--	--
Chloroform	NA	100	--	--	--	--
Isobutyl Alcohol	NA	NA	--	--	--	--
Methylene Chloride	NA	100	--	--	--	--
Toluene	1000	750	--	--	--	--
Trichloroethene	5	100	--	--	--	--
SVOCs[2] (ug/L)						
bis(2-ethylhexyl)phthalate	6	NA	ND	ND	--	--
di-n-butylphthalate	NA	NA	ND	ND	--	--
GRO (ug/L)	NA	NA	NA	NA	NA	NA
PAHs	NA	NA	NA	NA	NA	NA
Organochlorine[2] Pesticides (ug/L)	NA	NA	--	--	--	--
Organophosphorous Pesticides (ug/L)	NA	NA	--	--	NA	NA
PCBs[2] (mg/L)	0.0005	0.001	--	--	--	--
Herbicides[2]	NA	NA	--	--	--	--
Dioxins						
2,3,7,8-TCDD	3.0×10^{-11}	NA	ND	ND	ND	ND
Metals[2] (mg/L)						
Aluminum	NA	5	--	--	--	--
Antimony			--	--	--	--
Arsenic 0.01	0.05	0.1	--	--	--	--
Barium	2	1	0.0551	0.048	0.064	0.062
Beryllium	0.004	NA	--	--	--	--
Cadmium	0.005	0.01	--	--	--	--
Calcium	NA	NA	--	--	--	--
Chromium	0.1	0.05	--	--	--	--
Cobalt			--	--	--	--
Copper	1.3[3]	1	--	--	--	--
Iron	NA	1	--	--	--	--
Lead	0.015[3]	0.05	--	--	--	--
Magnesium	NA	NA	--	--	--	--
Manganese	NA	0.2	--	--	--	--
Mercury	0.002	0.002	--	0.0006	--	--
Nickel	NA	0.2	--	--	--	--
Potassium	NA	NA	--	--	--	--
Selenium	0.05	0.05	--	--	--	--
Sodium	NA	NA	--	--	--	--
Vanadium	NA	NA	0.0092 J	0.0059 J	0.016	0.015
Zinc	NA	10	0.016 J	0.0079 J	--	--
General Chemistry (mg/L)						
Chloride	NA	250	NA	NA	NA	NA
Nitrate	10	10	NA	NA	NA	NA
Sulfate	NA	600	NA	NA	NA	NA
Sulfide	NA	NA	--	--	--	--
TOC	NA	NA	7.7	6.1	1.2	1.3
TOX	NA	NA	0.0216	--	--	--
Other (mg/L)						
Cyanide	0.2	0.2	--	--	--	--
Phenol	NA	0.005	NA	NA	NA	NA

(1) New Mexico State Standards as provided in 20.6.2.3103
(2) Appendix IX analysis conducted for the 1996 and 1997 sampling events
(3) Action Level

Bold/shaded text indicates constituent concentration above screening criteria

Acronyms
USEPA - U.S. Environemntal Protection Agency
MCLs - Maximum Contaminant Levels
NMSS - New Mexico State Standard
VOCs - volatile organic compounds
SVOCs - semi-volatile organic compounds
ug/L - micrograms per liter
mg/L - milligrams per liter

NA - not applicable/not analyzed
-- - not detected
Qrt - quarter
S-A - semi-annual

TABLE 3.5

GROUNDWATER ANALYTICAL RESULTS
LF-03 (SWMU 105)
CANNON AFB

CONSTITUENTS	EPA MCLs	New Mexico State Standards[1]	December 1997/S-A Event (December 9, 1997) original	duplicate	1998 Annual Event (December 8, 1998)	1999 Annual Event (December 14, 1999)
VOCs[2] (ug/L)						
Carbon Tetrachloride	5	10	0.51 J	--	0.28 J	0.14 J
Chloroform	NA	100	0.39 J	0.36 J	0.24 J	0.2 J
Isobutyl Alcohol	NA	NA	--	4.6 J	--	--
Methylene Chloride	NA	100	--	--	1.4	--
Toluene	1000	750	--	--	--	--
Trichloroethene	5	100	0.10 J	--	--	0.17 J
SVOCs[2] (ug/L)						
bis(2-ethylhexyl)phthalate	6	NA	--	--	--	--
di-n-butylphthalate	NA	NA	--	--	--	--
GRO (ug/L)	NA	NA	NA	NA	NA	NA
PAHs	NA	NA	--	--	--	NA
Organochlorine[2] Pesticides (ug/L)	NA	NA	--	--	--	--
Organophosphorous Pesticides (ug/L)	NA	NA	NA	NA	--	--
PCBs[2] (mg/L)	0.0005	0.001	--	--	--	--
Herbicides[2]	NA	NA	--	--	--[3]	--[3]
Dioxins						
2,3,7,8-TCDD	3.0×10^{-11}	NA	ND	ND	NA	NA
Metals[2] (mg/L)						
Aluminum	NA	5	--	--	--	0.0751 UB
Antimony			--	--	--	--
Arsenic 0.01	0.05	0.1	0.0028 J	--	--	--
Barium	2	1	0.054	0.053	0.0451	0.0403
Beryllium	0.004	NA	0.0013 J	--	--	--
Cadmium	0.005	0.01	--	--	--	--
Calcium	NA	NA	--	--	72.1	61.7
Chromium	0.1	0.05	--	--	--	--
Cobalt			--	--	--	--
Copper	1.3[3]	1	0.0046 J	0.0034 J	--	0.0136
Iron	NA	1	--	--	--	0.0313 J
Lead	0.015[3]	0.05	--	--	--	0.0014 J
Magnesium	NA	NA	--	--	66	56.9
Manganese	NA	0.2	--	--	--	--
Mercury	0.002	0.002	--	--	--	--
Nickel	NA	0.2	--	--	--	--
Potassium	NA	NA	--	--	8.51	7.18
Selenium	0.05	0.05	0.0030 J	--	0.0056	0.0058
Sodium	NA	NA	--	--	189	174 B
Vanadium	NA	NA	0.019	0.015	0.0194	0.0154
Zinc	NA	10	--	--	--	0.003 J
General Chemistry (mg/L)						
Chloride	NA	250	NA	NA	266	257
Nitrate	10	10	8.3	8.4	0.0084 UJ	9.2
Sulfate	NA	600	NA	NA	145	129 B
Sulfide	NA	NA	2.4	1.9	NA	NA
TOC	NA	NA	1.5	1.6	NA	NA
TOX	NA	NA	0.0167 J	0.0219 J	NA	NA
Other (mg/L)						
Cyanide	0.2	0.2	--	--	NA	NA
Phenol	NA	0.005	--	--	--	--

(1) New Mexico State Standards as provided in 20.6.2.3103
(2) Appendix IX analysis conducted for the 1996 and 1997 sampling events
(3) Action Level

Bold/shaded text indicates constituent concentration above screening criteria

Acronyms
USEPA - U.S. Environemntal Protection Agency
MCLs - Maximum Contaminant Levels
NMSS - New Mexico State Standard
VOCs - volatile organic compounds
SVOCs - semi-volatile organic compounds
ug/L - micrograms per liter
mg/L - milligrams per liter

NA - not applicable/not analyzed
-- - not detected
Qrt - quarter
S-A - semi-annual

TABLE 3.5

GROUNDWATER ANALYTICAL RESULTS
LF-03 (SWMU 105)
CANNON AFB

CONSTITUENTS	EPA MCLs	New Mexico State Standards(1)	2000 Annual Event (January 9, 2001)	2002 Annual Event (December 17, 2002) original	2002 Annual Event (December 17, 2002) duplicate	2003 Annual Event (March 31, 2004)
VOCs(2) (ug/L)						
Carbon Tetrachloride	5	10	--	--	--	--
Chloroform	NA	100	--	--	--	--
Isobutyl Alcohol	NA	NA	--	--	--	--
Methylene Chloride	NA	100	--	--	--	--
Toluene	1000	750	--	--	--	--
Trichloroethene	5	100	--	--	--	--
SVOCs(2) (ug/L)						
bis(2-ethylhexyl)phthalate	6	NA	--	--	--	--
di-n-butylphthalate	NA	NA	--	--	--	--
GRO (ug/L)	NA	NA	NA	NA	NA	NA
PAHs	NA	NA	NA	NA	NA	NA
Organochlorine(2) Pesticides (ug/L)	NA	NA	--	--	--	--
Organophosphorous Pesticides (ug/L)	NA	NA	--	--	--	--
PCBs(2) (mg/L)	0.0005	0.001	--	--	--	--
Herbicides(2)	NA	NA	--(3)	--(3)	--(3)	--
Dioxins						
2,3,7,8-TCDD	3.0×10^{-11}	NA	NA	NA	NA	NA
Metals(2) (mg/L)						
Aluminum	NA	5	--	0.096	0.082	--
Antimony			--	--	--	--
Arsenic 0.01	0.05	0.1	--	--	--	--
Barium	2	1	--	0.051	0.054	0.0589 J
Beryllium	0.004	NA	--	--	--	--
Cadmium	0.005	0.01	--	0.001	--	--
Calcium	NA	NA	69	84	84.9	98.8
Chromium	0.1	0.05	--	--	--	0.0005 J
Cobalt			--	--	--	--
Copper	1.3(3)	1	--	--	--	--
Iron	NA	1	--	0.3	0.296	--
Lead	0.015(3)	0.05	--	--	--	--
Magnesium	NA	NA	60	79.2	79.9	92.3
Manganese	NA	0.2	--	--	--	0.0049 J
Mercury	0.002	0.002	--	--	--	0.000023 J
Nickel	NA	0.2	--	--	--	0.0044 J
Potassium	NA	NA	11	15.1	15.3	15.1
Selenium	0.05	0.05	0.0063	0.006	--	--
Sodium	NA	NA	140	207	198	207
Vanadium	NA	NA	0.016	0.021	0.021	0.0137 J
Zinc	NA	10	--	--	--	0.0156 J
General Chemistry (mg/L)						
Chloride	NA	250	270	292	275	332
Nitrate	10	10	9.2	8.4	8.6	8.6
Sulfate	NA	600	140	135	128	182
Sulfide	NA	NA	NA	NA	NA	NA
TOC	NA	NA	NA	NA	NA	NA
TOX	NA	NA	NA	NA	NA	NA
Other (mg/L)						
Cyanide	0.2	0.2	NA	NA	NA	NA
Phenol	NA	0.005	--	--	--	0.028 J

(1) New Mexico State Standards as provided in 20.6.2.3103
(2) Appendix IX analysis conducted for the 1996 and 1997 sampling events
(3) Action Level

Bold/shaded text indicates constituent concentration above screening criteria

Acronyms
USEPA - U.S. Environemntal Protection Agency
MCLs - Maximum Contaminant Levels
NMSS - New Mexico State Standard
VOCs - volatile organic compounds
SVOCs - semi-volatile organic compounds
ug/L - micrograms per liter
mg/L - milligrams per liter

NA - not applicable/not analyzed
-- - not detected
Qrt - quarter
S-A - semi-annual

TABLE 3.5

GROUNDWATER ANALYTICAL RESULTS
LF-03 (SWMU 105)
CANNON AFB

CONSTITUENTS	EPA MCLs (1)	New Mexico State Standards (1)	2005 Annual Event (December 2005)
VOCs(2) (ug/L)			
Carbon Tetrachloride	5	10	--
Chloroform	NA	100	--
Isobutyl Alcohol	NA	NA	--
Methylene Chloride	NA	100	--
Toluene	1000	750	--
Trichloroethene	5	100	--
SVOCs(2) (ug/L)			
bis(2-ethylhexyl)phthalate	6	NA	--
di-n-butylphthalate	NA	NA	--
GRO (ug/L)	NA	NA	NA
PAHs	NA	NA	NA
Organochlorine(2) Pesticides (ug/L)	NA	NA	--
Organophosphorous Pesticides (ug/L)	NA	NA	--
PCBs(2) (mg/L)	0.0005	0.001	--
Herbicides(2)	NA	NA	--
Dioxins			
2,3,7,8-TCDD	3.0×10^{-11}	NA	NA
Metals(2) (mg/L)			
Aluminum	NA	5	0.0595 J
Antimony			0.0037 J
Arsenic 0.01	0.05	0.1	0.004 J
Barium	2	1	0.0525 J
Beryllium	0.004	NA	--
Cadmium	0.005	0.01	--
Calcium	NA	NA	81.2
Chromium	0.1	0.05	0.0013 J
Cobalt			0.0023 J
Copper	1.3(3)	1	--
Iron	NA	1	--
Lead	0.015(3)	0.05	--
Magnesium	NA	NA	77.5
Manganese	NA	0.2	--
Mercury	0.002	0.002	0.00021 J
Nickel	NA	0.2	0.0058 J
Potassium	NA	NA	15
Selenium	0.05	0.05	0.012
Sodium	NA	NA	151
Vanadium	NA	NA	0.0152 J
Zinc	NA	10	0.0034 J
General Chemistry (mg/L)			
Chloride	NA	250	221
Nitrate	10	10	--
Sulfate	NA	600	157
Sulfide	NA	NA	NA
TOC	NA	NA	NA
TOX	NA	NA	NA
Other (mg/L)			
Cyanide	0.2	0.2	NA
Phenol	NA	0.005	--

(1) New Mexico State Standards as provided in 20.6.2.3103
(2) Appendix IX analysis conducted for the 1996 and 1997 sampling events
(3) Action Level

Bold/shaded text indicates constituent concentration above screening criteria

Acronyms
USEPA - U.S. Environemntal Protection Agency
MCLs - Maximum Contaminant Levels
NMSS - New Mexico State Standard
VOCs - volatile organic compounds
SVOCs - semi-volatile organic compounds
ug/L - micrograms per liter
mg/L - milligrams per liter

NA - not applicable/not analyzed
-- - not detected
Qrt - quarter
S-A - semi-annual

TABLE 4.1

SUMMARY OF LANDFILL No.4 (LF-04/SWMU 104) DOCUMENTS
LANDFILL No.4 (LF-04/SWMU 104)
CANNON AFB, NEW MEXICO

Date	Report/Activity	Reference	Report Conclusion/Recommendation	Action Taken by Cannon AFB
1983-1984	Initial Assessment/Record Search	CH2M HILL, August 1984	NFA with implementation of Land use controls	Re-evaluated collected data
1984	Presurvey for Phase II IRP Investigation	Radian, 1984	IRP Phase II Groundwater Investigation	Initiated IRP Phase II, Stage I activities
1985-1986	IRP Phase II, Stage I Investigation	Radian, September 1986	Additional sampling around boring 3E	Initiated IRP Phase II/becomes RFI after 1989
1987	RCRA Facility Assessment (RFA)	A.T. Kearney, July 1987	RFI	Initiated RFI activities
1989	RCRA Hazardous Waste Part B Permit	NMED, November 1989	RFI	Initiated RFI activities - Workplan generation
1990	RFI Project Workplans (FSP, QAPP, HASP)	Lee Wan, June 1990	NFA	Developed Decision Document
1990	Final Decision Document	EA Engineering, November 1990b	NFA	Generated supplement Workplan
1992	RCRA Facilty Investigation Work Plan Supplements	Radian, July 1992	Require soil sampling to address identified data gab	Conducted field sampling activities in July 1992
1993	Draft RFA report (inaccurately identified as Remedial Investigation Report)	Radian, January 1993b	NFA	Generated Decision Document
1993	Draft Decision Document	Radian, March 1993b	NFA	Addressed USEPA NODs
1994	(Draft Final) RCRA Facility Investigation Final Report	Radian, March 1994b	NFA	Addressed USEPA NODs
1994	Final RCRA Facility Investigation Final Report	Radian, June 1994a	NFA/Request for Class III Permit Modification	Agreed to annual groundwater monitoring. Prepared RFI Phase II Project Plans addressing groundwater well installation and sampling
1995	RCRA Facility Investigation Activities, Phase II to Appendix I SWMUs - Supplemental RFI report	Woodward-Clyde, January 1995	Submitted groundwater data	Prepared for quarterly groundwater LTM activities
1996	Quarterly Groundwater LTM	Foothill, February 1996; June 1996; August 1996; November 1996; January 1996; and October 1997	Requested Semi-Annual Monitoring	Prepared for semi-annual groundwater LTM activities
1997	Semi-Annual Groundwater LTM	Foothill, March 1997; September 1997; and March 1998	Requested Annual Monitoring and minor changes to analytical sampling scheme	Prepared for annual groundwater LTM activities
1998	Annual Groundwater LTM	Foothill, August 1998 and September 1999	none	Prepared for annual groundwater LTM activities
1999	Annual Groundwater LTM	Foothill, May 1999 and June 2000	none	Prepared for annual groundwater LTM activities
2000	Annual Groundwater LTM	Parallax, August 2000 and June 2001	none	Prepare Statement of Basis/Prepared for annual groundwater LTM activities
2001	Statement of Basis	Cannon AFB	NFA	Prepared for annual groundwater LTM activities
2001	Annual Groundwater LTM	Bhate, June 2001	none	Prepared for annual groundwater LTM activities
2002	Annual Groundwater LTM	Bhate, August 2003	none	Prepared for annual groundwater LTM activities
2003	Semi-Annual Groundwater LTM	Bhate, April 2004	none	Prepared for semi-annual groundwater LTM activities
2005	Semi-Annual Groundwater LTM	HGL, February 2006	none	Prepared for semi-annual groundwater LTM activities

NFA - no further action
AFT - Air Force Base
IRP - Installation Restoration Program
RFI - RCRA Facility Investigation
RFA - RCRA Facility Assessment
RCRA - Resource Conservation and Recovery Act
FSP - field sampling plan
QAPP - Quality Assurance Project Plan
USEPA - United States Environmental Protection Agency
NOD - notice of deficiency
LTM - long term monitoring

TABLE 4.2

VOCS, HERBICIDES, DIESEL, AND TRPH CONCENTRATIONS DETECTED IN LF-04 (SWMU 104) SOIL SAMPLES
1992 RFI
CANNON AFB

CONSTITUENTS	[illegible] (1)	[illegible] (2)	1992 RFI							
			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
VOCS (ug/kg)										
Acetone	70,400,000	2,000	--	--	--	--	--	--	--	--
Methylene chloride	188,000	16.9	11	15	13	15	16	11	14	11
Toluene	248,000	6,800	--	--	--	--	--	--	--	--
Xylenes	132,000	10,100	--	--	--	--	--	--	--	--
Chlorinated Herbicides (ug/kg)										
2,4,5-TP	NA	NA	NA	NA	NA	--	NA	--	--	NA
Dichlorprop	NA	NA	NA	NA	NA	--	NA	--	--	NA
MCPP	NA	NA	NA	NA	NA	--	NA	--	--	NA
Diesel (ug/kg)	880,000	NA	NA	NA	NA	6,200	NA	5,000	4,800	NA
TRPH (mg/kg)	[illegible]	NA	--	--	--	--	--	--	--	--

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)
(2) NMED TPH Screening Guidelines
(3) TPH Screening Guideline for unknow TPH oil
(4) Presented in ug/kg for consistency with presented analytical data

NMED - New Mexico Environment Department
SSL - soil screening level
DAF - dilution attenuation factor
TRPH - total recoverable petroleum hydrocarbons
mg/kg - milligrams per kilogram
ug/kg - micrograms per kilogram
-- - not detected
NA - not applicable
B - Indicates reported concentration was determined to be associated with laboratory contamination

Bolded text/shaded cells indicate constituent concentration above one or more screening criteria.

TA[illegible]4.2

VOCS, HERBICIDES, DIESEL, AND TRPH CONCENTRATIONS DETECTED IN LF-04 (SWMU 104) SOIL SAMPLES
1992 RFI
CANNON AFB

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
VOCS (ug/kg)										
Acetone	70,400,000	2,080	--	--	--	--	--	--	--	--
Methylene chloride	165,000	16.9	16	11	12	12	11	6.8	5.3	5.7
Toluene	348,000	6,800	--	--	--	--	--	--	--	--
Xylenes	132,000	10,100	--	--	--	--	--	--	--	--
Chlorinated Herbicides (ug/kg)										
2,4,5-TP	NA	NA	NA	NA	NA	--	NA	--	NA	--
Dichlorprop	NA	NA	NA	NA	NA	--	NA	--	NA	--
MCPP	NA	NA	NA	NA	NA	--	NA	--	NA	--
Diesel (ug/kg)	880,000[2,4]	NA	NA	NA	NA	4,200	NA	4,400	NA	4,400
TRPH (mg/kg)	810[3,4]	NA	--	--	--	25	--	--	34	--

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)
(2) NMED TPH Screening Guidelines
(3) TPH Screening Guideline for unknow TPH oil
(4) Presented in ug/kg for consistency with presented analytical data

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Bolded text/shaded cells indicate constituent concentration above one or more screening criteria.

TABLE 4.2

VOCS, HERBICIDES, DIESEL, AND TRPH CONCENTRATIONS DETECTED IN LF-04 (SWMU 104) SOIL SAMPLES
1992 RFI
CANNON AFB

CONSTITUENTS	NMED Residential SSLs[1]	NMED Soil to Groundwater SSLs (DAF 20)[1]	1992 RFI							
			CAN-104-4I-05	CAN-104-4I-06	CAN-104-4I-13	CAN-104-4I-06	CAN-104-4I-09	CAN-104-4I-14	CAN-104-4I-10	CAN-104-4I-11
			40-41	45-46.8	47.5-48.8	50-51.8	52.5-54.5	52.5-54.5	55-57	60-62
VOCS (ug/kg)										
Acetone	70,400,000	2,060	--	--	--	--	--	--	--	--
Methylene chloride	165,000	16.9	7.6	6.9	9.2	--	--	5.5	5.4	9
Toluene	248,000	6,800	9.7	--	--	--	--	--	--	--
Xylenes	132,000	10,100	--	--	--	--	--	--	--	--
Chlorinated Herbicides (ug/kg)										
2,4,5-TP	NA	NA	NA	NA	NA	--	--	--	NA	NA
Dichloroprop	NA	NA	NA	NA	NA	--	--	--	NA	NA
MCPP	NA	NA	NA	NA	NA	--	--	--	NA	NA
Diesel (ug/kg)	880,000[2][4]	NA	NA	NA	NA	4,000	4,300	4,200	NA	NA
TRPH (mg/kg)	800[2][3]	NA	--	--	--	--	29	--	32	--

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)
(2) NMED TPH Screening Guidelines
(3) TPH Screening Guideline for unknow TPH oil
(4) Presented in ug/kg for consistency with presented analytical data

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Bolded text/shaded cells indicate constituent concentration above one or more screening criteria.

TABLE 4.2

VOCS, HERBICIDES, DIESEL, AND TRPH CONCENTRATIONS DETECTED IN LF-04 (SWMU 104) SOIL SAMPLES
1992 RFI
CANNON AFB

CONSTITUENTS	NMED Residential SSLs[1]	NMED Soil to Groundwater SSLs (DAF 20)[1]	1992 RFI							
			CAN-104-4JL-01 Surface	CAN-104-4J-01 15-17	CAN-104-4J-13 15-17	CAN-104-4J-05 30-32	CAN-104-4J-08 50-50.8	CAN-104-4J-09 55-57	CAN-104-4J-10 60-62	CAN-104-4JJ-01 Surface
VOCS (ug/kg)										
Acetone	70,400,000	2,060	--	--	--	--	--	--	--	--
Methylene chloride	165,000	16.9	8.7	--	6.9	--	--	--	--	--
Toluene	248,000	6,800	--	--	--	--	--	--	--	--
Xylenes	132,000	10,100	--	--	--	--	--	--	--	--
Chlorinated Herbicides (ug/kg)										
2,4,5-TP	NA	NA	12	--	--	--	NA	--	NA	--
Dichloroprop	NA	NA	--	--	--	--	NA	--	NA	--
MCPP	NA	NA	11,000	--	--	--	NA	--	NA	--
Diesel (ug/kg)	880,000[2][4]	NA	8,000	4,100	4,500	4,600	NA	3,300	NA	12,000
TRPH (mg/kg)	800[2][3]	NA	28	--	--	29	44	33	47	36

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)
(2) NMED TPH Screening Guidelines
(3) TPH Screening Guideline for unknow TPH oil
(4) Presented in ug/kg for consistency with presented analytical data

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ug/kg - micrograms per kilogram
-- - not detected
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Bolded text/shaded cells indicate constituent concentration above one or more screening criteria.

TABLE 4.2

VOCS, HERBICIDES, DIESEL, AND TRPH CONCENTRATIONS DETECTED IN LF-04 (SWMU 104) SOIL SAMPLES
1992 RFI
CANNON AFB

CONSTITUENTS	[illegible]	[illegible]	1992 RFI							
			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
			15-[illegible]	[illegible]	[illegible]	15-[illegible]	[illegible]	[illegible]	[illegible]	15-17
VOCS (ug/kg)										
Acetone	70,400,000	2,000	--	--	170	--	--	--	--	--
Methylene chloride	165,000	16.9	--	--	--	--	--	7.2	5.4	--
Toluene	248,000	6,800	--	--	--	--	--	--	--	--
Xylenes	132,000	10,100	--	--	--	--	--	--	--	--
Chlorinated Herbicides (ug/kg)										
2,4,5-TP	NA	NA	--	--	NA	NA	NA	NA	NA	NA
Dichloroprop	NA	NA	--	--	NA	NA	NA	NA	NA	NA
MCPP	NA	NA	--	--	NA	NA	NA	NA	NA	NA
Diesel (ug/kg)	680,000[illegible]	NA	5,300	4,300	NA	NA	NA	NA	NA	NA
TRPH (mg/kg)	800[illegible]	NA	--	--	--	41	28	55	--	49

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)
(2) NMED TPH Screening Guidelines
(3) TPH Screening Guideline for unknow TPH oil
(4) Presented in ug/kg for consistency with presented analytical data

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TRPH - total recoverable petroleum hydrocarbons
mg/kg - milligrams per kilogram
ug/kg - micrograms per kilogram
-- - not detected
NA - not applicable
B - Indicates reported concentration was determined to be associated with laboratory contamination

Bolded text/shaded cells indicate constituent concentration above one or more screening criteria.

TABLE 4.2

VOCS, HERBICIDES, DIESEL, AND TRPH CONCENTRATIONS DETECTED IN LF-04 (SWMU 104) SOIL SAMPLES
1992 RFI
CANNON AFB

CONSTITUENT	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
VOCS (ug/kg)										
Acetone	70,400,000	2,060	--	--	--	--	--	--	--	--
Methylene chloride	165,000	16.9	--	--	--	--	--	8	--	--
Toluene	248,000	6,800	--	--	--	--	--	--	--	--
Xylenes	132,000	10,100	--	--	--	--	--	--	--	--
Chlorinated Herbicides (ug/kg)										
2,4,5-TP	NA	NA	NA	NA	NA	--	--	NA	--	NA
Dichlorprop	NA	NA	NA	NA	NA	--	--	NA	--	NA
MCPP	NA	NA	NA	NA	NA	--	--	NA	--	NA
Diesel (mg/kg)	880,000[2,3]	NA	NA	NA	NA	11,000	9,300	NA	7,800	NA
TRPH (mg/kg)	800[2,3]	NA	29	30	34	--	58	--	41	68

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)
(2) NMED TPH Screening Guidelines
(3) TPH Screening Guideline for unknow TPH oil
(4) Presented in ug/kg for consistency with presented analytical data

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mg/kg - milligrams per kilogram
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-- - not detected
NA - not applicable
B - Indicates reported concentration was determined to be associated with laboratory contamination

Bolded text/shaded cells indicate constituent concentration above one or more screening criteria.

TA[illegible]4.2

VOCS, HERBICIDES, DIESEL, AND TRPH CONCENTRATIONS DETECTED IN LF-04 (SWMU 104) SOIL SAMPLES
1992 RFI
CANNON AFB

CONSTITUENTS	NMED [illegible] (1)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
VOCS (ug/kg)										
Acetone	70,400,000	2,060	--	--	--	--	--	--	--	--
Methylene chloride	165,000	16.9	7.9	7.4	--	--	--	[illegible]	--	11
Toluene	248,000	6,800	--	--	--	--	--	--	--	--
Xylenes	732,000	10,100	--	--	--	--	--	--	--	--
Chlorinated Herbicides (ug/kg)										
2,4,5-TP	NA	NA	NA	NA	NA	NA	NA	NA	--	NA
Dichlorprop	NA	NA	NA	NA	NA	NA	NA	NA	--	NA
MCPP	NA	NA	NA	NA	NA	NA	NA	NA	--	NA
Diesel (ug/kg)	880,000 (2)(4)	NA	NA	NA	NA	6,700	7400	NA	11,000	NA
TRPH (mg/kg)	600 (3)	NA	--	--	49	--	42	28	58	41

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)
(2) NMED TPH Screening Guidelines
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-- - not detected
NA - not applicable
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TABLE 4.2

VOCS, HERBICIDES, DIESEL, AND TRPH CONCENTRATIONS DETECTED IN LF-04 (SWMU 104) SOIL SAMPLES
1992 RFI
CANNON AFB

CONSTITUENTS	[illegible]	[illegible]	1992 RFI							
			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
VOCS (ug/kg)										
Acetone	70,400,000	2,060	--	--	--	--	--	--	--	--
Methylene chloride	165,000	18.9	--	7.6	--	--	7.3	--	--	--
Toluene	248,000	6,800	--	--	--	--	--	--	--	--
Xylenes	157,000	10,100	--	--	--	--	--	--	--	--
Chlorinated Herbicides (ug/kg)										
2,4,5-TP	NA	NA	--	NA	NA	--	NA	NA	NA	--
Dichloroprop	NA	NA	--	NA	NA	--	NA	NA	NA	--
MCPP	NA	NA	--	NA	NA	--	NA	NA	NA	--
Diesel (ug/kg)	880,000[2,4]	NA	8,000	NA	NA	7,300	NA	NA	NA	8,700
TRPH (mg/kg)	800[2,4]	NA	28	41	41	[illegible]	--	[illegible]	37	--

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)
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-- - not detected
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TABLE 4.2

VOCS, HERBICIDES, DIESEL, AND TRPH CONCENTRATIONS DETECTED IN LF-04 (SWMU 104) SOIL SAMPLES
1992 RFI
CANNON AFB

CONSTITUENTS	NMED Residential SSLs[1]	NMED Soil to Groundwater SSLs (DAF 20)[1]	1992 RFI							
			CAN-104-4M-13	CAN-104-4M-11	CAN-104-4N-01	CAN-104-4N-02	CAN-104-4N-03	CAN-104-4N-13	CAN-104-4N-04	CAN-104-4N-05
			50-51.5	60-62	15-17	17.5-19.5	20-21.5	20-21.5	25-26	30-31.5
VOCS (ug/kg)										
Acetone	70,400,000	2,060	--	--	--	130	--	--	--	--
Methylene chloride	165,000	16.9	--	--	--	--	--	12	11	8.2
Toluene	248,000	6,800	--	--	--	18	13	--	5.7	--
Xylenes	132,000	10,100	--	--	--	--	--	--	--	--
Chlorinated Herbicides (ug/kg)										
2,4,5-TP	NA	NA	--	NA	--	NA	--	--	NA	NA
Dichloroprop	NA	NA	--	NA	--	NA	--	--	NA	NA
MCPP	NA	NA	--	NA	--	NA	--	--	NA	NA
Diesel (ug/kg)	880,000[2][4]	NA	7,300	NA	9,400	NA	8,800	8,300	NA	NA
TRPH (mg/kg)	800[2][3]	NA	30	32	--	77	37	--	38	--

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)
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-- - not detected
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TABLE 4.2

VOCS, HERBICIDES, DIESEL, AND TRPH CONCENTRATIONS DETECTED IN LF-04 (SWMU 104) SOIL SAMPLES
1992 RFI
CANNON AFB

CONSTITUENTS	NMED Residential SSL	NMED Industrial Soil Screening Level (DAF 20)[1]	1992 RFI							
			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
VOCS (ug/kg)										
Acetone	70,400,000	2,080	--	--	--	--	--	--	--	--
Methylene chloride	165,000	16.9	10	5.7	7.5	--	--	--	--	--
Toluene	248,000	6,800	5.8	--	--	--	--	--	--	--
Xylenes	132,000	10,100	--	--	--	--	--	--	--	--
Chlorinated Herbicides (ug/kg)										
2,4,5-TP	NA	NA	NA	--	NA	--	--	NA	--	--
Dichloroprop	NA	NA	NA	--	NA	--	--	NA	--	--
MCPP	NA	NA	NA	--	NA	--	--	NA	--	--
Diesel (ug/kg)	880,000[2]	NA	NA	8,600	NA	7,900	8,100	NA	10,000	7,300
TRPH (mg/kg)	800[3]	NA	[illegible]	--	--	--	49	87	--	--

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)
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(3) TPH Screening Guideline for unknow TPH oil
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TABLE 4.2

VOCS, HERBICIDES, DIESEL, AND TRPH CONCENTRATIONS DETECTED IN LF-04 (SWMU 104) SOIL SAMPLES
1992 RFI
CANNON AFB

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
VOCS (ug/kg)										
Acetone	70,400,000	2,060	--	--	--	--	--	--	--	--
Methylene chloride	165,000	16.9	--	6.7	5.6	5.5	6.3	5.9	--	9.5
Toluene	248,000	6,800	--	7.4	14	--	--	--	--	--
Xylenes	132,000	10,100	--	--	--	--	--	--	--	--
Chlorinated Herbicides (ug/kg)										
2,4,5-TP	NA	NA	NA	--	--	NA	NA	NA	NA	NA
Dichloroamp	NA	NA	NA	--	188	NA	NA	NA	NA	NA
MCPP	NA	NA	NA	--	--	NA	NA	NA	NA	NA
Diesel (ug/kg)	880,000[illegible]	NA	NA	7,700	10,000	NA	NA	NA	NA	NA
TRPH (mg/kg)	800[illegible]	NA	38	38	38	--	--	--	31	39

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)
(2) NMED TPH Screening Guidelines
(3) TPH Screening Guideline for unknow TPH oil
(4) Presented in ug/kg for consistency with presented analytical data

NMED - New Mexico Environment Department
SSL - soil screening level
DAF - dilution attenuation factor
TRPH - total recoverable petroleum hydrocarbons
mg/kg - milligrams per kilogram
ug/kg - micrograms per kilogram
-- - not detected
NA - not applicable
B - Indicates reported concentration was determined to be associated with laboratory contamination

Bolded text/shaded cells indicate constituent concentration above one or more screening criteria.

TABLE 4.2

VOCS, HERBICIDES, DIESEL, AND TRPH CONCENTRATIONS DETECTED IN LF-04 (SWMU 104) SOIL SAMPLES
1992 RFI
CANNON AFB

CONSTITUENTS	[illegible]	[illegible]	1992 RFI							
			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
VOCS (ug/kg)										
Acetone	70,400,000	2,000	--	--	--	--	--	--	--	--
Methylene chloride	165,000	16.9	--	--	--	3.9	--	--	--	6.1
Toluene	248,000	5,500	--	--	--	--	--	--	--	--
Xylenes	122,000	10,100	--	--		--	--	--	--	--
Chlorinated Herbicides (ug/kg)										
2,4,5-TP	NA	NA	NA	NA	NA	NA	--	--	NA	NA
Dichloroprop	NA	NA	NA	NA	NA	NA	--	--	NA	NA
MCPP	NA	NA	NA	NA	NA	NA	--	--	NA	NA
Diesel (ug/kg)	880,000[illegible]	NA	NA	NA	NA	NA	8,800	9,400	NA	NA
TRPH (mg/kg)	800[illegible]	NA	30	27	45	--	--	--	60	--

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)
(2) NMED TPH Screening Guidelines
(3) TPH Screening Guideline for unknow TPH oil
(4) Presented in ug/kg for consistency with presented analytical data

NMED - New Mexico Environment Department
SSL - soil screening level
DAF - dilution attenuation factor
TRPH - total recoverable petroleum hydrocarbons
mg/kg - milligrams per kilogram
ug/kg - micrograms per kilogram
-- - not detected
NA - not applicable
B - Indicates reported concentration was determined to be associated with laboratory contamination

Bolded text/shaded cells indicate constituent concentration above one or more screening criteria.

TABLE 4.2

VOCS, HERBICIDES, DIESEL, AND TRPH CONCENTRATIONS DETECTED IN LF-04 (SWMU 104) SOIL SAMPLES
1992 RFI
CANNON AFB

CONSTITUENTS	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
VOCS (ug/kg)										
Acetone	70,400,000	2,060	--	--	--	--	--	--	--	--
Methylene chloride	163,000	18.9	--	--	--	--	--	5.3	--	--
Toluene	248,000	6,800	--	--	--	--	--	--	--	--
Xylenes	122,000	10,100	--	--	--	--	--	--	--	--
Chlorinated Herbicides (ug/kg)										
2,4,5-TP	NA	NA	--	--	--	--	--	--	NA	--
Dichloroprop	NA	NA	--	--	--	--	--	--	NA	--
MCPP	NA	NA	--	--	--	--	--	--	NA	--
Diesel (ug/kg)	880,000[4]	NA	8,900	5,200	9,900	9,300	16,000	19,000	NA	9,000
TRPH (mg/kg)	800[3]	NA	19	26	30	--	--	--	27	36

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)
(2) NMED TPH Screening Guidelines
(3) TPH Screening Guideline for unknow TPH oil
(4) Presented in ug/kg for consistency with presented analytical data

NMED - New Mexico Environment Department
SSL - soil screening level
DAF - dilution attenuation factor
TRPH - total recoverable petroleum hydrocarbons
mg/kg - milligrams per kilogram
ug/kg - micrograms per kilogram
-- - not detected
NA - not applicable
B - Indicates reported concentration was determined to be associated with laboratory contamination

Bolded text/shaded cells indicate constituent concentration above one or more screening criteria.

TABLE 4.2

VOCS, HERBICIDES, DIESEL, AND TRPH CONCENTRATIONS DETECTED IN LF-04 (SWMU 104) SOIL SAMPLES
1992 RFI
CANNON AFB

CONSTITUENTS	NMED Residential SSLs[1]	NMED Soil to Groundwater SSLs (DAF 20)[1]	1992 RFI		
			CAN-104-4RR-01	CAN-104-4RR-02	CAN-104-BG-01
			Surface	Surface	Surface
VOCS (ug/kg)					
Acetone	70,400,000	2,060	--	--	--
Methylene chloride	165,000	16.9	--	--	--
Toluene	248,000	6,800	--	--	7.2
Xylenes	132,000	10,100	--	--	7.7
Chlorinated Herbicides (ug/kg)					
2,4,5-TP	NA	NA	8.3	--	--
Dichloroprop	NA	NA	--	--	--
MCPP	NA	NA	--	--	8,000
Diesel (ug/kg)	880,000[2][4]	NA	8,300	14,000	4,800
TRPH (mg/kg)	800[2][3]	NA	--	--	--

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)
(2) NMED TPH Screening Guidelines
(3) TPH Screening Guideline for unknow TPH oil
(4) Presented in ug/kg for consistency with presented analytical data

NMED - New Mexico Environment Department
SSL - soil screening level
DAF - dilution attenuation factor
TRPH - total recoverable petroleum hydrocarbons
mg/kg - milligrams per kilogram
ug/kg - micrograms per kilogram
-- - not detected
NA - not applicable
B - Indicates reported concentration was determined to be associated with laboratory contamination

Bolded text/shaded cells indicate constituent concentration above one or more screening criteria.

TABLE 4.3

ORGANOCHLORINE PESTICIDES AND PCBS FOUND IN LF-04 (SWMU 104) SOIL SAMPLES
1992 RFI
CANNON AFB

	[illegible]	[illegible] SSL, DAF 20[1]	1992 RFI							
			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
			[illegible]	[illegible]	19-20.7	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ORGANOCHLORINE PESTICIDES (ug/kg)										
Aldrin	294	294	--	--	--	--	--	--	--	0.67
BHC, beta	3,150	[illegible]	--	--	--	--	--	--	--	--
BHC, delta	NA	NA	0.57	0.7	--	0.38	--	--	1.5	--
BHC, gamma	4,370	7.09	--	--	0.62	--	1	--	0.93	--
4,4'-DDD	24,400	8,400	--	--	--	--	--	--	--	--
4,4'-DDE	17,200	26,800	--	--	--	--	--	--	--	0.97
4,4'-DDT	17,200	15,800	--	--	--	--	--	--	--	--
Endosulfan II	NA	NA	--	--	--	--	--	--	--	--
Endrin	18,000	745	--	--	--	--	--	--	--	--
Heptachlor Epoxide	NA	NA	--	--	33	16	--	--	--	--
PCBs (ug/kg)										
Aroclor-1260	[illegible]	NA	--	--	7.3	--	--	--	--	--

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)

NMED - New Mexico Environment Department
SSL - soil screening level
DAF - dilution attenuation factor
PCB - polychlorinated biphenyl
ug/kg - micrograms per kilogram
-- - not detected
NA - not applicable

Bolded text/shaded cells indicate constituent concentration above one or more screening criteria.

TABLE 4.3

ORGANOCHLORINE PESTICIDES AND PCBS FOUND IN LF-04 (SWMU 104) SOIL SAMPLES
1992 RFI
CANNON AFB

	[illegible]	[illegible]	1992 RFI							
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	17-[illegible]	25-27	20-22	[illegible]	15-16.5	20-22	[illegible]	[illegible]
ORGANOCHLORINE PESTICIDES (ug/kg)										
Aldrin	284	291	--	--	--	--	--	--	--	--
BHC, beta	3,160	1,63	--	--	--	--	--	--	--	--
BHC, delta	NA	NA	0.71	--	--	--	--	--	--	--
BHC, gamma	4,370	7.09	--	0.38	0.38	--	0.57	--	--	--
4,4'-DDD	24,400	5,400	--	--	--	--	64	5.4	--	5.3
4,4'-DDE	87,300	26,800	--	--	--	0.68	23	1.4	--	1.8
4,4'-DDT	17,200	15,800	--	--	--	--	670	42	10	54
Endosulfan II	NA	NA	--	--	--	--	--	--	--	--
Endrin	18,000	795	--	--	--	--	13	--	--	--
Heptachlor Epoxide	NA	NA	--	--	--	--	--	--	--	--
PCBs (ug/kg)										
Aroclor-1260	2,200	NA	--	--	--	--	--	--	--	--

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)

NMED - New Mexico Environment Department
SSL - soil screening level
DAF - dilution attenuation factor
PCB - polychlorinated biphenyl
ug/kg - micrograms per kilogram
-- - not detected
NA - not applicable

Bolded text/shaded cells indicate constituent concentration above one or more screening criteria.

TABLE 4.3

ORGANOCHLORINE PESTICIDES AND PCBS FOUND IN LF-04 (SWMU 104) SOIL SAMPLES
1992 RFI
CANNON AFB

	[illegible]	[illegible]	[illegible]							
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ORGANOCHLORINE PESTICIDES (ug/kg)										
Aldrin	284	[illegible]	--	--	--	--	--	--	--	--
BHC, beta	3,160	[illegible]	--	[illegible]	--	--	--	--	--	--
BHC, delta	NA	NA	--	0.55	0.38	0.37	--	0.48	0.49	--
BHC, gamma	4,370	7.09	--	0.57	--	--	0.68	--	--	--
4,4'-DDD	24,400	8,400	--	--	--	--	--	--	--	--
4,4'-DDE	17,200	26,800	1.8	--	--	--	--	--	--	--
4,4'-DDT	17,200	15,800	--	--	--	--	--	--	--	--
Endosulfan II	NA	NA	--	--	--	--	--	--	--	--
Endrin	18,000	745	--	--	--	--	--	--	--	--
Heptachlor Epoxide	NA	NA	--	--	--	--	--	--	--	--
PCBs (ug/kg)										
Aroclor 1260	2,220	NA	--	--	--	--	--	--	--	--

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)

NMED - New Mexico Environment Department
SSL - soil screening level
DAF - dilution attenuation factor
PCB - polychlorinated biphenyl
ug/kg - micrograms per kilogram
-- - not detected
NA - not applicable

Bolded text/shaded cells indicate constituent concentration above one or more screening criteria.

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TABLE 4.3

ORGANOCHLORINE PESTICIDES AND PCBS FOUND IN LF-04 (SWMU 104) SOIL SAMPLES
1992 RFI
CANNON AFB

	[illegible]	[illegible]	1992 RFI	
	[illegible]	[illegible]	[illegible]	[illegible]
ORGANOCHLORINE PESTICIDES (ug/kg)				
Aldrin	284	294	--	0.58
BHC, beta	3,160	1.52	--	--
BHC, delta	NA	NA	0.4	--
BHC, gamma	4,370	7.09	--	--
4,4'-DDD	34,400	5,300	--	--
4,4'-DDE	17,200	16,800	--	1.9
4,4'-DDT	17,200	11,800	--	--
Endosulfan II	NA	NA	--	1.2
Endrin	18,000	745	--	--
Heptachlor Epoxide	NA	NA	--	--
PCBs (ug/kg)				
Aroclor-1260	2,220	NA	--	--

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)

NMED - New Mexico Environment Department
SSL - soil screening level
DAF - dilution attenuation factor
PCB - polychlorinated biphenyl
ug/kg - micrograms per kilogram
-- - not detected
NA - not applicable

Bolded text/shaded cells indicate constituent concentration above one or more screening criteria.

TABLE 4.4

METALS FOUND AT CONCENTRATIONS EXCEEDING BACKGROUND SOIL UPPER TOLERANCE LIMITS IN LF-04 (SWMU 104) SOILS
1985 IRP PHASE II STAGE I AND 1992 RFI
CANNON AFB

	NMED (1) Residential SSL	NMED Soil to Groundwater SSLs (DAF 20)	Background	1985 IRP Phase II Stage I						
				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
METALS (mg/kg)										
Aluminum	77,800	150,000	12,240	--	--	--	--	--	--	--
Arsenic	3.9	58.3	5.3	--	--	--	--	--	--	--
Barium	5,450	823	228	--	--	--	--	--	--	--
Cadmium	34.2	7.85	1.1	--	--	--	--	--	--	--
Chromium	234	19.2	15	--	--	--	--	--	--	--
Cobalt	1,520	45.2	5.7	--	--	--	--	--	--	--
Copper	3,130	703	<4.4	--	--	--	--	--	--	--
Iron	23,500 ✓	65	10,000	--	--	--	--	--	--	--
Mercury	6.3	NA	0.12	--	--	--	--	--	--	--
Potassium	NA	NA	2,790	--	--	--	--	--	--	--
Vanadium	548	407	24	--	--	--	--	--	--	--
Zinc	23,500	23,400	35	94	45	34	29	70	26	240

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)

NMED - New Mexico Environment Department
SSL - soil screening level
DAF - dilution attenuation factor
mg/kg - milligrams per kilogram
-- - not detected
NA - not applicable

Bolded text/shaded cells indicate constituent concentration above o ne or more screening criteria.

TABLE 4.4

METALS FOUND AT CONCENTRATIONS EXCEEDING BACKGROUND SOIL UPPER TOLERANCE LIMITS IN LF-04 (SWMU 104) SOILS
1985 IRP PHASE II STAGE I AND 1992 RFI
CANNON AFB

	NMED Residential SSLs	NMED Soil to Groundwater SSLs (DAF 20)[1]	Background	1985 IRP Phase II Stage I						
				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
METALS (mg/kg)										
Aluminum	77,800	150,000	12,240	--	--	--	--	--	--	--
Arsenic	3.9	58.3	5.3	--	--	--	--	--	--	--
Barium	5,450	825	228	340	320	--	--	--	290	--
Cadmium	74.1	7.92	1.1	--	--	--	--	--	--	--
Chromium	234	19.2	15	--	--	--	--	--	--	--
Cobalt	1,520	45.2	9.7	--	--	--	--	--	--	--
Copper	3,130	703	≤4.4	--	--	--	--	--	--	--
Iron	23,500	65.4	10,000	--	--	--	--	--	--	--
Mercury	6.11	NA	0.12	--	--	--	--	--	--	--
Potassium	NA	NA	2,790	--	--	--	--	--	--	--
Vanadium	548	807	34	--	--	--	--	--	--	--
Zinc	23,500	12,400	53	--	--	85	31	32	15	100

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)

NMED - New Mexico Environment Department
SSL - soil screening level
DAF - dilution attenuation factor
mg/kg - milligrams per kilogram
-- - not detected
NA - not applicable

Bolded text/shaded cells indicate constituent concentration above o
ne or more screening criteria.

TABLE 4.4

METALS FOUND AT CONCENTRATIONS EXCEEDING BACKGROUND SOIL UPPER TOLERANCE LIMITS IN LF-04 (SWMU 104) SOILS
1985 IRP PHASE II STAGE I AND 1992 RFI
CANNON AFB

	[illegible]	[illegible] SSL x DAF 20)[1]	[illegible]	1985 IRP Phase II Stage I		1992 RFI				
				[illegible]	[illegible]	CAN-104-[illegible]	CAN-104-[illegible]	CAN-104-[illegible]	CAN-104-[illegible]	CAN-104-[illegible]
				[illegible]	51.5-61	[illegible]	[illegible]	[illegible]	25-27	35-37
METALS (mg/kg)										
Aluminum	77,500	150,000	12,240	--	--	--	--	--	--	--
Arsenic	3.9	58.3	5.3	--	--	--	--	--	--	--
Barium	5,430	823	228	--	--	--	--	--	--	--
Cadmium	74.1	7.52	1.1	--	--	--	--	--	--	--
Chromium	234	19.2	15	--	--	--	--	--	--	--
Cobalt	1,320	45.2	5.7	--	--	3.8	3.4	3.8	3.2	2.5
Copper	3,130	703	<4.4	6.5	--	--	--	--	--	--
Iron	23,500	65.4	10,000	--	--	--	--	--	--	--
Mercury	6.11	NA	0.12	--	--	--	--	--	--	--
Potassium	NA	NA	2,290	--	--	--	--	--	--	--
Vanadium	548	807	24	--	--	--	--	--	--	--
Zinc	23,500	12,400	15	16	31	--	--	19	--	--

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)

NMED - New Mexico Environment Department
SSL - soil screening level
DAF - dilution attenuation factor
mg/kg - milligrams per kilogram
-- - not detected
NA - not applicable

Bolded text/shaded cells indicate constituent concentration above o ne or more screening criteria.

TA[illegible].4

METALS FOUND AT CONCENTRATIONS EXCEEDING BACKGROUND SOIL UPPER TOLERANCE LIMITS IN LF-04 (SWMU 104) SOILS
1985 IRP PHASE II STAGE I AND 1992 RFI
CANNON AFB

	[illegible]	[illegible]	Background	[illegible]						
				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
METALS (mg/kg)										
Aluminum	77,800	150,000	12,240	--	--	--	--	--	--	--
Arsenic	3.9	38.3	3.3	--	--	--	--	--	--	--
Barium	5,450	923	228	--	--	--	--	--	--	230
Cadmium	74.1	7.52	1.1	--	--	--	--	--	--	--
Chromium	234	19.2	15	--	--	--	--	--	--	--
Cobalt	1,520	45.2	5.7	--	2.6	2.1	3.2	4	2.4	--
Copper	3,130	703	<4.4	--	--	--	--	--	--	--
Iron	23,500	65.4	10,000	--	--	--	--	--	--	--
Mercury	0.11	NA	0.12	--	--	--	--	--	--	--
Potassium	NA	NA	2,790	--	--	--	--	--	--	--
Vanadium	548	807	24	--	--	--	--	--	--	--
Zinc	23,500	12,400	15	--	--	--	--	16	--	--

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)

NMED - New Mexico Environment Department
SSL - soil screening level
DAF - dilution attenuation factor
mg/kg - milligrams per kilogram
-- - not detected
NA - not applicable

Bolded text/shaded cells indicate constituent concentration above o ne or more screening criteria.

TABLE 4.4

METALS FOUND AT CONCENTRATIONS EXCEEDING BACKGROUND SOIL UPPER TOLERANCE LIMITS IN LF-04 (SWMU 104) SOILS
1985 IRP PHASE II STAGE I AND 1992 RFI
CANNON AFB

	NMED Residential SSL (1)	[illegible] SSL (DAF 20) (1)	Background	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
				[illegible]	1.0-1.7	2.0-2.2	2.5-2.7	[illegible]	[illegible]	3.5-3.7
METALS (mg/kg)										
Aluminum	77,600	150,000	12,240	15,000	--	--	--	--	--	--
Arsenic	3.9	58.3	3.3	5	--	--	--	--	--	--
Barium	5,450	823	228	--	--	560	310	420	--	--
Cadmium	74.1	7.52	1.1	--	--	--	--	--	--	--
Chromium	234	19.2	15	--	--	--	--	--	--	--
Cobalt	1,520	43.2	3.7	4.1	2.3	2.4	3	2.4	2.3	--
Copper	3,130	700	<4.4	6.6	--	--	--	3	--	--
Iron	23,500	65.4	10,000	11,000	--	--	--	--	--	--
Mercury	6.11	NA	0.12	--	--	--	--	--	--	--
Potassium	NA	NA	2,790	2,800	--	--	--	--	--	--
Vanadium	548	807	24	--	--	--	--	--	--	--
Zinc	23,500	12,400	15	29	--	--	--	--	--	--

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)

NMED - New Mexico Environment Department
SSL - soil screening level
DAF - dilution attenuation factor
mg/kg - milligrams per kilogram
-- - not detected
NA - not applicable

Bolded text/shaded cells indicate constituent concentration above o ne or more screening criteria.

TABLE 4.4

METALS FOUND AT CONCENTRATIONS EXCEEDING BACKGROUND SOIL UPPER TOLERANCE LIMITS IN LF-04 (SWMU 104) SOILS
1985 IRP PHASE II STAGE I AND 1992 RFI
CANNON AFB

	NMED Residential SSL[1]	NMED Soil Screening Level (DAF 20)[1]	Background	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
				[illegible]	[illegible]	Surface	15-17	15-17	[illegible]	15-17
METALS (mg/kg)										
Aluminum	77,800	150,000	12,240	--	--	13,000	--	--	--	--
Arsenic	3.9	38.3	5.3	--	--	6.2	--	--	--	--
Barium	5,450	823	228	350	980	250	--	--	360	--
Cadmium	74.1	7.52	1.1	--	--	--	--	--	--	--
Chromium	234	19.2	15	--	--	--	--	--	--	--
Cobalt	1,520	45.2	5.7	2.6	--	4.4	3.9	3.6	3	2.3
Copper	3,130	703	≤ 4.4	--	--	--	4.4	--	--	--
Iron	23,500	65.4	10,000	--	--	--	--	--	--	--
Mercury	6.11	NA	0.12	--	--	--	--	--	--	--
Potassium	NA	NA	2,790	--	--	--	--	--	--	--
Vanadium	548	807	24	--	--	--	--	--	--	--
Zinc	23,500	12,400	18	--	--	25	16	--	--	--

no problem

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)

NMED - New Mexico Environment Department
SSL - soil screening level
DAF - dilution attenuation factor
mg/kg - milligrams per kilogram
-- - not detected
NA - not applicable

Bolded text/shaded cells indicate constituent concentration above o ne or more screening criteria.

TABLE 4.4

METALS FOUND AT CONCENTRATIONS EXCEEDING BACKGROUND SOIL UPPER TOLERANCE LIMITS IN LF-04 (SWMU 104) SOILS
1985 IRP PHASE II STAGE I AND 1992 RFI
CANNON AFB

	NMED Residential SSL[1]	NMED SSL[1] Groundwater (DAF 20)[1]	Background	[illegible]						
				[illegible]-01	CAN-104-01-13	CAN-104-01-32	[illegible]	[illegible]	[illegible]	[illegible]
				15-17	15-17	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
METALS (mg/kg)										
Aluminum	77,800	150,000	12,240	--	--	--	--	--	--	--
Arsenic	3.9	58.3	3.3	--	--	--	--	--	--	--
Barium	5,430	823	228	350	--	--	--	--	--	--
Cadmium	74.1	7.52	1.1	--	--	--	--	--	--	--
Chromium	234	19.2	13	--	--	--	--	--	--	--
Cobalt	1,320	45.2	5.7	2.7	2.4	3.4	3.3	2.6	4	2.3
Copper	3,130	703	<4.4	--	--	--	--	--	--	--
Iron	23,500	65.4	10,000	--	--	--	--	--	--	--
Mercury	6.11	NA	0.12	--	--	--	--	--	--	--
Potassium	NA	NA	2,790	--	--	--	--	--	--	--
Vanadium	548	807	24	--	--	--	--	--	--	--
Zinc	23,500	12,400	15	--	--	--	--	--	--	--

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)

NMED - New Mexico Environment Department
SSL - soil screening level
DAF - dilution attenuation factor
mg/kg - milligrams per kilogram
-- - not detected
NA - not applicable

Bolded text/shaded cells indicate constituent concentration above o
ne or more screening criteria.

TABLE 4.4

METALS FOUND AT CONCENTRATIONS EXCEEDING BACKGROUND SOIL UPPER TOLERANCE LIMITS IN LF-04 (SWMU 104) SOILS
1985 IRP PHASE II STAGE I AND 1992 RFI
CANNON AFB

	[illegible]	[illegible]	[illegible]	1992 RFI						
				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
METALS (mg/kg)										
Aluminum	77,800	150,000	12,340	--	--	14,000	--	--	--	--
Arsenic	3.9	58.3	3.3	--	--	[illegible]	--	--	--	--
Barium	9,450	823	228	--	--	--	--	300	[illegible]	820
Cadmium	74.1	7.52	1.1	--	--	--	4.6	--	--	--
Chromium	234	19.3	15	--	--	--	--	--	--	--
Cobalt	1,520	45.2	4.7	2.7	2.6	3.9	2.3	--	--	--
Copper	3,130	703	<4.4	--	--	5.6	--	--	--	--
Iron	23,500	65.4	10,000	--	--	--	--	--	--	--
Mercury	6.31	NA	0.12	--	--	--	--	--	--	0.12
Potassium	NA	NA	2,790	--	--	2,900	--	--	--	--
Vanadium	548	407	24	--	--	--	--	--	--	--
Zinc	23,500	12,400	15	--	--	25	--	--	--	--

no problem

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)

NMED - New Mexico Environment Department
SSL - soil screening level
DAF - dilution attenuation factor
mg/kg - milligrams per kilogram
-- - not detected
NA - not applicable

Bolded text/shaded cells indicate constituent concentration above o
ne or more screening criteria.

TABLE 4.4

METALS FOUND AT CONCENTRATIONS EXCEEDING BACKGROUND SOIL UPPER TOLERANCE LIMITS IN LF-04 (SWMU 104) SOILS
1985 IRP PHASE II STAGE I AND 1992 RFI
CANNON AFB

	[illegible]	NMED [illegible]	Background	1992 RFI						
				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
METALS (mg/kg)										
Aluminum	77,800	150,000	12,340	--	--	--	--	--	16,000	15,000
Arsenic	3.9	58.3	6.3	--	--	--	--	--	--	--
Barium	5,430	823	228	400	380	390	--	--	570	--
Cadmium	74.1	7.52	1.1	--	--	--	--	--	--	--
Chromium	234	19.2	15	--	--	--	--	--	--	--
Cobalt	1,520	45.2	5.7	2.7	--	--	2.3	2.2	3.7	3.8
Copper	3,130	703	< 4.4	--	--	--	--	--	6.5	5.2
Iron	23,500	65.4	10,000	--	--	--	--	--	--	--
Mercury	6.11	NA	0.12	--	--	--	--	--	--	--
Potassium	NA	NA	2,790	--	--	--	--	--	2,900	3,200
Vanadium	548	807	24	--	--	--	--	--	--	--
Zinc	23,500	12,400	15	--	--	--	--	--	21	20

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)

NMED - New Mexico Environment Department
SSL - soil screening level
DAF - dilution attenuation factor
mg/kg - milligrams per kilogram
-- - not detected
NA - not applicable

Bolded text/shaded cells indicate constituent concentration above o ne or more screening criteria.

Table 4.4

METALS FOUND AT CONCENTRATIONS EXCEEDING BACKGROUND SOIL UPPER TOLERANCE LIMITS IN LF-04 (SWMU 104) SOILS
1985 IRP PHASE II STAGE I AND 1992 RFI
CANNON AFB

	[illegible]	[illegible]	[illegible]	[illegible]						
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]	2621.7	2621.7	[illegible]	2621.3	[illegible]	45-47	43-47
METALS (mg/kg)										
Aluminum	77,800	150,000	12,240	--	15,000	--	--	--	--	16,000
Arsenic	3.9	58.3	5.3	--	--	--	--	--	--	--
Barium	5,450	823	328	230	--	--	1,300	--	--	--
Cadmium	74.1	7.52	1.1	--	--	--	--	--	--	--
Chromium	234	19.2	15	--	--	--	--	16	--	--
Cobalt	1,320	43.2	5.7	3.1	3.7	2.2	2.2	2.4	2.4	4.1
Copper	3,130	703	6.4	4.7	4.9	--	--	--	--	4.6
Iron	23,500	65.4	10,000	--	--	--	--	--	--	--
Mercury	6.11	NA	0.12	--	--	--	--	--	--	--
Potassium	NA	NA	2,790	--	3,200	--	--	--	--	3,100
Vanadium	543	807	24	--	--	--	--	--	--	--
Zinc	23,500	12,400	15	17	19	--	--	--	--	21

no problem

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)

NMED - New Mexico Environment Department
SSL - soil screening level
DAF - dilution attenuation factor
mg/kg - milligrams per kilogram
-- - not detected
NA - not applicable

Bolded text/shaded cells indicate constituent concentration above o
ne or more screening criteria.

TABLE 4.4

METALS FOUND AT CONCENTRATIONS EXCEEDING BACKGROUND SOIL UPPER TOLERANCE LIMITS IN LF-04 (SWMU 104) SOILS
1985 IRP PHASE II STAGE I AND 1992 RFI
CANNON AFB

	NMED Residential SSL	NMED Tap Water Groundwater SSL w/DAF 20[1]	Background	1992 RFI						
				CAN-104-SB-13	CAN-104-SB-02	CAN-104-SB-06	CAN-104-SB-11	CAN-104-SB-10	CAN-104-SB-05	CAN-104-SB-08
				15-17	17.5-18.5	3-4.5	20-21	15-17	30-31	32.5-34.5
METALS (mg/kg)										
Aluminum	77,800	150,000	12,240	16,000	--	--	--	--	--	--
Arsenic	3.9	58.3	5.3	--	--	--	--	--	--	--
Barium	5,450	823	224	280	--	--	--	[illegible]	230	--
Cadmium	74.1	7.52	1.1	--	--	--	--	--	--	--
Chromium	234	19.2	13	--	--	--	--	--	--	--
Cobalt	1,520	45.2	5.7	3.9	2.7	2.3	2.5	2.7	2.3	3
Copper	3,130	703	< 4.4	8.7	--	--	--	--	--	--
Iron	23,500	65.4	10,000	--	--	--	--	--	--	--
Mercury	6.11	NA	0.12	--	--	--	--	--	--	--
Potassium	NA	NA	2,790	3,000	--	--	--	--	--	--
Vanadium	548	807	38	--	27	--	--	--	--	--
Zinc	23,500	12,400	15	21	--	46	48	18	--	--

no problem

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)

NMED - New Mexico Environment Department
SSL - soil screening level
DAF - dilution attenuation factor
mg/kg - milligrams per kilogram
-- - not detected
NA - not applicable

Bolded text/shaded cells indicate constituent concentration above o
ne or more screening criteria.

TABLE 4.4

METALS FOUND AT CONCENTRATIONS EXCEEDING BACKGROUND SOIL UPPER TOLERANCE LIMITS IN LF-04 (SWMU 104) SOILS
1985 IRP PHASE II STAGE I AND 1992 RFI
CANNON AFB

	NMED Residential SSL[2]	NMED Soil to Gw [illegible] (DAF 20)[2]	Background	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
				[illegible]	20-11	[illegible]	[illegible]	15-17	[illegible]	[illegible]
METALS (mg/kg)										
Aluminum	77,800	180,000	12,240	--	--	--	13,000	--	--	--
Arsenic	3.9	59.3	5.3	--	--	--	**[illegible]**	--	--	--
Barium	5,450	823	228	750	--	--	--	260	--	330
Cadmium	74.1	7.52	1.1	--	--	--	--	--	--	--
Chromium	234	19.2	15	--	--	--	--	--	--	--
Cobalt	1,320	45.2	5.7	3	2.6	2.3	4.3	2.7	2.3	--
Copper	3,130	703	<4.4	--	--	--	5.3	--	--	--
Iron	23,500	65.4	10,000	--	--	--	--	--	--	--
Mercury	6.11	NA	0.12	--	--	0.12 B	--	--	--	--
Potassium	NA	NA	2,790	--	--	--	--	--	--	--
Vanadium	548	807	24	--	--	--	--	--	--	--
Zinc	23,500	12,400	15	--	--	--	24	--	--	--

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)

NMED - New Mexico Environment Department
SSL - soil screening level
DAF - dilution attenuation factor
mg/kg - milligrams per kilogram
-- - not detected
NA - not applicable

Bolded text/shaded cells indicate constituent concentration above o
ne or more screening criteria.

TABLE 4.4

METALS FOUND AT CONCENTRATIONS EXCEEDING BACKGROUND SOIL UPPER TOLERANCE LIMITS IN LF-04 (SWMU 104) SOILS
1985 IRP PHASE II STAGE I AND 1992 RFI
CANNON AFB

	[illegible]	NMED Soil to Groundwater SSLs (DAF 20)[1]	Background	[illegible]		
				[illegible]	[illegible]	[illegible]
				Surface	Surface	Surface
METALS (mg/kg)						
Aluminum	77,800	150,000	12,240	13,000	15,000	--
Arsenic	3.9	58.3	5.3	--	--	--
Barium	5,450	823	228	--	--	--
Cadmium	74.1	7.82	1.1	--	--	--
Chromium	234	19.2	15	--	--	--
Cobalt	1,520	45.2	5.7	5.7	3.9	3.3
Copper	3,130	703	<4.4	5.3	5.5	5.2
Iron	23,500	65.4	10,000	--	10,000	--
Mercury	6.11	NA	0.12	--	--	--
Potassium	NA	NA	2,790	--	--	--
Vanadium	548	807	24	--	--	--
Zinc	23,500	12,400	15	24	23	23

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)

NMED - New Mexico Environment Department
SSL - soil screening level
DAF - dilution attenuation factor
mg/kg - milligrams per kilogram
-- - not detected
NA - not applicable

Bolded text/shaded cells indicate constituent concentration above o ne or more screening criteria.

TABLE 4.5

GROUNDWATER ANALYTICAL RESULTS
LF-04 (SWMU 104)
Cannon AFB

2004

VOCs[2] (ug/L)																					
Acetone	NA	NA	25	22	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Methylene Chloride	NA	100	2.1 J	1.7 J	--	--	--	--	--	--	--	--	--	0.001	--	--	--	--	--	--	--
Toluene	1,000	750	5.7	6.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SVOCs[2] (ug/L)																					
Acetophenone	NA	NA	2.7 J	2.9 J	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
bis(2-ethylhexyl)phthalate	6	NA	51	59	--	--	U/9	--	--	--	--	--	--	--	--	--	--	--	--	--	--
di-n-butylphthalate	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Gasoline Range Organics (ug/L)	NA	NA	17 J	14 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PAHs (mg/L)	NA	0.03	NA	NA	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Organochlorine Pesticides[2]	NA	NA	--	--	--	--	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Organophosphorous Pesticides	NA	NA	--	--	NA	NA	NA	--	--	--	--	NA	NA	--	--	--	--	--	--	--	--
PCBs[2] (mg/L)	0.0005	0.001	--	--	--	--	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Herbicides[2]	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dioxins (mg/L)																					
2,3,7,8-TCDD	3.0×10^{-8}	NA	NA	NA	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA
Metals[2] (mg/L)																					
Aluminum	NA	5	--	--	--	--	--	--	--	--	--	--	--	--	0.0739 UB	0.045 J	--	0.1	1.34	0.143 J	0.166 J
Antimony	0.006	NA	--	--															0.0031 J	0.0036 J	--
Arsenic	0.05	0.1	0.0033 J	0.0034 J	--	--	--	--	--	--	--	--	0.0043 J	--	0.0067 J	ND	--	0.005	0.0068 J	0.0055 J	0.0071 J
Barium	2	1	0.047	0.049	0.0596	0.0579	0.0652	0.062	0.0652	0.0562	0.0551	0.066	0.062	0.0582	0.0542	0.0537	--	0.054	0.0596 J	0.047 J	0.0484 J
Calcium	NA	NA	--	--	--	--	--	--	--	--	--	--	--	48.3	43	45.6	40	32.8	32.7	34.6	35.8
Chromium	0.1	0.05	--	--															0.0022 J	0.00065 J	0.00082 J
Cobalt	NA	0.05	--	--	--	--	--	--	--	--	--	--	0.0054 J	--	--	--	--	--	--	--	--
Copper	1.3[3]	1	0.0059 J	0.0056 J															0.00064 J	--	--
Iron	NA	1	--	--	--	--	--	--	--	--	--	--	--	--	0.0073 J	--	--	0.223	0.692	0.0579 J	0.0624 J
Lead	0.015[3]	0.05	--	--	--	--	0.0044	--	--	--	--	0.013	--	--	0.0011 J	--	--	--	0.007	0.0026 J	0.0034 J
Magnesium	NA	NA	--	--	--	--	--	--	--	--	--	--	--	47.9	43.7	45.3	38	31.9	29.5	30.8	31.8
Manganese	NA	0.2	--	--															0.0807	0.0026 J	0.0032 J
Mercury	0.002	0.002	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.00043 J	0.00017 J
Nickel	NA	0.2	--	--															0.0044 J	--	--
Potassium	NA	NA	--	--	--	--	--	--	--	--	--	--	--	8.02	7.2	7.53	7.9	8.35	6.54	7.35	7.71
Selenium	0.05	0.05	0.0068 J	0.0054 J	0.012	0.0136	0.0109	0.0093	0.0088	0.0097	0.0101	0.015	0.0063	0.012	0.012	0.0099 J	0.01	0.007	0.0102	0.0108	0.0116
Silver	NA	0.05	--	--	--	0.0025 J	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sodium	NA	NA	--	--	--	--	--	--	--	--	--	--	--	37.8	35.5	35.5	31	38.7	33	37.1	38.8
Thallium	0.002	NA	--	--															[illegible]	--	--
Tin	NA	NA	0.32	--	--	--	--	--	--	--	0.12	--	--	--	--	NA	--	--	--	NA	NA
Vanadium	NA	NA	0.019	0.021	0.018 J	0.016 J	0.016 J	0.014 J	0.012 J	0.014 J	0.012 J	0.021	0.022	0.0232	0.0214	0.022	0.022	0.027	0.0287 J	0.0212 J	0.022 J
Zinc	NA	10	0.013 J	0.015 J	0.0209	0.0255	0.021	0.0234	0.0464	0.0099	0.0067	--	--	--	0.0033 J	--	--	--	0.0383 J	0.0046 J	0.0023 J
General Chemistry (mg/L)																					
Chloride	NA	250	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	70.9	65.6	NA	54	29.7	29.2	43.6	38.5
Nitrate	10	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.6	2.3	2.5	NA	2.1	1.72	1.6	1.7	1.7
Sulfate	NA	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	148	93.7 B	NA	100	54.8	54.5	76	66.3
Sulfide	NA	NA	NA	NA	--	--	--	--	--	--	--	--	2.1	NA	NA	NA	NA	NA	NA	NA	NA
TOC	NA	NA	NA	NA	0.8 J	0.55	3.2	1.6	3.2	2.3	2.2	--	0.92 J	NA	NA	NA	NA	NA	NA	NA	NA
TOX	NA	NA	NA	NA	0.012	0.017	0.013	0.0074	0.0205	0.003 J	0.005	--	0.0138 J	NA	NA	NA	NA	NA	NA	NA	NA
Other																					
Cyanide	0.2	0.2	NA	NA	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA
Phenols	NA	0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--

(1) New Mexico State Standards as provided in 20.6.2.3103
(2) Appendix IX analysis conducted for the 1996 and 1997 sampling events
(3) Action Level

Bold/shaded text indicates constituent concentration above screening criteria

Acronyms
USEPA - United States Environmental Protection Agency
MCLs - Maximum Contaminant Levels
NMSS - New Mexico State Standard
VOCs - volatile organic compounds
SVOCs - semi-volatile organic compounds
ug/L - micrograms per liter
mg/L - milligrams per liter
NA - not applicable/not analyzed
-- - not detected
Qrt - quarter
S-A - semi-annual

Table 5.1

SUMMARY OF LANDFILL No.25 (LF-25/SWMU 97) DOCUMENTS
LANDFILL No.25 (LF-25/SWMU 97)
CANNON AFB, NEW MEXICO

Date	Report/Activity	Reference	Report Conclusion/Recommendation	Action Taken by Cannon AFB
1986	Site 17 (Old Entomology Area) IRP Phase IV Environmental Assessment	Walk Haydel, December 1988	Recommended NFA for Site 17; small quantity of pesticides detected in surface soil sample collected from Landfill No.25	
1987	RCRA Facility Assessment (RFA)	A.T. Kearney, July 1987	RFI	Initiated RFI activities
1989	RCRA Hazardous Waste Part B Permit	NMED, November 1989	RFI	Schedule RFI for 1992/1993
1991	Environmental Assessment	USACE, February 1991	Recommended additional investigation	Prepared for RFI
1992	RCRA Facility Investigation Field Sampling Plan	Radian, November 1992	Proposed soil sampling	Prepared RFI field sampling event
1993	Draft RFA report (inaccurately identified as Remedial Investigation	Radian, August 1993	NFA	Generated Decision Document
1994	(Draft Final) RCRA Facility Investigation Final Report	Radian, March 1994a	NFA	Addressed USEPA NODs
1994	Final RCRA Facility Investigation Final Report	Radian, June 1994b	NFA for soil	
1995	Quality Control Summary Report, Appendix III - Phase II	Woodward-Clyde, April 1995	Submitted groundwater data	Prepared for quarterly groundwater LTM activities
1997-1998	Quarterly Groundwater LTM	Foothill, March 1997; September 1997; January 1998; March 1998; and November 1998	Requested Semi-Annual Monitoring	Prepared for semi-annual groundwater LTM activities
1998	Semi-Annual Groundwater LTM	Foothill, August 1998 and September 1999	Requested Annual Monitoring and minor changes to analytical sampling scheme	Prepared for semi-annual groundwater LTM activities
1999	Semi-Annual Groundwater LTM	Foothill, May 1999; September 1999b	none	Prepared for semi-annual groundwater LTM activities
2000	Semi-Annual Groundwater LTM	Parallax, August 2000; November 2000; and	none	Prepared for semi-annual groundwater LTM activities
2000	Remedial Action Work Plan	Foster Wheeler, August 2000	Conduct Remedial Action (concrete/rebar removal; asbestos removal; site regarding; revegetation	Prepare for Remedial Actions
2001	Semi-Annual Groundwater LTM	Bhate, June 2001 and March 2002	none	Prepared for semi-annual groundwater LTM activities
2001	Final Construction Completion Report for the Remedial Action at SWMU 97	Foster Wheeler, November 2001	Remedial Action activities completed	Continued semi-annual groundwater LTM activities
2002	Semi-Annual Groundwater LTM	Bhate, May 2003	none	Prepared for semi-annual groundwater LTM activities
2003	Semi-Annual Groundwater LTM	Bhate, April 2004	none	Prepared for semi-annual groundwater LTM activities
2005	Semi-Annual Groundwater LTM	HGL, November 2005	none	Prepared for semi-annual groundwater LTM activities
2005	Semi-Annual Groundwater LTM	HGL, February 2006	none	Prepared for semi-annual groundwater LTM activities

NFA - No Further Action
AFT - Air Force Base
IRP - Installation Restoration Program
RFI - RCRA Facility Investigation
RFA - RCRA Facility Assessment
RCRA - Resource Conservation and Recovery Act
FSP - Field Sampling Plan
QAPP - Quality Assurance Project Plan
USEPA - United States Environmental Protection Agency
NOD - Notice of Deficiency
LTM - Long-Term Monitoring

TABLE 5.2

LF-25 (SWMU 97) SOIL ANALYTICAL DATA OBTAINED FROM SITE 17 (OLD ENTOMOLOGY AREA IRP PHASE IV ENVIRONMENTAL ASSESSMENT CANNON AFB)

	NMED Residential SSL[1]	NMED Soil to Groundwater SSL (DAF 20)[1]	02	[illegible]
			0.3	0.5
Organochlorine Pesticides (ug/kg)				
4,4'-DDD	24,400	8,400	--	--
4,4'-DDE	17,200	26,800	--	500
4,4'-DDT	17,200	15,800	--	200
Chlordane	16,200	7,210	--	100

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)

NMED - New Mexico Environment Department
SSL - soil screening level
DAF - dilution attenuation factor
ug/kg - micrograms per kilogram
-- - not detected

Bolded text/shaded cells indicate constituent concentration above one or more screening criteria.

Benzidine DAF 20
2.47-4 mg/kg
0.000247
0.247 ug/kg

1990 RFI

TABLE 5.3

SOIL ANALYTICAL SUMMARY RESULTS
LF-25 (SWMU 96) ENVIRONMENT ASSESSMENT
CANNON AFB

	NMED Residential SSLs[1]	NMED Soil to Groundwater SSLs (DAF 20)[1]	Background		Trench 1		Trench 2		Trench 3		Trench 4	
			0-1	4-5	0-1	4-5	0-1	4-5	0-1	4-5	0-1	4-5
VOCs (ug/kg)	NA	NA	--	--	NA	NA	--	--	--	--	NA	NA
SVOCs (ug/kg)												
Bis(2-ethyhexyl)phthalate	347,000	2,170,000	--	--	NA	NA	3,400	--	--	--	NA	NA
Benzidine	21.1	NA 0.247	--	--	NA	NA	--	--	--	2,000	NA	NA
PESTICIDES/PCBS (ug/kg)	NA	NA	--	--	NA	NA	--	--	--	--	NA	NA
METALS (mg/kg)												
Arsenic	3.9	58.3	2.8	2.3	NA	NA	2.4	1.7	1.7	3	NA	NA
Barium	5,450	823	94.7	106	NA	NA	63.9	121	82.1	705	NA	NA
Cadmium	~~74.1~~ 39 mg/kg	~~7.52~~ 29.5 mg/kg	4.6	2.8	NA	NA	1.8	2.9	8.5	33.3	NA	NA
Chromium	234	19.2	11.6	7.8	NA	NA	5.9	9.6	10.3	9.4	NA	NA
Cobalt	1,520	45.2	5.9	3.2	NA	NA	3.1	3.3	3.8	5.2	NA	NA
Copper	3,130	703	6.5	4.1	NA	NA	5	4.5	20.2	2.3	NA	NA
Manganese	~~1,550~~ 3,590 mg/kg	~~1.05~~ 2,240 mg/kg	176	48.8	NA	NA	85	57	138	68.2	NA	NA
Mercury	6.11	NA	0.07	0.03	NA	NA	0.03	0.01	0.02	0.02	NA	NA
Molybdenum	391	403	83.2	46.9	NA	NA	28	47.8	--	--	NA	NA
Nickel	1,560	261	11.7	8.3	NA	NA	7.9	7.1	7.8	9.2	NA	NA
Selenium	391	5.17	1.9	1.9	NA	NA	--	1.6	0.6	1.5	NA	NA
Vanadium	548	807	22.3	15.4	NA	NA	12.8	17.7	17.8	27	NA	NA
Zinc	23,500	12,400	30.7	18.1	NA	NA	14.6	19.6	31.6	23.1	NA	NA

NM Ind Soil SSL is 83.3

This is a problem

not so bad

not a problem

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)

NMED - New Mexico Environment Department
VOC - volatile organic compound
SVOC - semi-volatile organic compound
PCB - polychlorinated biphenyl
SSL - soil screening level
DAF - dilution attenuation factor
ug/kg - micrograms per kilogram
mg/kg - milligrams per kilogram
-- - not detected
NA - not applicable/not analyzed

Bolded text/shaded cells indicate constituent concentration above one or more screening criteria.

TABLE 5.3

SOIL ANALYTICAL SUMMARY RESULTS
LF-25 (SWMU 96) ENVIRONMENT ASSESSMENT
CANNON AFB

1990 RFI

	SWMU Residential SSLs[1]	NMED Soil to Groundwater SSLs (DAF 20)[1]	Trench 1		Trench 2			Trench 6		Trench 7		Trench 8	
			0-1	4-5	0-1	0-1 Duplicate	4-5	0-1	4-5	0-1	4-5	0-1	4-5
VOCs (ug/kg)	NA	NA	--	--	--	--	--	NA	NA	--	--	NA	NA
SVOCs (ug/kg)													
Bis(2-ethylhexyl)phthalate	347,000	2,170,000	--	--	--	--	--	NA	NA	--	--	NA	NA
Benzidine	21.1	NA	--	--	--	--	--	NA	NA	--	--	NA	NA
PESTICIDES/PCBS (ug/kg)	NA	NA	--	--	--	--	--	NA	NA	--	--	NA	NA
METALS (mg/kg)													
Arsenic	3.9	53.3	2.8	2.3	2.9	2.4	2.9	NA	NA	2.2	2.7	NA	NA
Barium	5,450	823	94.7	106	108	85.9	537	NA	NA	408	199	NA	NA
Cadmium	74.1	1.52	4.6	2.8	4.7	1.8	3.2	NA	NA	3	[illegible]	NA	NA
Chromium	234	19.2	11.6	7.8	15.4	9.1	8	NA	NA	9.3	12.3	NA	NA
Cobalt	1,520	45.2	5.9	3.1	6.7	3.8	5.3	NA	NA	4.3	5.4	NA	NA
Copper	5,150	703	6.5	4.1	8.3	6.6	4.5	NA	NA	8.8	6.1	NA	NA
Manganese	1,550	1,03[illegible]	[illegible]	[illegible]	198	[illegible]	[illegible]	NA	NA	[illegible]	[illegible]	NA	NA
Mercury	6.17	NA	0.07	0.03	0.06	0.03	--	NA	NA	0.07	0.02	NA	NA
Molybdenum	391	403	83.2	46.9	106	32.7	78.7	NA	NA	47	69	NA	NA
Nickel	1,560	261	11.7	8.3	13.1	11.8	9.6	NA	NA	9.7	11.1	NA	NA
Selenium	391	5.17	1.9	1.9	--	0.3	1.8	NA	NA	1	2.7	NA	NA
Vanadium	548	807	22.3	15.4	27.9	19.2	21.7	NA	NA	16.4	20.8	NA	NA
Zinc	23,500	12,400	30.7	18.1	38.9	23.5	18.9	NA	NA	24.6	30.1	NA	NA

not good

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004) 4.0 (June 2006)

NMED - New Mexico Environment Department
VOC - volatile organic compound
SVOC - semi-volatile organic compound
PCB - polychlorinated biphenyl
SSL - soil screening level
DAF - dilution attenuation factor
ug/kg - micrograms per kilogram
mg/kg - milligrams per kilogram
-- - not detected
NA - not applicable/not analyzed

Bolded text/shaded cells indicate constituent concentration above one or more screening criteria.

CFR 40 R 261.24 TCLP

TABLE 5.4

RUBBLE SAMPLE ANALYTICAL SUMMARY DATA
LF-25 (SWMU 97) ENVIRONMENTAL ASSESSMENT
CANNON AFB

CONSTITUENT	Federal MCLs	New Mexico State Standards	Trench 1	Trench 2	Trench 3	Trench 4	Trench 5
ASBESTOS (%)	NA	NA	<0.25	--	--	NA	--
TCLP Volatile Organics (mg/L)	NA	NA	NA	--	--	NA	--
TCLP EXTRACTABLE ORGANICS (mg/L)	NA	NA	NA	--	--	NA	--
PCBS (mg/L)	NA	NA	NA	--	--	NA	--
TCLP PESTICIDES (mg/L)	NA	NA	NA	--	--	NA	--
TCLP HERBICIDES (mg/L)	NA	NA	NA	--	--	NA	--
TCLP METALS (mg/L)							
Barium 100	2	1	NA	0.8	~~0.8~~ 1.3	NA	0.8
Cadmium 1.0	0.005	0.01	NA	-	0.01	NA	--
Mercury 0.2	0.002	0.002	NA	0.002	--	NA	--

(1) New Mexico State Standards as provided in 20.6.2.3103

1990 RFI

NMED - New Mexico Environment Department
TCLP - toxicity characteristic leaching potential
PCB - polychlorinated biphenyls
mg/L - milligrams per liter
-- - not detected
NA - not applicable/not analyzed

Bolded text/shaded cells indicate constituent concentration above one or more screening criteria.

TABLE 5.4

RUBBLE SAMPLE ANALYTICAL SUMMARY DATA
LF-25 (SWMU 97) ENVIRONMENTAL ASSESSMENT
CANNON AFB

CONSTITUENT	Federal MCLs	New Mexico State Standards	Trench 6	Trench 7A	Trench 8
ASBESTOS (%)	NA	NA	NA	NA	--
TCLP Volatile Organics (mg/L)	NA	NA	NA	NA	--
TCLP EXTRACTABLE ORGANICS (mg/L)	NA	NA	NA	NA	--
PCBS (mg/L)	NA	NA	NA	NA	--
TCLP PESTICIDES (mg/L)	NA	NA	NA	NA	--
TCLP HERBICIDES (mg/L)	NA	NA	NA	NA	-
TCLP METALS (mg/L)					
Barium	2	1	NA	NA	0.2
Cadmium	0.005	0.01	NA	NA	--
Mercury	0.002	0.002	NA	NA	--

(1) New Mexico State Standards as provided in 20.6.2.3103

NMED - New Mexico Environment Department
TCLP - toxicity characteristic leaching potential
PCB - polychlorinated biphenyls
mg/L - milligrams per liter
-- - not detected
NA - not applicable/not analyzed

Bolded text/shaded cells indicate constituent concentration above one or more screening criteria.

TABLE 5.5

VOC, TPH, AND CHLORINATED HERBICIDES DETECTED IN LF-25 (SWMU 97) SOILS
1992 RFI
CANNON AFB

CONSTITUENTS	NMED Residential SSLs[1]	NMED Soil to Groundwater SSLs (DAF 20)[1]	TRENCHES					
			CAN-97-12-06 5-7	CAN-97-12-1 4-6	CAN-97-12-S 0-2	CAN-97-13-1 4-5	CAN-97-13-S 0-2	CAN-97-13-99 0-2
VOCs (ug/kg)								
Acetone	70,400,000	2,060	--	--	--	--	--	34 J
Benzene	27,000	28.3	--	--	--	--	2.7 J	3.8 J
Methylene Chloride	~~165,000~~ 87,000	16.9	--	--	32	--	11	7.1
Toluene	248,000	6,800	--	--	2.4 J	--	37	36
Xylenes	132,000	10,100	--	--	--	--	2.6 J	2.6 J
Chlorinated Herbicides (ug/kg)								
2,4,5-T	NA	NA	--	NA	NA	0.881	NA	NA
2,4,5-TP	NA	NA	--	NA	NA	2.91	NA	NA
2,4-DB	NA	NA	--	NA	NA	--	NA	NA
Dichloroprop	NA	NA	--	NA	NA	--	NA	NA
MCPP	NA	NA	--	NA	NA	2000 J	NA	NA
TPH (ug/kg)								
GRO	NA	NA	--	NA	NA	--	NA	NA
DRO	880,000[2][4]	NA	21,000 B	NA	NA	18,000 B	NA	NA
TRPH (mg/kg)	800[2][3] 200	NA	--	35	67	--	62	93

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)
(2) NMED TPH Screening Guidelines
(3) TPH Screening Guideline for unknow TPH oil
(4) Presented in ug/kg for consistency with presented analytical data

NMED - New Mexico Environment Department
SSL - soil screening level
DAF - dilution attenuation factor
VOC - volatile organic compound
TPH - total petroleum hydrocarbon
GRO - gasoline-range organics
DRO - diesel- range organics
TRPH - total recoverable petroleum hydrocarbons
mg/kg - milligrams per kilogram
ug/kg - micrograms per kilogram
-- - not detected
NA - not applicable/not analyzed
B - Indicates reported concentration was determined to be associated with laboratory contamination

Bolded text/shaded cells indicate constituent concentration above one or more screening criteria.

TABLE 5.5

VOC, TPH, AND CHLORINATED HERBICIDES DETECTED IN LF-25 (SWMU 97) SOILS
1992 RFI
CANNON AFB

CONSTITUENTS	NMED Residential SSLs	NMED Soil to Groundwater SSLs (DAF 20)[1]	TRENCHES				
			CAN-97-15-S 0-2	CAN-97-16-06 5-7	CAN-97-16-11 4-6	CAN-97-16-S 0-2	CAN-97-16-99 0-2
VOCs (ug/kg)							
Acetone	70,400,000	2,060	--	--	--	120	--
Benzene	27,000	28.3	6.7	--	--	--	--
Methylene Chloride	165,000	~~16.9~~ 120,000	6.3	--	--	**100**	--
Toluene	248,000	6,800	79	--	--	68	--
Xylenes	132,000	10,100	3.6 J	--	--	4.91 J	--
Chlorinated Herbicides (ug/kg)							
2,4,5-T	NA	NA	--	--	NA	NA	NA
2,4,5-TP	NA	NA	--	--	NA	NA	NA
2,4-DB	NA	NA	34	--	NA	NA	NA
Dichloroprop	NA	NA	17 J	11 J	NA	NA	NA
MCPP	NA	NA	--	--	NA	NA	NA
TPH (ug/kg)							
GRO	NA	NA	5,000	--	NA	NA	NA
DRO	880,000[2][4]	NA	120,000	15,000 B	NA	NA	NA
TRPH (mg/kg)	800[2][3]	NA	**1,600**	--	32	75	46

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)
(2) NMED TPH Screening Guidelines
(3) TPH Screening Guideline for unknow TPH oil
(4) Presented in ug/kg for consistency with presented analytical data

NMED - New Mexico Environment Department
SSL - soil screening level
DAF - dilution attenuation factor
VOC - volatile organic compound
TPH - total petroleum hydrocarbon
GRO - gasoline-range organics
DRO - diesel- range organics
TRPH - total recoverable petroleum hydrocarbons
mg/kg - milligrams per kilogram
ug/kg - micrograms per kilogram
-- - not detected
NA - not applicable/not analyzed
B - Indicates reported concentration was determined to be associated with laboratory contamination

Bolded text/shaded cells indicate constituent concentration above one or more screening criteria.

15-S also had benzo(a)pyrene at 970 µg/kg
NM res'd SSC is 621 µg/kg
but DAF 20 is 3780

TABLE 5.5

VOC, TPH, AND CHLORINATED HERBICIDES DETECTED IN LF-25 (SWMU 97) SOILS
1992 RFI
CANNON AFB

CONSTITUENTS	NMED Residential SSLs[1]	NMED Soil to Groundwater SSLs (DAF 20)[1]	TRENCHES				
			CAN-17-06 6-8	CAN-97-17-I 4-6	CAN-97-17-S 0-2	CAN-97-17-99 6-8	CAN-97-18-S 0-2
VOCs (ug/kg)							
Acetone	70,400,000	2,060	--	45 J	30 J	--	--
Benzene	27,000	28.3	--	--	2 J	--	--
Methylene Chloride	165,000	16.9	--	--	86	--	6.6
Toluene	248,000	6,800	--	1.1 J	7.8	--	25
Xylenes	132,000	10,100	--	--	--	--	1.4 J
Chlorinated Herbicides (ug/kg)							
2,4,5-T	NA	NA	NA	--	NA	NA	9.6
2,4,5-TP	NA	NA	NA	2.1 J	NA	NA	17
2,4-DB	NA	NA	NA	9.4 J	NA	NA	--
Dichloroprop	NA	NA	NA	18 J	NA	NA	190
MCPP	NA	NA	NA	--	NA	NA	--
TPH (ug/kg)							
GRO	NA	NA	NA	--	NA	NA	3,000 J
DRO	880,000[2][4]	NA	NA	13,000 B	NA	NA	17,000 B
TRPH (mg/kg)	800[2][3]	NA	47	100	9900	42	110

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)
(2) NMED TPH Screening Guidelines
(3) TPH Screening Guideline for unknow TPH oil
(4) Presented in ug/kg for consistency with presented analytical data

NMED - New Mexico Environment Department
SSL - soil screening level
DAF - dilution attenuation factor
VOC - volatile organic compound
TPH - total petroleum hydrocarbon
GRO - gasoline-range organics
DRO - diesel- range organics
TRPH - total recoverable petroleum hydrocarbons
mg/kg - milligrams per kilogram
ug/kg - micrograms per kilogram
-- - not detected
NA - not applicable/not analyzed
B - Indicates reported concentration was determined to be associated with laboratory contamination

Bolded text/shaded cells indicate constituent concentration above one or more screening criteria.

TA[illegible] 5.5

VOC, TPH, AND CHLORINATED HERBICIDES DETECTED IN LF-25 (SWMU 97) SOILS
1992 RFI
CANNON AFB

CONSTITUENTS	NMED Residential SSLs[1]	NMED Soil to Groundwater SSLs (DAF 20)[1]	TRENCHES				
			CAN-97-19-06 5-7	CAN-97-19-I 4-6	CAN-97-19-S 1-2	CAN-97-19-99 0-2	CAN-97-20-I 4-6
VOCs (ug/kg)							
Acetone	70,400,000	2,060	--	--	--	16 J	--
Benzene	27,000	28.3	--	--	2.7 J	3.1 J	--
Methylene Chloride	165,000	16.9	--	--	43	36	--
Toluene	248,000	6,800		0.79 J	21	44	--
Xylenes	132,000	10,100	--	--	--	3.1 J	--
Chlorinated Herbicides (ug/kg)							
2,4,5-T	NA	NA	--	NA	NA	NA	--
2,4,5-TP	NA	NA	13	NA	NA	NA	4.5 J
2,4-DB	NA	NA	5.6 J	NA	NA	NA	4.8 J
Dichloroprop	NA	NA	16 J	NA	NA	NA	--
MCPP	NA	NA	--	NA	NA	NA	--
TPH (ug/kg)							
GRO	NA	NA	--	NA	NA	NA	--
DRO	880,000[2][4]	NA	100,000	NA	NA	NA	19,000 B
TRPH (mg/kg)	800[2][3]	NA	56	180	400	340	33

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)
(2) NMED TPH Screening Guidelines
(3) TPH Screening Guideline for unknow TPH oil
(4) Presented in ug/kg for consistency with presented analytical data

NMED - New Mexico Environment Department
SSL - soil screening level
DAF - dilution attenuation factor
VOC - volatile organic compound
TPH - total petroleum hydrocarbon
GRO - gasoline-range organics
DRO - diesel- range organics
TRPH - total recoverable petroleum hydrocarbons
mg/kg - milligrams per kilogram
ug/kg - micrograms per kilogram
-- - not detected
NA - not applicable/not analyzed
B - Indicates reported concentration was determined to be associated with laboratory contamination

Bolded text/shaded cells indicate constituent concentration above one or more screening criteria.

TABLE 5.5

VOC, TPH, AND CHLORINATED HERBICIDES DETECTED IN LF-25 (SWMU 97) SOILS
1992 RFI
CANNON AFB

CONSTITUENTS	NMED Residential SSLs	NMED Soil to Groundwater SSLs (DAF 20)[1]	TRENCHES		BORINGS		
			CAN-97-20-S 0-2	CAN-97-21-S 0-2	CAN-97-09-01 0-2	CAN-97-09-03 9-11	CAN-97-10-01 0-2
VOCs (ug/kg)							
Acetone	70,400,000	2,060	31 J	--	--	--	--
Benzene	27,000	28.3	2.8 J	8.2	--	--	--
Methylene Chloride	165,000	16.9	--	74	--	3.4 J	4.9 J
Toluene	248,000	6,800	100	220	--	1 J	4.7 J
Xylenes	132,000	10,100	--	25	--	--	--
Chlorinated Herbicides (ug/kg)							
2,4,5-T	NA	NA	NA	3.7 J	NA	--	NA
2,4,5-TP	NA	NA	NA	--	NA	--	NA
2,4-DB	NA	NA	NA	12 J	NA	--	NA
Dichloroprop	NA	NA	NA	--	NA	--	NA
MCPP	NA	NA	NA	--	NA	520 J	NA
TPH (ug/kg)							
GRO	NA	NA	NA	5,400	NA	--	NA
DRO	880,000[2][4]	NA	NA	33,000 B	NA	6,800 B	NA
TRPH (mg/kg)	800[2][3]	NA	610	25	27	--	48

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)
(2) NMED TPH Screening Guidelines
(3) TPH Screening Guideline for unknow TPH oil
(4) Presented in ug/kg for consistency with presented analytical data

NMED - New Mexico Environment Department
SSL - soil screening level
DAF - dilution attenuation factor
VOC - volatile organic compound
TPH - total petroleum hydrocarbon
GRO - gasoline-range organics
DRO - diesel- range organics
TRPH - total recoverable petroleum hydrocarbons
mg/kg - milligrams per kilogram
ug/kg - micrograms per kilogram
-- - not detected
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B - Indicates reported concentration was determined to be associated with laboratory contamination

Bolded text/shaded cells indicate constituent concentration above one or more screening criteria.

TABLE 5.5

VOC, TPH, AND CHLORINATED HERBICIDES DETECTED IN LF-25 (SWMU 97) SOILS
1992 RFI
CANNON AFB

CONSTITUENTS	NMED Residential SSLs[1]	NMED Soil to Groundwater SSLs (DAF 20)[1]	BORINGS				
			CAN-97-10-03	CAN-97-11-01	CAN-97-11-02	CAN-97-14-01	CAN-97-14-02
			9-11	0-2	4-6	0-2	4-6
VOCs (ug/kg)							
Acetone	70,400,000	2,060	--	--	--	--	--
Benzene	27,000	28.3	--	--	--	--	--
Methylene Chloride	165,000	16.9	--	--	--	--	--
Toluene	248,000	6,800	0.63 J	5.2 J	5.2 J	30	--
Xylenes	132,000	10,100	--	--	--	4.1 J	--
Chlorinated Herbicides (ug/kg)							
2,4,5-T	NA	NA	--	NA	--	NA	--
2,4,5-TP	NA	NA	--	NA	--	NA	--
2,4-DB	NA	NA	--	NA	--	NA	--
Dichloroprop	NA	NA	3.2 J	NA	6.6 J	NA	3.8 J
MCPP	NA	NA	--	NA	--	NA	--
TPH (ug/kg)							
GRO	NA	NA	--	NA	--	NA	--
DRO	880,000[2][4]	NA	7,700 B	NA	12,000 B	NA	8,700 B
TRPH (mg/kg)	800[2][3]	NA	--	160	--	52	--

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)
(2) NMED TPH Screening Guidelines
(3) TPH Screening Guideline for unknow TPH oil
(4) Presented in ug/kg for consistency with presented analytical data

NMED - New Mexico Environment Department
SSL - soil screening level
DAF - dilution attenuation factor
VOC - volatile organic compound
TPH - total petroleum hydrocarbon
GRO - gasoline-range organics
DRO - diesel- range organics
TRPH - total recoverable petroleum hydrocarbons
mg/kg - milligrams per kilogram
ug/kg - micrograms per kilogram
-- - not detected
NA - not applicable/not analyzed
B - Indicates reported concentration was determined to be associated with laboratory contamination

Bolded text/shaded cells indicate constituent concentration above one or more screening criteria.

T[illegible] 5.5

VOC, TPH, AND CHLORINATED HERBICIDES DETECTED IN LF-25 (SWMU 97) SOILS
1992 RFI
CANNON AFB

CONSTITUENTS	NMED Residential SSLs[1]	NMED Soil to Groundwater SSLs (DAF 20)[1]	BORINGS				
			CAN-97-14-99 4-6	CAN-97-2A-1 4-6	CAN-97-2A-S 0.5-1	CAN-97-2B-1 4-6	CAN-97-2B-S 0-2
VOCs (ug/kg)							
Acetone	70,400,000	2,060	--	180	--	38 J	--
Benzene	27,000	28.3	--	--	--	--	--
Methylene Chloride	165,000	16.9	--	5.3 J	8.8	--	**18**
Toluene	248,000	6,800	--	--	4.1 J	--	2.3 J
Xylenes	132,000	10,100	--	1.2 J	--	--	--
Chlorinated Herbicides (ug/kg)							
2,4,5-T	NA	NA	--	--	NA	NA	--
2,4,5-TP	NA	NA	--	--	NA	NA	--
2,4-DB	NA	NA	--	--	NA	NA	--
Dichloroprop	NA	NA	--	--	NA	NA	4 J
MCPP	NA	NA	--	--	NA	NA	--
TPH (ug/kg)							
GRO	NA	NA	--	--	NA	NA	--
DRO	880,000[2][4]	NA	5,800 B	5,400 J	NA	NA	49,000 J
TRPH (mg/kg)	800[2][3]	NA	--	42	**1,300**	29	**2,500**

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)
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(3) TPH Screening Guideline for unknow TPH oil
(4) Presented in ug/kg for consistency with presented analytical data

NMED - New Mexico Environment Department
SSL - soil screening level
DAF - dilution attenuation factor
VOC - volatile organic compound
TPH - total petroleum hydrocarbon
GRO - gasoline-range organics
DRO - diesel- range organics
TRPH - total recoverable petroleum hydrocarbons
mg/kg - milligrams per kilogram
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-- - not detected
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TABLE 5.5

VOC, TPH, AND CHLORINATED HERBICIDES DETECTED IN LF-25 (SWMU 97) SOILS
1992 RFI
CANNON AFB

CONSTITUENTS	NMED Residential SSLs	NMED Soil to Groundwater SSLs (DAF 20)[1]	BORINGS				
			CAN-97-2B-99 4-6	CAN-97-3B-06 8-10	CAN-97-3B-1 4-6	CAN-97-3B-S 0-2	CAN-97-4A-1 4-6
VOCs (ug/kg)							
Acetone	70,400,000	2,060	--	--	--	--	780
Benzene	27,000	28.3	--	--	--	--	--
Methylene Chloride	165,000	16.9	--	--	2.9 J	4.7 J	--
Toluene	248,000	6,800	--	--	0.61 J	0.4 J	--
Xylenes	132,000	10,100	--	--	--	--	--
Chlorinated Herbicides (ug/kg)							
2,4,5-T	NA	NA	NA	NA	NA	--	--
2,4,5-TP	NA	NA	NA	NA	NA	--	--
2,4-DB	NA	NA	NA	NA	NA	--	--
Dichloroprop	NA	NA	NA	NA	NA	--	--
MCPP	NA	NA	NA	NA	NA	--	--
TPH (ug/kg)							
GRO	NA	NA	NA	NA	NA	--	--
DRO	880,000[2][4]	NA	NA	NA	NA	6,900 B	3,700 J
TRPH (mg/kg)	800[2][3]	NA	32	31	110	34	--

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)
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(3) TPH Screening Guideline for unknow TPH oil
(4) Presented in ug/kg for consistency with presented analytical data

NMED - New Mexico Environment Department
SSL - soil screening level
DAF - dilution attenuation factor
VOC - volatile organic compound
TPH - total petroleum hydrocarbon
GRO - gasoline-range organics
DRO - diesel- range organics
TRPH - total recoverable petroleum hydrocarbons
mg/kg - milligrams per kilogram
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TABLE 5.5

VOC, TPH, AND CHLORINATED HERBICIDES DETECTED IN LF-25 (SWMU 97) SOILS
1992 RFI
CANNON AFB

CONSTITUENTS	NMED Residential SSL	NMED Soil to Groundwater SSL6 (DAF 20)[1]	BORINGS				
			CAN-97-4B-06 8-10	CAN-97-4B-I 4-6	CAN-97-4B-S 1-2	CAN-97-8A-06 8-10	CAN-97-8A-I 4-6
VOCs (ug/kg)							
Acetone	70,400,000	2,060	--	--	--	--	150
Benzene	27,000	28.3	--	--	--	--	--
Methylene Chloride	165,000	16.9	--	--	--	--	--
Toluene	248,000	6,800	--	0.18 J	3.5 J	--	--
Xylenes	132,000	10,100	--	--	1.2 J	--	--
Chlorinated Herbicides (ug/kg)							
2,4,5-T	NA	NA	NA	--	NA	NA	NA
2,4,5-TP	NA	NA	NA	--	NA	NA	NA
2,4-DB	NA	NA	NA	--	NA	NA	NA
Dichloroprop	NA	NA	NA	2.8 J	NA	NA	NA
MCPP	NA	NA	NA	--	NA	NA	NA
TPH (ug/kg)							
GRO	NA	NA	NA	--	NA	NA	--
DRO	880,000[2][4]	NA	NA	7,200 B	NA	NA	4,300 J
TRPH (mg/kg)	800[2][3]	NA	38	29	85	30	39

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)
(2) NMED TPH Screening Guidelines
(3) TPH Screening Guideline for unknow TPH oil
(4) Presented in ug/kg for consistency with presented analytical data

NMED - New Mexico Environment Department
SSL - soil screening level
DAF - dilution attenuation factor
VOC - volatile organic compound
TPH - total petroleum hydrocarbon
GRO - gasoline-range organics
DRO - diesel- range organics
TRPH - total recoverable petroleum hydrocarbons
mg/kg - milligrams per kilogram
ug/kg - micrograms per kilogram
-- - not detected
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TABLE 5.5

VOC, TPH, AND CHLORINATED HERBICIDES DETECTED IN LF-25 (SWMU 97) SOILS
1992 RFI
CANNON AFB

CONSTITUENTS	NMED Residential SSLs[1]	NMED Soil to Groundwater SSLs (DAF 20)[1]	BORINGS				
			CAN-97-8A-S 0.5-1	CAN-97-BG-01 0-2	CAN-97-BG-99 0-2	CAN-97-09-05 19-21	CAN-97-09-07 29-31
VOCs (ug/kg)							
Acetone	70,400,000	2,060	--	--	--	--	--
Benzene	27,000	28.3	--	--	--	--	--
Methylene Chloride	165,000	16.9	--	--	--	3.7 J	--
Toluene	248,000	6,800	5.2 J	3.7 J	8.8	1.7 J	--
Xylenes	132,000	10,100	1.7 J	--	0.59 J	--	--
Chlorinated Herbicides (ug/kg)							
2,4,5-T	NA	NA	NA	--	--	NA	--
2,4,5-TP	NA	NA	NA	--	4.9 J	NA	--
2,4-DB	NA	NA	NA	--	--	NA	--
Dichloroprop	NA	NA	NA	10 J	--	NA	12 J
MCPP	NA	NA	NA	680 J	5800 J	NA	--
TPH (ug/kg)							
GRO	NA	NA	NA	--	--	NA	--
DRO	880,000[2][4]	NA	NA	33,000 B	36,000 B	NA	6,100 B
TRPH (mg/kg)	800[2][3]	NA	87	1,700	1,600	--	--

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)
(2) NMED TPH Screening Guidelines
(3) TPH Screening Guideline for unknow TPH oil
(4) Presented in ug/kg for consistency with presented analytical data

NMED - New Mexico Environment Department
SSL - soil screening level
DAF - dilution attenuation factor
VOC - volatile organic compound
TPH - total petroleum hydrocarbon
GRO - gasoline-range organics
DRO - diesel- range organics
TRPH - total recoverable petroleum hydrocarbons
mg/kg - milligrams per kilogram
ug/kg - micrograms per kilogram
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TABLE 5.5

VOC, TPH, AND CHLORINATED HERBICIDES DETECTED IN LF-25 (SWMU 97) SOILS
1992 RFI
CANNON AFB

CONSTITUENTS	NMED Residential SSLs[1]	NMED Soil to Groundwater SSLs (DAF 20)[1]	BORINGS				
			CAN-97-09-08 34-36	CAN-97-09-09 39-41	CAN-97-09-10 44-46	CAN-97-09-12 54-56	CAN-97-09-13 59-61
VOCs (ug/kg)							
Acetone	70,400,000	2,060	16 J	10 J	--	--	--
Benzene	27,000	28.3	--	--	--	--	--
Methylene Chloride	165,000	16.9	--	7.9	6.8	--	3.5 J
Toluene	248,000	6,800	--	4.2 J	15	1 J	0.73 J
Xylenes	132,000	10,100	--	--	--	--	--
Chlorinated Herbicides (ug/kg)							
2,4,5-T	NA	NA	NA	--	NA	NA	NA
2,4,5-TP	NA	NA	NA	--	NA	NA	NA
2,4-DB	NA	NA	NA	--	NA	NA	NA
Dichloroprop	NA	NA	NA	14 J	NA	NA	NA
MCPP	NA	NA	NA	--	NA	NA	NA
TPH (ug/kg)							
GRO	NA	NA	NA	--	NA	NA	NA
DRO	880,000[2][4]	NA	NA	5,000 J	NA	NA	NA
TRPH (mg/kg)	800[2][3]	NA	--	--	--	--	--

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)
(2) NMED TPH Screening Guidelines
(3) TPH Screening Guideline for unknow TPH oil
(4) Presented in ug/kg for consistency with presented analytical data

NMED - New Mexico Environment Department
SSL - soil screening level
DAF - dilution attenuation factor
VOC - volatile organic compound
TPH - total petroleum hydrocarbon
GRO - gasoline-range organics
DRO - diesel- range organics
TRPH - total recoverable petroleum hydrocarbons
mg/kg - milligrams per kilogram
ug/kg - micrograms per kilogram
-- - not detected
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TABLE 5.5

VOC, TPH, AND CHLORINATED HERBICIDES DETECTED IN LF-25 (SWMU 97) SOILS
1992 RFI
CANNON AFB

CONSTITUENTS	NMED Residential SSL(1)	NMED Soil to Groundwater SSLs (DAF 20)(1)	BORINGS				
			CAN-97-10-08 34-36	CAN-97-10-09 39-41	CAN-97-10-10 [illegible]	CAN-97-11-04 [illegible]	CAN-97-11-05 19-21
VOCs (ug/kg)							
Acetone	70,400,000	2,060	--	--	97 J	--	--
Benzene	27,000	28.3	0.85 J	--	1.6 J	--	--
Methylene Chloride	165,000	16.9	--	--	--	--	--
Toluene	248,000	6,800	0.8 J	1.2 J	1.9 J	11	1 J
Xylenes	132,000	10,100	1.4 J	--	--	--	--
Chlorinated Herbicides (ug/kg)							
2,4,5-T	NA	NA	--	NA	NA	--	NA
2,4,5-TP	NA	NA	--	NA	NA	--	NA
2,4-DB	NA	NA	--	NA	NA	--	NA
Dichloroprop	NA	NA	--	NA	NA	3.7 J	NA
MCPP	NA	NA	--	NA	NA	--	NA
TPH (ug/kg)							
GRO	NA	NA	--	NA	NA	--	NA
DRO	880,000(2)(4)	NA	8,600 B	NA	NA	13,000 B	NA
TRPH (mg/kg)	800(2)(3)	NA	--	--	--	30	--

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)
(2) NMED TPH Screening Guidelines
(3) TPH Screening Guideline for unknow TPH oil
(4) Presented in ug/kg for consistency with presented analytical data

NMED - New Mexico Environment Department
SSL - soil screening level
DAF - dilution attenuation factor
VOC - volatile organic compound
TPH - total petroleum hydrocarbon
GRO - gasoline-range organics
DRO - diesel- range organics
TRPH - total recoverable petroleum hydrocarbons
mg/kg - milligrams per kilogram
ug/kg - micrograms per kilogram
-- - not detected
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B - Indicates reported concentration was determined to be associated with laboratory contamination

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TABLE 5.5

VOC, TPH, AND CHLORINATED HERBICIDES DETECTED IN LF-25 (SWMU 97) SOILS
1992 RFI
CANNON AFB

CONSTITUENTS	NMED Residential SSLs[1]	NMED Soil to Groundwater SSLs (DAF 20)[1]	BORINGS				
			CAN-97-11-06 24-26	CAN-97-11-08 34-36	CAN-97-11-09 39-41	CAN-97-11-99 39-41	CAN-97-11-10 46-48
VOCs (ug/kg)							
Acetone	70,400,000	2,060	--	--	--	--	--
Benzene	27,000	28.3	--	--	--	--	--
Methylene Chloride	165,000	16.9	--	--	--	--	--
Toluene	248,000	6,800	0.97 J	5.9	--	1.6 J	5.7
Xylenes	132,000	10,100	--	--	--	--	--
Chlorinated Herbicides (ug/kg)							
2,4,5-T	NA	NA	NA	NA	--	--	NA
2,4,5-TP	NA	NA	NA	NA	--	--	NA
2,4-DB	NA	NA	NA	NA	--	--	NA
Dichloroprop	NA	NA	NA	NA	3.3 J	4.21 J	NA
MCPP	NA	NA	NA	NA	--	--	NA
TPH (ug/kg)							
GRO	NA	NA	NA	NA	NA	NA	NA
DRO	880,000[2][4]	NA	NA	NA	7,600 B	6,400 B	NA
TRPH (mg/kg)	800[2][3]	NA	--	--	--	--	--

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)
(2) NMED TPH Screening Guidelines
(3) TPH Screening Guideline for unknow TPH oil
(4) Presented in ug/kg for consistency with presented analytical data

NMED - New Mexico Environment Department
SSL - soil screening level
DAF - dilution attenuation factor
VOC - volatile organic compound
TPH - total petroleum hydrocarbon
GRO - gasoline-range organics
DRO - diesel- range organics
TRPH - total recoverable petroleum hydrocarbons
mg/kg - milligrams per kilogram
ug/kg - micrograms per kilogram
-- - not detected
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VOC, TPH, AND CHLORINATED HERBICIDES DETECTED IN LF-25 (SWMU 97) SOILS
1992 RFI
CANNON AFB

CONSTITUENTS	NMED Residential SSL[1]	NMED Soil to Groundwater SSL (DAF 20)[1]	BORINGS				
			CAN-97-11-11	CAN-97-11-12	CAN-97-11-13	CAN-97-14-06	CAN-97-14-07
			51-53	54-56	59-61	24-26	29-31
VOCs (ug/kg)							
Acetone	70,400,000	2,060	--	--	--	26 J	25 J
Benzene	27,000	28.3	--	--	--	--	--
Methylene Chloride	165,000	16.9	--	--	--	--	--
Toluene	248,000	6,800	0.98 J	4.4 J	0.97 J	--	--
Xylenes	132,000	10,100	--	--	--	--	--
Chlorinated Herbicides (ug/kg)							
2,4,5-T	NA	NA	NA	NA	NA	--	NA
2,4,5-TP	NA	NA	NA	NA	NA	--	NA
2,4-DB	NA	NA	NA	NA	NA	--	NA
Dichloroprop	NA	NA	NA	NA	NA	4.2 J	NA
MCPP	NA	NA	NA	NA	NA	--	NA
TPH (ug/kg)							
GRO	NA	NA	NA	NA	NA	--	NA
DRO	880,000[2][4]	NA	NA	NA	NA	9,400 B	NA
TRPH (mg/kg)	800[2][3]	NA	--	--	--	--	--

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)
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(3) TPH Screening Guideline for unknow TPH oil
(4) Presented in ug/kg for consistency with presented analytical data

NMED - New Mexico Environment Department
SSL - soil screening level
DAF - dilution attenuation factor
VOC - volatile organic compound
TPH - total petroleum hydrocarbon
GRO - gasoline-range organics
DRO - diesel- range organics
TRPH - total recoverable petroleum hydrocarbons
mg/kg - milligrams per kilogram
ug/kg - micrograms per kilogram
-- - not detected
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TABLE 5.5

VOC, TPH, AND CHLORINATED HERBICIDES DETECTED IN LF-25 (SWMU 97) SOILS
1992 RFI
CANNON AFB

CONSTITUENTS	NMED Residential SSLs	NMED Soil to Groundwater SSLs (DAF 20)[1]	BORINGS				
			CAN-97-14-08 34-36	CAN-97-14-11 49-51	CAN-97-14-12 54-56	CAN-97-14-13 59-61	CAN-97-3A-06 21-25
VOCs (ug/kg)							
Acetone	70,400,000	2,060	--	--	--	--	100 J
Benzene	27,000	28.3	--	--	--	--	--
Methylene Chloride	165,000	16.9	--	--	--	--	9.5
Toluene	248,000	6,800	--	0.97 J	2.4 J	4.5 J	9.2
Xylenes	132,000	10,100	--	--	--	--	2.8 J
Chlorinated Herbicides (ug/kg)							
2,4,5-T	NA	NA	--	NA	NA	NA	--
2,4,5-TP	NA	NA	--	NA	NA	NA	--
2,4-DB	NA	NA	--	NA	NA	NA	--
Dichloroprop	NA	NA	3.9 J	NA	NA	NA	21 J
MCPP	NA	NA	--	NA	NA	NA	--
TPH (ug/kg)							
GRO	NA	NA	--	NA	NA	NA	NA
DRO	880,000[2][4]	NA	6,900 B	NA	NA	NA	5,400 J
TRPH (mg/kg)	800[2][3]	NA	--	--	--	37	--

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)
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(3) TPH Screening Guideline for unknow TPH oil
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DAF - dilution attenuation factor
VOC - volatile organic compound
TPH - total petroleum hydrocarbon
GRO - gasoline-range organics
DRO - diesel- range organics
TRPH - total recoverable petroleum hydrocarbons
mg/kg - milligrams per kilogram
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TABLE 5.5

VOC, TPH, AND CHLORINATED HERBICIDES DETECTED IN LF-25 (SWMU 97) SOILS
1992 RFI
CANNON AFB

CONSTITUENTS	NMED Residential SSLs[1]	NMED Soil to Groundwater SSLs (DAF 20)[1]	BORINGS				
			CAN-97-3A-1 19-21	CAN-97-3A-S 15-17	CAN-97-3C-01 12-14	CAN-97-3C-04 28-30	CAN-97-3C-05 33-35
VOCs (ug/kg)							
Acetone	70,400,000	2,060	--	--	14 J	--	--
Benzene	27,000	28.3	--	--	--	--	--
Methylene Chloride	165,000	16.9	--	--	--	--	8.8
Toluene	248,000	6,800	--	1.2 J	1.9 J	--	--
Xylenes	132,000	10,100	--	--	--	--	--
Chlorinated Herbicides (ug/kg)							
2,4,5-T	NA	NA	--	--	--	--	NA
2,4,5-TP	NA	NA	--	--	22	--	NA
2,4-DB	NA	NA	--	--	--	--	NA
Dichloroprop	NA	NA	17 J	--	49	180	NA
MCPP	NA	NA	--	--	9300	--	NA
TPH (ug/kg)							
GRO	NA	NA	NA	--	--	--	--
DRO	880,000[2][4]	NA	4,800 J	5,300 J	44,000 B	16,000 B	NA
TRPH (mg/kg)	800[2][3]	NA	--	330	69	--	49

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)
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(3) TPH Screening Guideline for unknow TPH oil
(4) Presented in ug/kg for consistency with presented analytical data

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SSL - soil screening level
DAF - dilution attenuation factor
VOC - volatile organic compound
TPH - total petroleum hydrocarbon
GRO - gasoline-range organics
DRO - diesel- range organics
TRPH - total recoverable petroleum hydrocarbons
mg/kg - milligrams per kilogram
ug/kg - micrograms per kilogram
-- - not detected
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TABLE 5.5

VOC, TPH, AND CHLORINATED HERBICIDES DETECTED IN LF-25 (SWMU 97) SOILS
1992 RFI
CANNON AFB

CONSTITUENTS	NMED Residential SSLs	NMED Soil to Groundwater SSLs (DAF 20)[1]	BORINGS				
			CAN-97-3C-06 38-40	CAN-97-3C-99 38-40	CAN-97-8B-03 14-16	CAN-97-8B-04 19-21	CAN-97-8B-05 24-26
VOCs (ug/kg)							
Acetone	70,400,000	2,060	--	--	9.7 J	--	--
Benzene	27,000	28.3	--	--	--	--	--
Methylene Chloride	165,000	16.9	4.4 J	--	--	--	2.7 J
Toluene	248,000	6,800	--	--	--	--	--
Xylenes	132,000	10,100	--	--	--	--	--
Chlorinated Herbicides (ug/kg)							
2,4,5-T	NA	NA	--	--	--	--	NA
2,4,5-TP	NA	NA	--	--	--	--	NA
2,4-DB	NA	NA	--	--	--	--	NA
Dichloroprop	NA	NA	670	--	3.2 J	5.6 J	NA
MCPP	NA	NA	--	--	--	--	NA
TPH (ug/kg)							
GRO	NA	NA	--	--	--	--	NA
DRO	880,000[2][4]	NA	19,000 B	24,000 B	18,000 B	7,100 B	NA
TRPH (mg/kg)	800[2][3]	NA	--	--	33	--	51

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)
(2) NMED TPH Screening Guidelines
(3) TPH Screening Guideline for unknow TPH oil
(4) Presented in ug/kg for consistency with presented analytical data

NMED - New Mexico Environment Department
SSL - soil screening level
DAF - dilution attenuation factor
VOC - volatile organic compound
TPH - total petroleum hydrocarbon
GRO - gasoline-range organics
DRO - diesel- range organics
TRPH - total recoverable petroleum hydrocarbons
mg/kg - milligrams per kilogram
ug/kg - micrograms per kilogram
-- - not detected
NA - not applicable/not analyzed
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Bolded text/shaded cells indicate constituent concentration above one or more screening criteria.

TABLE 5.5

VOC, TPH, AND CHLORINATED HERBICIDES DETECTED IN LF-25 (SWMU 97) SOILS
1992 RFI
CANNON AFB

CONSTITUENTS	NMED Residential SSLs[1]	NMED Soil to Groundwater SSLs (DAF 20)[1]	BORINGS				
			CAN-97-8B-06 29-31	CAN-97-8B-07 34-36	CAN-97-8B-08 39-41	CAN-97-8B-09 44-46	CAN-97-8B-10 49-51
VOCs (ug/kg)							
Acetone	70,400,000	2,060	--	--	--	--	--
Benzene	27,000	28.3	--	--	--	--	--
Methylene Chloride	165,000	16.9	--	--	--	--	--
Toluene	248,000	6,800	--	--	--	--	--
Xylenes	132,000	10,100	--	--	--	--	--
Chlorinated Herbicides (ug/kg)							
2,4,5-T	NA	NA	NA	--	NA	NA	NA
2,4,5-TP	NA	NA	NA	--	NA	NA	NA
2,4-DB	NA	NA	NA	--	NA	NA	NA
Dichloroprop	NA	NA	NA	250	NA	NA	NA
MCPP	NA	NA	NA	--	NA	NA	NA
TPH (ug/kg)							
GRO	NA	NA	NA	--	NA	NA	NA
DRO	880,000[2][4]	NA	NA	21,000 B	NA	NA	NA
TRPH (mg/kg)	800[2][3]	NA	35	--	31	40	38

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)
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(3) TPH Screening Guideline for unknow TPH oil
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TABLE 5.5

VOC, TPH, AND CHLORINATED HERBICIDES DETECTED IN LF-25 (SWMU 97) SOILS
1992 RFI
CANNON AFB

CONSTITUENTS	NMED Residential SSLs	NMED Soil to Groundwater SSLs (DAF 20)[1]	BORINGS				
			CAN-97-SB-11 54-56	CAN-97-BG-05 19-21	CAN-97-BG-07 32-34	CAN-97-BG-08 134-36	CAN-97-BG-12 56-58
VOCs (ug/kg)							
Acetone	70,400,000	2,060	--	--	--	--	--
Benzene	27,000	28.3	--	--	1.6 J	--	--
Methylene Chloride	165,000	16.9	--	2.4 J	4.1 J	--	--
Toluene	248,000	6,800	--	0.28 J	2 J	0.72 J	2.7 J
Xylenes	132,000	10,100	--	0.27 J	7.9	0.81 J	--
Chlorinated Herbicides (ug/kg)							
2,4,5-T	NA	NA	--	NA	--	--	NA
2,4,5-TP	NA	NA	--	NA	--	--	NA
2,4-DB	NA	NA	--	NA	--	--	NA
Dichloroprop	NA	NA	4.7 J	NA	--	--	NA
MCPP	NA	NA	--	NA	NA	NA	NA
TPH (ug/kg)							
GRO	NA	NA	--	NA	--	--	NA
DRO	880,000[2][4]	NA	7,200 B	NA	7,900 B	6,200 B	NA
TRPH (mg/kg)	800[2][3]	NA	29	--	--	--	--

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)
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(3) TPH Screening Guideline for unknow TPH oil
(4) Presented in ug/kg for consistency with presented analytical data

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DAF - dilution attenuation factor
VOC - volatile organic compound
TPH - total petroleum hydrocarbon
GRO - gasoline-range organics
DRO - diesel- range organics
TRPH - total recoverable petroleum hydrocarbons
mg/kg - milligrams per kilogram
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TABLE 5.5

VOC, TPH, AND CHLORINATED HERBICIDES DETECTED IN LF-25 (SWMU 97) SOILS
1992 RFI
CANNON AFB

CONSTITUENTS	NMED Residential SSLs[1]	NMED Soil to Groundwater SSLs (DAF 20)[1]	BORINGS CAN-97-BG-13 59-61
VOCs (ug/kg)			
Acetone	70,400,000	2,060	--
Benzene	27,000	28.3	--
Methylene Chloride	165,000	16.9	--
Toluene	248,000	6,800	0.83 J
Xylenes	132,000	10,100	--
Chlorinated Herbicides (ug/kg)			
2,4,5-T	NA	NA	NA
2,4,5-TP	NA	NA	NA
2,4-DB	NA	NA	NA
Dichloroprop	NA	NA	NA
MCPP	NA	NA	NA
TPH (ug/kg)			
GRO	NA	NA	NA
DRO	880,000[2][4]	NA	NA
TRPH (mg/kg)	800[2][3]	NA	--

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)
(2) NMED TPH Screening Guidelines
(3) TPH Screening Guideline for unknow TPH oil
(4) Presented in ug/kg for consistency with presented analytical data

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DAF - dilution attenuation factor
VOC - volatile organic compound
TPH - total petroleum hydrocarbon
GRO - gasoline-range organics
DRO - diesel- range organics
TRPH - total recoverable petroleum hydrocarbons
mg/kg - milligrams per kilogram
ug/kg - micrograms per kilogram
-- - not detected
NA - not applicable/not analyzed
B - Indicates reported concentration was determined to be associated with laboratory contamination

Bolded text/shaded cells indicate constituent concentration above one or more screening criteria.

SVOCs DETECTED IN LF-25 (SWMU 97) SOILS
1992 RFI
CANNON AFB

CONSTITUENTS	NMED Screening Levels	NMED Soil to Groundwater SSLs (DAF 20)(1)	TRENCH			DRYWELL	
			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
SVOCs (ug/kg)							
Benzo(a)anthracene	6210	1100	--	730	18 J	70 J	--
Benzo(a)pyrene	621	6120	--	870	180 J	36 J	--
Benzo(b)fluoranthene	6210	3400	11 J	3000	180 J	200 J	--
Benzo(g,h,i)perylene	NA	NA	--	270	--	58 J	--
Benzo(k)fluoranthene	62100	34000	11 J	890	180 J	200 J	--
Butylbenzylphthalate	NA	NA	--	--	22 J	--	--
Chrysene	621000	110000	--	780	120 J	84 J	--
Fluoranthene	2250000	4820000	8.4 J	1800	35 J	79 J	--
Phenanthrene	1800000	76200	9.4 J	540	45 J	52 J	--
Pyrene	2300000	568000	7.9 J	970	120 J	79 J	--
Bis(2-ethylhexyl)phthalate	347000	2170000	--	120 JB	1300	250 JB	320 B

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)

NMED - New Mexico Environment Department
SSL - soil screening level
DAF - dilution attenuation factor
PCB - polychlorinated biphenyls
ug/kg - micrograms per kilogram
-- - not detected
NA - not applicable

Bolded text/shaded cells indicate constituent concentration above one or more screening criteria.

TABLE 5.6

SVOCs DETECTED IN LF-25 (SWMU 97) SOILS
1992 RFI
CANNON AFB

CONSTITUENT	NMED Residential SSL	NMED Industrial Soil Screening Levels (SSL) (mg/kg)[1]	SVOCs			
			[illegible]	[illegible]	[illegible]	[illegible]
SVOCs (ug/kg)						
Benzo(a)anthracene	6210	1100	--	69 J	--	--
Benzo(a)pyrene	621	6120	--	--	--	--
Benzo(b)fluoranthene	6210	3400	--	--	--	--
Benzo(g,h,i)perylene	NA	NA	--	--	--	--
Benzo(k)fluoranthene	62100	34000	--	--	--	--
Butylbenzylphthalate	NA	NA	--	--	--	--
Chrysene	621000	110000	--	96 J	--	--
Fluoranthene	2250000	4820000	--	290 J	--	--
Phenanthrene	1800000	76200	--	430	--	--
Pyrene	2300000	568000	--	270 J	--	--
Bis(2-ethylhexyl)phthalate	347000	2170000	46 J	92 J	160 J	160 J

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)

NMED - New Mexico Environment Department
SSL - soil screening level
DAF - dilution attenuation factor
PCB - polychlorinated biphenyls
ug/kg - micrograms per kilogram
-- - not detected
NA - not applicable

Bolded text/shaded cells indicate constituent concentration above one or more screening criteria.

TABLE 5.6

SVOCs DETECTED IN LF-25 (SWMU 97) SOILS
1992 RFI
CANNON AFB

CONSTITUENT	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
			[illegible]	[illegible]	[illegible]	[illegible]
			15-17	[illegible]	27-31	57-61
SVOCs (ug/kg)						
Benzo(a)anthracene	6210	1100	--	--	--	--
Benzo(a)pyrene	621	6120	--	--	--	--
Benzo(b)fluoranthene	6210	3400	--	--	--	--
Benzo(g,h,i)perylene	NA	NA	--	--	--	--
Benzo(k)fluoranthene	62100	34000	--	--	--	--
Butylbenzylphthalate	NA	NA	--	--	--	--
Chrysene	621000	110000	--	--	--	--
Fluoranthene	2250000	4820000	--	--	--	--
Phenanthrene	1800000	76200	--	--	--	--
Pyrene	2300000	568000	--	--	--	--
Bis(2-ethylhexyl)phthalate	347000	2170000	6800 JB	29 J	5300	28 J

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)

NMED - New Mexico Environment Department
SSL - soil screening level
DAF - dilution attenuation factor
PCB - polychlorinated biphenyls
ug/kg - micrograms per kilogram
-- - not detected
NA - not applicable

Bolded text/shaded cells indicate constituent concentration above one or more screening criteria.

TABLE 5.6

SVOCs DETECTED IN LF-25 (SWMU 97) SOILS
1992 RFI
CANNON AFB

CONSTITUENT	NMED Residential SSL	NMED Soil to Groundwater SSL (DAF 20)[1]	BORINGS		
			CAN97-B3-5 1992	CAN97-B10-5 1992	CAN97-B11-5 1992
SVOCs (ug/kg)					
Benzo(a)anthracene	6210	1100	--	--	--
Benzo(a)pyrene	621	6120	--	--	--
Benzo(b)fluoranthene	6210	3400	--	--	--
Benzo(g,h,i)perylene	NA	NA	--	--	--
Benzo(k)fluoranthene	62100	34000	--	--	--
Butylbenzylphthalate	NA	NA	--	--	--
Chrysene	621000	110000	--	--	--
Fluoranthene	2250000	4820000	--	--	--
Phenanthrene	1800000	76200	--	--	--
Pyrene	2300000	566000	--	--	--
Bis(2-ethylhexyl)phthalate	347000	2170000	480	32 J	220 J

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DAF - dilution attenuation factor
PCB - polychlorinated biphenyls
ug/kg - micrograms per kilogram
-- - not detected
NA - not applicable

Bolded text/shaded cells indicate constituent concentration above one or more screening criteria.

TABLE 5.7

ORGANOCHLORINE PESTICIDES AND PCBS
DETECTED IN LF-25 (SWMU 97) SOILS
1992 RFI
CANNON AFB

CONSTITUENTS	NMED Residential SSLs[1]	NMED Soil to Groundwater SSLs (DAF 20)[1]	TRENCHES					
			CAN-97-12-D 4-6	CAN-97-12-S 0-2	CAN-97-15-S 0-2	CAN-97-15-99 0-2	CAN-97-15-T 4-6	CAN-97-15-S 0-2
ORGANOCHLORINE PESTICIDES (ug/kg)								
Aldrin	284	294	--	--	1.9	--	--	--
BHC, alpha	902	0.443	--	--	--	--	--	--
BHC, beta	3160	1.52	--	--	--	--	--	--
BHC, delta	NA	NA	--	--	--	--	--	--
BHC, gamma	4370	7.09	--	--	--	1.6	0.56	--
Chlordane	16200	7210	--	--	--	--	--	--
4,4'-DDD	24400	8400	--	--	--	--	--	--
4,4'-DDE	17200	26800	--	8.4	4.3	4.4	--	17
4,4'-DDT	17200	15800	1.4	3.8	2.4	2.3	--	27
Dieldrin	304	2.71	--	--	--	--	--	--
Endosulfan	360000	14900	--	--	--	--	--	--
Endrin	18000	745	--	--	--	--	--	--
Heptachlor	1080	NA	--	--	--	--	--	0.12
Heptachlor Epoxide	NA	NA	--	--	--	--	--	--
PCBs (ug/kg)	NA	NA	--	--	--	--	--	--

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NMED - New Mexico Environment Department
SSL - soil screening level
DAF - dilution attenuation factor
PCB - polychlorinated biphenyl
ug/kg - micrograms per kilogram
-- - not detected
NA - not applicable

Bolded text/shaded cells indicate constituent concentration above one or more screening criteria.

TABLE 5.7

ORGANOCHLORINE PESTICIDES AND PCBS
DETECTED IN LF-25 (SWMU 97) SOILS
1992 RFI
CANNON AFB

CONSTITUENTS	NMED Residential SSLs[1]	NMED Soil to Groundwater SSLs (DAF 20)[1]	TRENCHES				
			CAN-97-16-06 5-7	CAN-97-16-1 4-6	CAN-97-16-99 0-0	CAN-97-16-S 0-2	CAN-17-06 6-8
ORGANOCHLORINE PESTICIDES (ug/kg)							
Aldrin	284	294	--	--	--	--	--
BHC, alpha	902	0.443	--	--	--	--	--
BHC, beta	3160	1.52	--	--	--	--	--
BHC, delta	NA	NA	--	--	0.35	--	--
BHC, gamma	4370	7.09	--	--	--	--	--
Chlordane	16200	7210	--	--	--	--	--
4,4'-DDD	24400	8400	--	--	--	--	--
4,4'-DDE	17200	26800	--	12	12	10	0.88
4,4'-DDT	17200	15800	0.34	6.1	6.6	4.8	0.94
Dieldrin	304	2.71	--	--	--	--	--
Endosulfan	360000	14900	--	--	--	--	--
Endrin	18000	745	--	--	--	--	--
Heptachlor	1080	NA	--	--	--	--	--
Heptachlor Epoxide	NA	NA	0.94	--	--	--	--
PCBs (ug/kg)	NA	NA	--	--	--	--	--

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DETECTED IN LF-25 (SWMU 97) SOILS
1992 RFI
CANNON AFB

CONSTITUENTS	NMED Residential SSLs[1]	NMED Soil to Groundwater SSLs (DAF 20)[1]	TRENCHES				
			CAN-17-99 6-8	CAN-97-17-1 4-6	CAN-97-17-S 0-2	CAN-97-18-06 5-7	CAN-97-18-1 4-6
ORGANOCHLORINE PESTICIDES (ug/kg)							
Aldrin	284	294	--	--	5.7	--	4
BHC, alpha	902	0.443	--	--	--	--	--
BHC, beta	3160	1.52	--	--	1.3	--	--
BHC, delta	NA	NA	--	--	--	0.86	0.4
BHC, gamma	4370	7.09	0.31	0.27	--	0.37	--
Chlordane	16200	7210	--	--	--	--	--
4,4'-DDD	24400	8400	--	--	5.9 B	--	0.19
4,4'-DDE	17200	26800	0.83	1.6	0.75	--	0.26
4,4'-DDT	17200	15800	2.3	1.1	5.3	--	--
Dieldrin	304	2.71	--	--	1.2	--	--
Endosulfan	360000	14900	--	--	--	--	--
Endrin	18000	745	--	--	2.5	--	--
Heptachlor	1080	NA	--	--	--	--	--
Heptachlor Epoxide	NA	NA	--	--	--	--	--
PCBs (ug/kg)	NA	NA	--	--	--	--	--

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ORGANOCHLORINE PESTICIDES AND PCBS
DETECTED IN LF-25 (SWMU 97) SOILS
1992 RFI
CANNON AFB

CONSTITUENTS	NMED Residential SSL	NMED Soil to Groundwater SSLs (DAF 20)(1)	TRENCHES				
			CAN-97-18-S 0-2	CAN-97-19-06 5-7	CAN-97-19-1 4-6	CAN-97-19-5 0-2	CAN-97-19-99 0-2
ORGANOCHLORINE PESTICIDES (ug/kg)							
Aldrin	284	294	--	--	--	--	--
BHC, alpha	902	0.443	--	--	--	--	--
BHC, beta	3160	1.52	--	--	--	--	--
BHC, delta	NA	NA	--	--	--	--	--
BHC, gamma	4370	7.09	1.6	0.34	0.31	--	--
Chlordane	16200	7210	--	17	10	--	--
4,4'-DDD	24400	8400	--	0.31	0.86	3.8 B	4.2 B
4,4'-DDE	17200	26800	4.8	17	5.9	2.6	3.5
4,4'-DDT	17200	15800	11	8.5	9.2	8	10
Dieldrin	304	2.71	--	0.37	0.43	--	--
Endosulfan	360000	14900	1.6	--	--	--	--
Endrin	18000	745	--	--	--	--	--
Heptachlor	1080	NA	--	--	--	--	--
Heptachlor Epoxide	NA	NA	--	--	--	--	--
PCBs (ug/kg)	NA	NA	--	--	--	--	--

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ORGANOCHLORINE PESTICIDES AND PCBS
DETECTED IN LF-25 (SWMU 97) SOILS
1992 RFI
CANNON AFB

CONSTITUENTS	NMED Residential SSLs	NMED Soil to Groundwater SSLs (DAF 20)(1)	TRENCHES				
			CAN-97-20-I 4-6	CAN-97-20-S 0-2	CAN-97-21-99 5-7	CAN-97-21-I 4-6	CAN-97-21-S 0-2
ORGANOCHLORINE PESTICIDES (ug/kg)							
Aldrin	284	294	--	--	--	0.27	--
BHC, alpha	902	0.443	--	--	--	--	--
BHC, beta	3160	1.52	--	--	--	--	--
BHC, delta	NA	NA	--	--	--	--	--
BHC, gamma	4370	7.09	--	--	--	--	--
Chlordane	16200	7210	--	--	--	--	--
4,4'-DDD	24400	8400	--	9.9 B	--	--	--
4,4'-DDE	17200	26800	--	1.6	0.42	0.48	0.76
4,4'-DDT	17200	15800	1.1	--	--	--	--
Dieldrin	304	2.71	--	--	--	--	--
Endosulfan	360000	14900	--	38	--	--	--
Endrin	18000	745	--	--	--	--	--
Heptachlor	1080	NA	--	--	--	--	5.9
Heptachlor Epoxide	NA	NA	--	--	--	--	--
PCBs (ug/kg)	NA	NA	--	--	--	--	--

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)

NMED - New Mexico Environment Department
SSL - soil screening level
DAF - dilution attenuation factor
PCB - polychlorinated biphenyl
ug/kg - micrograms per kilogram
-- - not detected
NA - not applicable

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TABLE 5.7

ORGANOCHLORINE PESTICIDES AND PCBS
DETECTED IN LF-25 (SWMU 97) SOILS
1992 RFI
CANNON AFB

CONSTITUENTS	NMED Residential SSLs[1]	NMED Soil to Groundwater SSLs (DAF 20)[1]	BORINGS				
			CAN-97-09-01 0-2	CAN-97-09-02 4-6	CAN-97-10-01 0-2	CAN-97-10-02 4-6	CAN-97-11-01 0-2
ORGANOCHLORINE PESTICIDES (ug/kg)							
Aldrin	284	294	--	--	2.1	--	--
BHC, alpha	902	0.443	--	--	--	--	--
BHC, beta	3160	1.52	--	--	--	--	--
BHC, delta	NA	NA	--	0.51	--	--	--
BHC, gamma	4370	7.09	--	--	--	--	--
Chlordane	16200	7210	12	--	--	--	--
4,4'-DDD	24400	8400	0.35	--	--	0.43 B	--
4,4'-DDE	17200	26800	20	0.29	220	0.21	15
4,4'-DDT	17200	15800	10	--	110	0.61	13
Dieldrin	304	2.71	--	--	--	--	--
Endosulfan	360000	14900	--	--	--	--	--
Endrin	18000	745	--	--	--	--	--
Heptachlor	1080	NA	--	--	--	0.11	--
Heptachlor Epoxide	NA	NA	--	--	1.8	--	--
PCBs (ug/kg)	NA	NA	--	--	--	--	--

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NMED - New Mexico Environment Department
SSL - soil screening level
DAF - dilution attenuation factor
PCB - polychlorinated biphenyl
ug/kg - micrograms per kilogram
-- - not detected
NA - not applicable

Bolded text/shaded cells indicate constituent concentration above one or more screening criteria.

TABLE 5.7

ORGANOCHLORINE PESTICIDES AND PCBS
DETECTED IN LF-25 (SWMU 97) SOILS
1992 RFI
CANNON AFB

CONSTITUENTS	NMED Residential SSLs[1]	NMED Soil to Groundwater SSLs (DAF 20)[1]	BORINGS				
			CAN-97-11-02 4-6	CAN-97-14-01 0-2	CAN-97-14-02 4-6	CAN-97-14-03 9-11	CAN-97-2A-06 8-10
ORGANOCHLORINE PESTICIDES (ug/kg)							
Aldrin	284	294	--	--	0.44	--	--
BHC, alpha	902	0.443	--	--	--	--	--
BHC, beta	3160	1.52	--	--	--	--	--
BHC, delta	NA	NA	--	--	--	0.82	0.68
BHC, gamma	4370	7.09	--	--	--	--	--
Chlordane	16200	7210	--	--	--	--	--
4,4'-DDD	24400	8400	0.8	--	--	0.76	--
4,4'-DDE	17200	26800	--	8.8	--	--	--
4,4'-DDT	17200	15800	--	10	0.93	--	--
Dieldrin	304	2.71	--	--	--	--	--
Endosulfan	360000	14900	--	--	--	--	--
Endrin	18000	745	--	--	--	0.54	--
Heptachlor	1080	NA	--	--	--	0.45	--
Heptachlor Epoxide	NA	NA	--	--	--	--	--
PCBs (ug/kg)	NA	NA	--	--	--	--	--

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)

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ug/kg - micrograms per kilogram
-- - not detected
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TABLE 5.7

ORGANOCHLORINE PESTICIDES AND PCBS
DETECTED IN LF-25 (SWMU 97) SOILS
1992 RFI
CANNON AFB

CONSTITUENTS	NMED Residential SSLs	NMED Soil to Groundwater SSLs (DAF 20)[1]	BORINGS				
			CAN-97-2A-1 4-6	CAN-97-2A-S 0.5-1	CAN-97-2B-06 5-10	CAN-97-2B-99 4-6	CAN-97-2B-S 0.5-1
ORGANOCHLORINE PESTICIDES (ug/kg)							
Aldrin	284	294	--	--	--	--	--
BHC, alpha	902	0.443	--	--	--	--	--
BHC, beta	3160	1.52	--	--	--	--	1.3
BHC, delta	NA	NA	--	--	--	--	--
BHC, gamma	4370	7.09	0.33	--	0.46 B	0.34	--
Chlordane	16200	7210	--	--	--	--	--
4,4'-DDD	24400	8400	--	--	--	--	9.4
4,4'-DDE	17200	26800	1	8.9	--	--	10
4,4'-DDT	17200	15800	--	37	--	1.4	30
Dieldrin	304	2.71	--	--	--	--	--
Endosulfan	360000	14900	--	--	--	--	--
Endrin	18000	745	--	--	--	--	--
Heptachlor	1080	NA	--	--	--	--	--
Heptachlor Epoxide	NA	NA	--	--	--	--	--
PCBs (ug/kg)	NA	NA	--	--	--	--	--

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)

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TABLE 5.7

ORGANOCHLORINE PESTICIDES AND PCBS
DETECTED IN LF-25 (SWMU 97) SOILS
1992 RFI
CANNON AFB

CONSTITUENTS	NMED Residential SSLs	NMED Soil to Groundwater SSLs (DAF 20)(1)	BORINGS				
			CAN-97-3B-06 8-10	CAN-97-3B-1 4-6	CAN-97-5B-5 10-12	CAN-97-4A-06 8-10	CAN-97-4A-1 4-6
ORGANOCHLORINE PESTICIDES (ug/kg)							
Aldrin	284	294	--	--	--	--	--
BHC, alpha	902	0.443	--	--	--	--	--
BHC, beta	3160	1.52	--	--	--	--	--
BHC, delta	NA	NA	--	--	--	--	--
BHC, gamma	4370	7.09	--	--	--	--	--
Chlordane	16200	7210	--	--	--	--	--
4,4'-DDD	24400	8400	0.43	--	0.59	0.41 B	0.39 B
4,4'-DDE	17200	26800	0.059	--	--	--	0.097
4,4'-DDT	17200	15800	--	0.83	1.1	0.53	0.4
Dieldrin	304	2.71	--	--	--	--	--
Endosulfan	360000	14900	--	0.078	--	--	--
Endrin	18000	745	--	--	--	--	--
Heptachlor	1080	NA	0.1	--	--	0.11	0.041
Heptachlor Epoxide	NA	NA	--	--	0.45	--	--
PCBs (ug/kg)	NA	NA	--	--	--	--	--

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DAF - dilution attenuation factor
PCB - polychlorinated biphenyl
ug/kg - micrograms per kilogram
-- - not detected
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TABLE 5.7

ORGANOCHLORINE PESTICIDES AND PCBS
DETECTED IN LF-25 (SWMU 97) SOILS
1992 RFI
CANNON AFB

CONSTITUENTS	NMED Residential SSLs[1]	NMED Soil to Groundwater SSLs (DAF 20)[1]	BORINGS				
			CAN-97-4A-S 0.5-1	CAN-97-4A-99 0.5-1	CAN-97-4B-06 8-10	CAN-97-4E-S 0-2	CAN-97-8A-06 8-10
ORGANOCHLORINE PESTICIDES (ug/kg)							
Aldrin	284	294	1.2	1.3	--	--	--
BHC, alpha	902	0.443	--	--	--	--	--
BHC, beta	3160	1.52	--	--	--	--	--
BHC, delta	NA	NA	0.54	0.97	--	--	1
BHC, gamma	4370	7.09	3.5	--	--	--	--
Chlordane	16200	7210	--	--	--	--	--
4,4'-DDD	24400	8400	0.43 B	--	0.4	--	--
4,4'-DDE	17200	26800	0.5	1.2	0.059	6.1	--
4,4'-DDT	17200	15800	1.6	0.84	0.46	3.8	0.62
Dieldrin	304	2.71	0.15	--	--	--	--
Endosulfan	360000	14900	--	--	--	--	--
Endrin	18000	745	--	--	0.13	--	--
Heptachlor	1080	NA		--	0.057	--	0.16
Heptachlor Epoxide	NA	NA	0.7	0.86	--	--	9.6
PCBs (ug/kg)	NA	NA	--	--	--	--	--

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ug/kg - micrograms per kilogram
-- - not detected
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TABLE 5.7

ORGANOCHLORINE PESTICIDES AND PCBS
DETECTED IN LF-25 (SWMU 97) SOILS
1992 RFI
CANNON AFB

CONSTITUENTS	NMED Residential SSL[1]	NMED Soil to Groundwater SSLs (DAF 20)[1]	BORINGS				
			CAN-97-8A-1 4-6	CAN-97-8A-S 0.5-1	CAN-97-8B-01 4-6	CAN-97-09-06 24-26	CAN-97-09-99 24-26
ORGANOCHLORINE PESTICIDES (ug/kg)							
Aldrin	284	294	--	--	--	--	--
BHC, alpha	902	0.443	--	--	--	--	--
BHC, beta	3160	1.52	--	--	--	--	--
BHC, delta	NA	NA	--	--	0.42	--	--
BHC, gamma	4370	7.09	0.36	--	--	--	--
Chlordane	16200	7210	--	--	9.4	--	--
4,4'-DDD	24400	8400	0.028	--	1.1	0.41	--
4,4'-DDE	17200	26800	17	35	16	1.4	1.6
4,4'-DDT	17200	15800	8.4	19	41	0.99	1
Dieldrin	304	2.71	--	--	--	--	--
Endosulfan	360000	14900	--	--	--	--	--
Endrin	18000	745	--	--	--	--	--
Heptachlor	1080	NA	--	--	--	--	--
Heptachlor Epoxide	NA	NA	--	--	--	--	0.24
PCBs (ug/kg)	NA	NA	--	--	--	--	--

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DAF - dilution attenuation factor
PCB - polychlorinated biphenyl
ug/kg - micrograms per kilogram
-- - not detected
NA - not applicable

Bolded text/shaded cells indicate constituent concentration above one or more screening criteria.

TABLE 5.7

ORGANOCHLORINE PESTICIDES AND PCBS
DETECTED IN LF-25 (SWMU 97) SOILS
1992 RFI
CANNON AFB

CONSTITUENTS	NMED Residential SSLs[1]	NMED Soil to Groundwater SSLs (DAF 20)[1]	BORINGS				
			CAN-97-09-10 44-46	CAN-97-10-04 14-16	CAN-97-10-99 19-21	CAN-97-10-06 24-26	CAN-97-10-07 29-31
ORGANOCHLORINE PESTICIDES (ug/kg)							
Aldrin	284	294	--	--	--	--	--
BHC, alpha	902	0.443	--	--	--	--	--
BHC, beta	3160	1.52	--	--	--	--	--
BHC, delta	NA	NA	0.41	--	--	--	--
BHC, gamma	4370	7.09	0.28	--	--	--	--
Chlordane	16200	7210	--	--	--	--	--
4,4'-DDD	24400	8400	--	0.4 B	0.46 B	--	0.39 B
4,4'-DDE	17200	26800	3	1.2	--	0.68	--
4,4'-DDT	17200	15800	--	0.83	0.73	0.34	0.17
Dieldrin	304	2.71	--	--	--	--	--
Endosulfan	360000	14900	--	--	--	--	--
Endrin	18000	745	0.022	--	0.17	--	--
Heptachlor	1080	NA	--	--	0.1	--	--
Heptachlor Epoxide	NA	NA	--	--	--	0.34	--
PCBs (ug/kg)	NA	NA	--	--	--	--	--

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ug/kg - micrograms per kilogram
-- - not detected
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TABLE 5.7

ORGANOCHLORINE PESTICIDES AND PCBS
DETECTED IN LF-25 (SWMU 97) SOILS
1992 RFI
CANNON AFB

CONSTITUENTS	NMED Residential SSL[1]	NMED Soil to Groundwater SSL (DAF 20)[1]	BORINGS				
			CAN-97-10-08 34-36	CAN-97-10-09 39-41	CAN-97-10-10 44-46	CAN-97-10-11 49-51	CAN-97-10-12 54-56
ORGANOCHLORINE PESTICIDES (ug/kg)							
Aldrin	284	294	--	--	--	--	--
BHC, alpha	902	0.443	--	--	--	--	--
BHC, beta	3160	1.52	--	--	--	--	--
BHC, delta	NA	NA	--	--	--	--	--
BHC, gamma	4370	7.09	--	--	--	--	--
Chlordane	16200	7210	--	--	--	--	--
4,4'-DDD	24400	8400	0.39 B	0.38 B	0.38 B	0.4 B	0.44 B
4,4'-DDE	17200	26800	--	--	--	0.064	--
4,4'-DDT	17200	15800	0.42	--	0.42	0.51	0.63
Dieldrin	304	2.71	--	--	--	--	--
Endosulfan	360000	14900	--	--	--	--	0.073
Endrin	18000	745	--	--	--	0.13	--
Heptachlor	1080	NA	--	--	--	0.082	0.12
Heptachlor Epoxide	NA	NA	--	--	--	--	--
PCBs (ug/kg)	NA	NA	--	--	--	--	--

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DAF - dilution attenuation factor
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ug/kg - micrograms per kilogram
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NA - not applicable

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TABLE 5.7

ORGANOCHLORINE PESTICIDES AND PCBS
DETECTED IN LF-25 (SWMU 97) SOILS
1992 RFI
CANNON AFB

CONSTITUENTS	NMED Residential SSLs[1]	NMED Soil to Groundwater SSLs (DAF 20)[1]	BORINGS				
			CAN-97-10-13 59-61	CAN-97-11-04 14-16	CAN-97-11-07 29-31	CAN-97-11-99 39-41	CAN-97-11-10 46-48
ORGANOCHLORINE PESTICIDES (ug/kg)							
Aldrin	284	294	--	--	--	--	--
BHC, alpha	902	0.443	--	--	--	--	--
BHC, beta	3160	1.52	--	--	0.2	--	--
BHC, delta	NA	NA	--	--	--	--	--
BHC, gamma	4370	7.09	--	--	--	--	--
Chlordane	16200	7210	--	--	--	--	--
4,4'-DDD	24400	8400	0.4 B	--	0.8	0.74	0.8
4,4'-DDE	17200	26800	--	--	0.51	--	--
4,4'-DDT	17200	15800	--	0.95	0.92	--	1
Dieldrin	304	2.71	--	--	--	--	--
Endosulfan	360000	14900	--	--	--	--	--
Endrin	18000	745	0.11	--	--	--	0.53
Heptachlor	1080	NA	0.0066		0.26	--	0.31
Heptachlor Epoxide	NA	NA	--	--	--	--	--
PCBs (ug/kg)	NA	NA	--	--	--	--	--

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ug/kg - micrograms per kilogram
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TABLE 5.7

ORGANOCHLORINE PESTICIDES AND PCBS
DETECTED IN LF-25 (SWMU 97) SOILS
1992 RFI
CANNON AFB

CONSTITUENTS	NMED Residential SSLs[1]	NMED Soil to Groundwater SSLs (DAF 20)[1]	BORINGS				
			CAN-97-11-11 51-53	CAN-97-14-09 39-41	CAN-97-14-10 44-46	CAN-97-14-13 59-61	CAN-97-3C-01 12-14
ORGANOCHLORINE PESTICIDES (ug/kg)							
Aldrin	284	294	--	--	0.47	--	3
BHC, alpha	902	0.443	--	--	--	--	2.4
BHC, beta	3160	1.52	--	--	0.22	--	--
BHC, delta	NA	NA	--	--	--	--	--
BHC, gamma	4370	7.09	--	--	--	--	7.5
Chlordane	16200	7210	--	--	--	--	--
4,4'-DDD	24400	8400	--	--	--	--	3
4,4'-DDE	17200	26800	--	--	--	--	--
4,4'-DDT	17200	15800	0.82	1.2	0.91	1	--
Dieldrin	304	~~2.71~~ 26 [illegible]	--	--	--	--	**9.2**
Endosulfan	360000	14900	--	--	--	--	--
Endrin	18000	745	--	--	--	--	1.9
Heptachlor	1080	NA	0.31	--	--	--	5.8
Heptachlor Epoxide	NA	NA	--	--	--	--	2.5
PCBs (ug/kg)	NA	NA	--	--	--	--	--

ok, no problem

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ug/kg - micrograms per kilogram
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TABLE 5.7

ORGANOCHLORINE PESTICIDES AND PCBS
DETECTED IN LF-25 (SWMU 97) SOILS
1992 RFI
CANNON AFB

CONSTITUENTS	NMED Residential SSLs[1]	NMED Soil to Groundwater SSLs (DAF 20)[1]	BORINGS				
			CAN-97-3C-02 18-20	CAN-97-3C-04 28-30	CAN-97-3C-05 33-35	CAN-97-3C-06 38-40	CAN-97-3C-99 38-40
ORGANOCHLORINE PESTICIDES (ug/kg)							
Aldrin	284	294	--	--	--	--	--
BHC, alpha	902	0.443	--	--	--	--	--
BHC, beta	3160	1.52 15.2	4.3	4.8	0.95	--	4.7
BHC, delta	NA	NA	--	--	--	--	--
BHC, gamma	4370	7.09	--	--	--	--	--
Chlordane	16200	7210	--	--	--	--	--
4,4'-DDD	24400	8400	--	--	--	--	--
4,4'-DDE	17200	26800	--	--	--	0.41	--
4,4'-DDT	17200	15800	--	--	--	0.52	--
Dieldrin	304	2.71	--	--	--	--	--
Endosulfan	360000	14900	--	--	--	--	--
Endrin	18000	745	--	0.37	0.52	--	--
Heptachlor	1080	NA	--	--	--	--	--
Heptachlor Epoxide	NA	NA	0.21	--	--	--	--
PCBs (ug/kg)	NA	NA	--	--	--	--	--

ok, no problem

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ug/kg - micrograms per kilogram
-- - not detected
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TABLE 5.7

ORGANOCHLORINE PESTICIDES AND PCBS
DETECTED IN LF-25 (SWMU 97) SOILS
1992 RFI
CANNON AFB

CONSTITUENTS	NMED Residential SSLs[2]	NMED Soil to Groundwater SSLs (DAF 20)[1]	BORINGS				
			CAN-97-3C-08 48-50	CAN-97-3C-09 53-55	CAN-97-8B-03 14-16	CAN-97-8B-04 19-21	CAN-97-8B-05 24-26
ORGANOCHLORINE PESTICIDES (ug/kg)							
Aldrin	284	294	--	--	--	--	--
BHC, alpha	902	0.443	--	--	--	--	--
BHC, beta	3160	~~1.52~~ 15	**9.9**	**12**	--	--	--
BHC, delta	NA	NA	--	--	--	--	--
BHC, gamma	4370	7.09	--	--	--	--	--
Chlordane	16200	7210	--	--	--	--	--
4,4'-DDD	24400	8400	--	--	0.55	0.42	0.4
4,4'-DDE	17200	26800	--	--	--	0.072	0.0751
4,4'-DDT	17200	15800	--	0.49	0.97	0.55	0.34
Dieldrin	304	2.71	--	--	0.15	--	--
Endosulfan	360000	14900	--	--	--	--	--
Endrin	18000	745	--	--	0.28	0.13	0.11
Heptachlor	1080	NA	--	--	0.16	0.06	0.067
Heptachlor Epoxide	NA	NA	0.21	0.26	--	--	--
PCBs (ug/kg)	NA	NA	--	--	--	--	--

no problem

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ug/kg - micrograms per kilogram
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TABLE 5.7

ORGANOCHLORINE PESTICIDES AND PCBS
DETECTED IN LF-25 (SWMU 97) SOILS
1992 RFI
CANNON AFB

CONSTITUENTS	NMED Residential SSLs[1]	NMED Soil to Groundwater SSLs (DAF 20)[1]	BORINGS				
			CAN-97-SB-06 29-31	CAN-97-SB-07 34-36	CAN-97-SB-10 49-51	CAN-97-SB-11 54-56	CAN-97-SB-13 64-66
ORGANOCHLORINE PESTICIDES (ug/kg)							
Aldrin	284	294	--	--	--	--	--
BHC, alpha	902	0.443	--	--	--	--	--
BHC, beta	3160	1.52	--	--	--	--	--
BHC, delta	NA	NA	--	--	--	--	--
BHC, gamma	4370	7.09	--	--	--	--	--
Chlordane	16200	7210	--	--	--	--	--
4,4'-DDD	24400	8400	0.43	--	0.41	0.39	0.41
4,4'-DDE	17200	26800	--	0.43	--	--	0.066
4,4'-DDT	17200	15800	--	0.62	--	--	--
Dieldrin	304	2.71	--	--	--	--	--
Endosulfan	360000	14900	--	--	0.09	--	--
Endrin	18000	745	--	--	0.11	0.1	0.12
Heptachlor	1080	NA	0.12	--	0.057	0.016	0.078
Heptachlor Epoxide	NA	NA	--	0.17	--	--	--
PCBs (ug/kg)	NA	NA	--	--	--	--	--

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SSL - soil screening level
DAF - dilution attenuation factor
PCB - polychlorinated biphenyl
ug/kg - micrograms per kilogram
-- - not detected
NA - not applicable

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TABLE 5.8

METALS FOUND AT CONCENTRATIONS GREATER THAN THE BACKGROUND SOIL UPPER TOLERANCE LIMITS
IN LF-25 (SWMU 97) SOILS
1992 RFI
CANNON AFB

	NMED Residential SSLs(1)	NMED Soil to Groundwater SSLs (DAF 20)(1)	Background	TRENCHES					
				CAN-97-12-I 4-6	CAN-97-12-S 0-2	CAN-97-13-06 5-7	CAN-97-13-I 4-5	CAN-97-13-S 0-2	CAN-97-13-99 0-2
METALS (mg/kg)									
Aluminum	77,800	150,000	15,100	--	18,000	--	--	--	--
Arsenic	3.9	58.3	8.65	--	--	--	--	--	--
Barium	5,450	823	860	--	--	--	--	--	--
Beryllium	156	63.2	0.62	--	0.62	--	--	--	--
Cadmium	74.1	7.52	0.61	--	--	1.1	--	--	--
Calcium	NA	NA	290,000	--	--	--	--	--	--
Chromium	234	19.2	10.5	12	15	--	13	13	12
Cobalt	1520	45.2	3.9	--	4.2	4	4.3	4	--
Copper	3,130	703	5.7	7.5	8.2	--	7.8	7.3	7
Iron	23,500	~~65.4~~ 5,540	8,840	**10,000**	**13,000**	--	**11,000**	**11,000**	**10,000**
Lead	400	~~9.17~~ N/A	9.15	--	**16**	--	--	**19.3**	--
Magnesium	NA	NA	10,700	--	--	--	--	--	--
Manganese	1,550 3,590	~~1.05~~ 2,340	140	**180**	**210**	--	**210**	**230**	**210**
Mercury	6.11	NA	0.08	--	--	--	--	--	--
Molybdenum	391	403	0.69	--	--	--	--	--	--
Potassium	NA	NA	2,850	--	--	--	--	--	--
Selenium	391	5.17	1.2	--	--	--	--	--	--
Silver	391	8.47	0.84	--	--	--	--	--	--
Sodium	NA	NA	317	--	--	--	--	--	--
Vanadium	5.48	807	24.6	--	29	--	--	--	--
Zinc	23,500	12,400	21.8	27	31	--	26	28	27

problem

no problem

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)

NMED - New Mexico Environment Department
SSL - soil screening level
DAF - dilution attenuation factor
mg/kg - milligrams per kilogram
-- - not detected
NA - not applicable

Bolded text/shaded cells indicate constituent concentration above one or more screening criteria.

TABLE 5.8

METALS FOUND AT CONCENTRATIONS GREATER THAN THE BACKGROUND SOIL UPPER TOLERANCE LIMITS
IN LF-25 (SWMU 97) SOILS
1992 RFI
CANNON AFB

	NMED Residential SSLs (1)	NMED Soil to Groundwater SSLs (DAF 20) (1)	Background	TRENCHES				
				CAN-97-15-06 6-8	CAN-97-15-I 4-6	CAN-97-15-S 0-2	CAN-97-16-06 5-7	CAN-97-16-I 4-6
METALS (mg/kg)								
Aluminum	77,800	150,000	15,100	--	--	--	--	--
Arsenic	3.9	58.3	8.65	--	--	--	--	--
Barium	5,450	823	860	--	--	--	--	--
Beryllium	156	63.2	0.62	--	--	--	--	--
Cadmium	74.1	7.52	0.61	--	--	1.2	1.7	--
Calcium	NA	NA	290,000	--	--	640,000	--	--
Chromium	234	19.2	10.5	--	13	11	--	14
Cobalt	1520	45.2	3.9	--	4.4	--	--	4.4
Copper	3,130	703	5.7	--	7	7.8	--	8.1
Iron	23,500	65.4	8,840	**9,100**	**12,000**	**9,200**	--	**12,000**
Lead	400	9.17	9.15	--	--	**25**	--	--
Magnesium	NA	NA	10,700	--	--	--	--	--
Manganese	1,550	1.05	140	--	**220**	**200**	--	**250**
Mercury	6.11	NA	0.08	--	--	--	--	--
Molybdenum	391	403	0.69	--	0.9	--	--	--
Potassium	NA	NA	2,850	--	--	--	--	--
Selenium	391	5.17	1.2	--	--	--	--	--
Silver	391	8.47	0.84	--	--	--	--	--
Sodium	NA	NA	317	--	--	--	--	--
Vanadium	5.48	807	24.6	27	--	--	--	--
Zinc	23,500	12,400	21.8	--	27	36	22	30

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)

NMED - New Mexico Environment Department
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DAF - dilution attenuation factor
mg/kg - milligrams per kilogram
-- - not detected
NA - not applicable

Bolded text/shaded cells indicate constituent concentration above one or more screening criteria.

TABLE 5.8

METALS FOUND AT CONCENTRATIONS GREATER THAN THE BACKGROUND SOIL UPPER TOLERANCE LIMITS IN LF-25 (SWMU 97) SOILS
1992 RFI
CANNON AFB

	NMED Residential SSLs	NMED Soil to Groundwater SSLs (DAF 20)(1)	Background	TRENCHES				
				CAN-97-16-99 0-0	CAN-97-16-S 0-2	CAN-17-06 6-8	CAN-97-17-D 4-6	CAN-97-17-S 0-2
METALS (mg/kg)								
Aluminum	77,800	150,000	15,100	--	--	--	--	--
Arsenic	3.9	58.3	8.65	--	--	--	--	**9.0**
Barium	5,450	823	860	--	--	--	--	--
Beryllium	156	63.2	0.62	--	--	--	--	--
Cadmium	74.1	7.52	0.61	--	--	--	--	--
Calcium	NA	NA	290,000	--	--	--	--	--
Chromium	234	19.2	10.5	13	14	--	14	--
Cobalt	1520	45.2	3.9	4.5	4.1	--	4.6	--
Copper	3,130	703	5.7	7.9	7.6	--	7.5	--
Iron	23,500	65.4	8,840	**11,000**	**12,000**	**9,100**	**12,000**	--
Lead	400	9.17	9.15	--	**11**	--	--	**120**
Magnesium	NA	NA	10,700	--	--	--	--	--
Manganese	1,550	1.05	140	**240**	**230**	--	**240**	**460**
Mercury	6.11	NA	0.08	--	--	--	--	0.098
Molybdenum	391	403	0.69	0.78	--	--	0.88	--
Potassium	NA	NA	2,850	--	2,900	--	--	--
Selenium	391	5.17	1.2	--	--	--	--	--
Silver	391	8.47	0.84	--	--	--	--	--
Sodium	NA	NA	317	--	--	--	--	--
Vanadium	5.48	807	24.6	--	25	--	25	--
Zinc	23,500	12,400	21.8	29	33	--	28	--

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)

NMED - New Mexico Environment Department
SSL - soil screening level
DAF - dilution attenuation factor
mg/kg - milligrams per kilogram
-- - not detected
NA - not applicable

Bolded text/shaded cells indicate constituent concentration above one or more screening criteria.

TABLE 5.8

METALS FOUND AT CONCENTRATIONS GREATER THAN THE BACKGROUND SOIL UPPER TOLERANCE LIMITS IN LF-25 (SWMU 97) SOILS
1992 RFI
CANNON AFB

	NMED Residential SSL[1]	NMED Soil to Groundwater SSL (DAF 20)[1]	Background	TRENCHES				
				CAN-97-18-06 5-7	CAN-97-18-1 4-6	CAN-97-18-8 0-2	CAN-97-19-06 5-7	CAN-97-19-1 4-6
METALS (mg/kg)								
Aluminum	77,800	150,000	15,100	--	21,000	--	16,000	--
Arsenic	3.9	58.3	8.65	--	--	--	--	--
Barium	5,450	823	860	--	--	--	--	--
Beryllium	156	63.2	0.62	--	0.76	--	--	--
Cadmium	74.1	7.52	0.61	--	--	--	--	--
Calcium	NA	NA	290,000	--	--	--	--	--
Chromium	234	19.2	10.5	--	17	--	13	--
Cobalt	1520	45.2	3.9	--	5	--	--	--
Copper	3,130	703	5.7	--	9.6	7	6.7	6.7
Iron	23,500	65.4	8,840	**10,000**	**15,000**	**9,300**	**11,000**	**9,100**
Lead	400	9.17	9.15	--	--	**14**	--	--
Magnesium	NA	NA	10,700	--	--	--	--	--
Manganese	1,550	1.05	140	--	**230**	**210**	**150**	**150**
Mercury	6.11	NA	0.08	--	--	--	--	--
Molybdenum	391	403	0.69	0.82	--	--	0.73	--
Potassium	NA	NA	2,850	--	3,100	--	--	--
Selenium	391	5.17	1.2	--	--	--	--	--
Silver	391	8.47	0.84	--	--	--	--	--
Sodium	NA	NA	317	--	--	--	--	--
Vanadium	5.48	807	24.6	26	32	--	--	--
Zinc	23,500	12,400	21.8	--	35	26	28	33

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)

NMED - New Mexico Environment Department
SSL - soil screening level
DAF - dilution attenuation factor
mg/kg - milligrams per kilogram
-- - not detected
NA - not applicable

Bolded text/shaded cells indicate constituent concentration above one or more screening criteria.

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METALS FOUND AT CONCENTRATIONS GREATER THAN THE BACKGROUND SOIL UPPER TOLERANCE LIMITS
IN LF-25 (SWMU 97) SOILS
1992 RFI
CANNON AFB

	NMED Residential SSLs[1]	NMED Soil to Groundwater SSLs (DAF 20)[1]	Background	TRENCHES				
				CAN-97-19-S 0-2	CAN-97-19-99 0-2	CAN-97-20-06 7-9	CAN-97-20-11 4-6	CAN-97-20-S 0-2
METALS (mg/kg)								
Aluminum	77,800	150,000	15,100	--	--	--	18,000	--
Arsenic	3.9	58.3	8.65	--	--	--	--	--
Barium	5,450	823	860	--	--	--	--	--
Beryllium	156	63.2	0.62	--	--	--	0.63	--
Cadmium	74.1	7.52	0.61	--	--	--	--	--
Calcium	NA	NA	290,000	--	--	--	--	--
Chromium	234	19.2	10.5	12	--	12	15	11
Cobalt	1520	45.2	3.9	--	--	4	4.3	--
Copper	3,130	703	5.7	6.7	--	6.4	7.8	10
Iron	23,500	65.4	8,840	**9,900**	--	**11,000**	**13,000**	**9,900**
Lead	400	9.17	9.15	**16**	--	--	--	23
Magnesium	NA	NA	10,700	--	--	--	--	--
Manganese	1,550	1.05	140	**200**	**650**	--	**170**	**300**
Mercury	6.11	NA	0.08	--	--	--	--	--
Molybdenum	391	403	0.69	--	--	--	1.1	--
Potassium	NA	NA	2,850	--	--	--	--	--
Selenium	391	5.17	1.2	--	--	--	--	--
Silver	391	8.47	0.84	--	--	--	--	--
Sodium	NA	NA	317	--	--	--	--	--
Vanadium	5.48	807	24.6	--	--	--	27	--
Zinc	23,500	12,400	21.8	130	--	24	32	63

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)

NMED - New Mexico Environment Department
SSL - soil screening level
DAF - dilution attenuation factor
mg/kg - milligrams per kilogram
-- - not detected
NA - not applicable

Bolded text/shaded cells indicate constituent concentration above one or more screening criteria.

TABLE 5.8

METALS FOUND AT CONCENTRATIONS GREATER THAN THE BACKGROUND SOIL UPPER TOLERANCE LIMITS
IN LF-25 (SWMU 97) SOILS
1992 RFI
CANNON AFB

	NMED Residential SSL[1]	NMED Soil to Groundwater SSLs (DAF 20)[1]	Background	TRENCHES	BORINGS			
				CAN-97-21-06	CAN-97-09-01	CAN-97-10-01	CAN-97-11-01	CAN-97-11-03
				5-7	0-2	0-2	0-2	9-11
METALS (mg/kg)								
Aluminum	77,800	150,000	15,100	17,000	--	--	--	--
Arsenic	3.9	58.3	8.65	--	--	--	--	--
Barium	5,450	823	860	--	--	--	--	--
Beryllium	156	63.2	0.62	0.62	--	--	--	--
Cadmium	74.1	7.52	0.61	--	--	--	--	--
Calcium	NA	NA	290,000	--	--	--	--	--
Chromium	234	19.2	10.5	14	--	--	15	--
Cobalt	1520	45.2	3.9	4.4	--	--	4.1	--
Copper	3,130	703	5.7	6.6	5.7	--	8.8	--
Iron	23,500	65.4	8,840	**12,000**	--	--	**12,000**	--
Lead	400	9.17	9.15	--	--	**9.2**	**9.2**	--
Magnesium	NA	NA	10,700	--	--	--	--	--
Manganese	1,550	1.05	140	**140**	--	--	**220**	--
Mercury	6.11	NA	0.08	--	--	--	--	--
Molybdenum	391	403	0.69	0.8	0.8	--	--	--
Potassium	NA	NA	2,850	--	--	--	3,200	--
Selenium	391	5.17	1.2	--	--	--	--	--
Silver	391	8.47	0.84	--	--	--	--	--
Sodium	NA	NA	317	--	--	--	--	--
Vanadium	5.48	807	24.6	26	--	--	--	--
Zinc	23,500	12,400	21.8	27	--	22	34	23

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DAF - dilution attenuation factor
/mg/kg - milligrams per kilogram
-- - not detected
NA - not applicable

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TABLE 5.8

METALS FOUND AT CONCENTRATIONS GREATER THAN THE BACKGROUND SOIL UPPER TOLERANCE LIMITS IN LF-25 (SWMU 97) SOILS
1992 RFI
CANNON AFB

	NMED Residential SSLs (1)	NMED Soil to Groundwater SSLs (DAF 20) (1)	Background	BORINGS				
				CAN-97-14-01 0-2	CAN-97-14-02 4-6	CAN-97-2A-06 8-10	CAN-97-2A-1S 4-6	CAN-97-2A-S 0.5-1
METALS (mg/kg)								
Aluminum	77,800	150,000	15,100	--	--	--	--	--
Arsenic	3.9	58.3	8.65	--	--	--	--	--
Barium	5,450	823	860	--	--	--	--	--
Beryllium	156	63.2	0.62	--	--	--	--	--
Cadmium	74.1	7.52	0.61	--	--	--	--	--
Calcium	NA	NA	290,000	--	--	--	--	--
Chromium	234	19.2	10.5	11	--	--	--	11
Cobalt	1520	45.2	3.9	4.1	--	--	--	--
Copper	3,130	703	5.7	7.5	--	--	--	5.9
Iron	23,500	65.4	8,840	**10,000**	--	--	--	**8,900**
Lead	400	9.17	9.15	--	--	--	--	--
Magnesium	NA	NA	10,700	--	--	--	--	--
Manganese	1,550	1.05	140	**240**	--	--	--	**170**
Mercury	6.11	NA	0.08	--	--	--	--	--
Molybdenum	391	403	0.69	--	--	--	--	--
Potassium	NA	NA	2,850	--	--	--	--	--
Selenium	391	5.17	1.2	--	1.3	1.9	1.7	1.3
Silver	391	8.47	0.84	--	--	--	--	--
Sodium	NA	NA	317	--	--	--	--	--
Vanadium	5.48	807	24.6	--	--	--	--	--
Zinc	23,500	12,400	21.8	26	--	--	--	23

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)

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SSL - soil screening level
DAF - dilution attenuation factor
mg/kg - milligrams per kilogram
-- - not detected
NA - not applicable

Bolded text/shaded cells indicate constituent concentration above one or more screening criteria.

TABLE 5.8

METALS FOUND AT CONCENTRATIONS GREATER THAN THE BACKGROUND SOIL UPPER TOLERANCE LIMITS IN LF-25 (SWMU 97) SOILS
1992 RFI
CANNON AFB

				BORINGS				
	NMED Residential SSLs[1]	NMED Soil to Groundwater SSLs (DAF 20)[1]	Background	CAN-97-2B-06 8-10	CAN-97-2B-99 4-6	CAN-97-2B-S 0-5-1	CAN-97-3B-06 8-10	CAN-97-3B-S 0-2
METALS (mg/kg)								
Aluminum	77,800	150,000	15,100	--	--	--	--	--
Arsenic	3.9	58.3	8.65	--	--	--	--	--
Barium	5,450	823	860	--	--	--	--	--
Beryllium	156	63.2	0.62	--	--	--	0.71	0.62
Cadmium	74.1	7.52	0.61	--	--	--	--	--
Calcium	NA	NA	290,000	--	--	--	--	--
Chromium	234	19.2	10.5	--	--	11	--	11
Cobalt	1520	45.2	3.9	--	--	--	--	4
Copper	3,130	703	5.7	--	--	--	--	--
Iron	23,500	65.4	8,840	--	--	--	--	**9,500**
Lead	400	9.17	9.15	--	--	--	--	--
Magnesium	NA	NA	10,700	--	--	--	--	--
Manganese	1,550	1.05	140	--	--	**140**	--	--
Mercury	6.11	NA	0.08	--	--	--	--	--
Molybdenum	391	403	0.69	--	--	--	--	--
Potassium	NA	NA	2,850	--	--	--	--	--
Selenium	391	5.17	1.2	1.7	1.8	1.3	--	--
Silver	391	8.47	0.84	--	--	--	--	--
Sodium	NA	NA	317	--	--	--	--	--
Vanadium	5.48	807	24.6	--	--	--	--	26
Zinc	23,500	12,400	21.8	--	--	22	--	23

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mg/kg - milligrams per kilogram
-- - not detected
NA - not applicable

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TABLE 5.8

METALS FOUND AT CONCENTRATIONS GREATER THAN THE BACKGROUND SOIL UPPER TOLERANCE LIMITS
IN LF-25 (SWMU 97) SOILS
1992 RFI
CANNON AFB

	NMED Residential SSLs	NMED Soil to Groundwater SSLs (DAF 20)[1]	Background	BORINGS				
				CAN-97-4A-1 4-6	CAN-97-4A-S 0.5-1	CAN-97-4A-99 0.5-1	CAN-97-4B-S 0-2	CAN-97-8A-06 8-10
METALS (mg/kg)								
Aluminum	77,800	150,000	15,100	--	--	--	--	--
Arsenic	3.9	58.3	8.65	--	--	--	--	--
Barium	~~5,450~~ 15,000	~~823~~ 6,030	860	**1,000**	--	--	--	--
Beryllium	156	63.2	0.62	--	--	--	--	--
Cadmium	74.1	7.52	0.61	--	--	--	--	--
Calcium	NA	NA	290,000	--	--	--	--	--
Chromium	234	19.2	10.5	--	--	--	11	--
Cobalt	1520	45.2	3.9	--	--	--	--	--
Copper	3,130	703	5.7	--	--	--	--	--
Iron	23,500	65.4	8,840	--	**9,000**	**9,200**	--	--
Lead	400	9.17	9.15	--	--	--	--	--
Magnesium	NA	NA	10,700	--	--	--	--	--
Manganese	1,550	1.05	140	--	**150**	**160**	**140**	--
Mercury	6.11	NA	0.08	--	--	--	--	--
Molybdenum	391	403	0.69	--	--	--	--	--
Potassium	NA	NA	2,850	--	--	--	--	--
Selenium	391	5.17	1.2	--	--	--	--	--
Silver	391	8.47	0.84	--	--	--	--	--
Sodium	NA	NA	317	--	--	--	--	380
Vanadium	5.48	807	24.6	--	--	--	--	--
Zinc	23,500	12,400	21.8	--	--	--	24	--

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SSL - soil screening level
DAF - dilution attenuation factor
mg/kg - milligrams per kilogram
-- - not detected
NA - not applicable

Bolded text/shaded cells indicate constituent concentration above one or more screening criteria.

TAB[illegible]5.8

METALS FOUND AT CONCENTRATIONS GREATER THAN THE BACKGROUND SOIL UPPER TOLERANCE LIMITS
IN LF-25 (SWMU 97) SOILS
1992 RFI
CANNON AFB

	NMED Residential SSL[1]	NMED Soil to Groundwater SSL[1] (DAF 20)[1]	Background	BORINGS				
				CAN-97-8A-1 4-6	CAN-97-8A-S 0.5-1	CAN-97-8B-01 4-6	CAN-97-8B-02 8-10	CAN-97-BG-01 0-2
METALS (mg/kg)								
Aluminum	77,800	150,000	15,100	--	17,000	--	--	--
Arsenic	3.9	58.3	8.65	--	--	--	--	--
Barium	5,450	823	860	**1,100**	--	**1,700**	--	--
Beryllium	156	63.2	0.62	--	--	--	--	--
Cadmium	74.1	7.52	0.61	--	0.87	--	--	--
Calcium	NA	NA	290,000	--	--	--	--	--
Chromium	234	19.2	10.5	--	14	--	--	--
Cobalt	1520	45.2	3.9	--	--	--	--	--
Copper	3,130	703	5.7	--	13	--	--	--
Iron	23,500	65.4	8,840	--	**11,000**	--	--	--
Lead	400	9.17	9.15	--	**14**	--	--	**9.7**
Magnesium	NA	NA	10,700	--	--	--	--	--
Manganese	1,550	1.05	140	--	**160**	--	--	**140**
Mercury	6.11	NA	0.08	--	--	--	--	--
Molybdenum	391	403	0.69	--	--	--	--	--
Potassium	NA	NA	2,850	--	29,000	--	--	--
Selenium	391	5.17	1.2	1.8	--	--	--	--
Silver	391	8.47	0.84	--	--	--	--	--
Sodium	NA	NA	317	--	--	--	380	--
Vanadium	5.48	807	24.6	--	25	--	--	--
Zinc	23,500	12,400	21.8	--	53	85	--	--

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SSL - soil screening level
DAF - dilution attenuation factor
mg/kg - milligrams per kilogram
-- - not detected
NA - not applicable

Bolded text/shaded cells indicate constituent concentration above one or more screening criteria.

TABLE 5.8

METALS FOUND AT CONCENTRATIONS GREATER THAN THE BACKGROUND SOIL UPPER TOLERANCE LIMITS IN LF-25 (SWMU 97) SOILS
1992 RFI
CANNON AFB

	NMED Residential SSL[1]	NMED Soil to Groundwater SSLs (DAF 20)[1]	Background	BORINGS				
				CAN-97-10-04 14-16	CAN-97-10-05 19-21	CAN-97-10-99 19-21	CAN-97-10-06 24-26	CAN-97-11-04 14-16
METALS (mg/kg)								
Aluminum	77,800	150,000	15,100	--	--	--	--	--
Arsenic	3.9	58.3	8.65	--	--	--	--	--
Barium	5,450	823	860	--	--	--	--	--
Beryllium	156	63.2	0.62	--	--	--	--	--
Cadmium	74.1	7.52	0.61	--	--	--	--	--
Calcium	NA	NA	290,000	--	--	--	--	--
Chromium	234	19.2	10.5	--	--	--	--	12
Cobalt	1520	45.2	3.9	--	--	--	--	--
Copper	3,130	703	5.7	7.5	--	--	--	--
Iron	23,500	65.4	8,840	--	--	--	--	--
Lead	400	9.17	9.15	--	--	--	--	--
Magnesium	NA	NA	10,700	--	12,000	11,000	12,000	--
Manganese	1,550	1.05	140	--	--	--	--	--
Mercury	6.11	NA	0.08	--	--	--	--	--
Molybdenum	391	403	0.69	--	--	--	--	--
Potassium	NA	NA	2,850	--	--	--	--	3300
Selenium	391	5.17	1.2	1.6	--	--	--	--
Silver	391	8.47	0.84	--	--	--	--	--
Sodium	NA	NA	317	--	--	--	--	330
Vanadium	5.48	807	24.6	--	--	--	--	32
Zinc	23,500	12,400	21.8	--	--	--	--	23

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)

NMED - New Mexico Environment Department
SSL - soil screening level
DAF - dilution attenuation factor
mg/kg - milligrams per kilogram
-- - not detected
NA - not applicable

Bolded text/shaded cells indicate constituent concentration above one or more screening criteria.

TABLE 5.8

METALS FOUND AT CONCENTRATIONS GREATER THAN THE BACKGROUND SOIL UPPER TOLERANCE LIMITS IN LF-25 (SWMU 97) SOILS
1992 RFI
CANNON AFB

	NMED Residential SSL (1)	NMED Soil to Groundwater SSLs (DAF 20) (1)	Background	BORINGS				
				CAN-97-11-05 19-21	CAN-97-11-10 46-48	CAN-97-14-04 15-16	CAN-97-14-06 24-26	CAN-97-14-07 29-31
METALS (mg/kg)								
Aluminum	77,800	150,000	15,100	20,000	--	--	--	--
Arsenic	3.9	58.3	8.65	--	--	--	--	--
Barium	5,450	823	860	--	--	**1,100**	--	**1,000**
Beryllium	156	63.2	0.62	0.85	--	--	--	--
Cadmium	74.1	7.52	0.61	--	1.3	--	--	--
Calcium	NA	NA	290,000	--	--	--	--	--
Chromium	234	19.2	10.5	13	--	--	--	--
Cobalt	1520	45.2	3.9	--	--	--	--	--
Copper	3,130	703	5.7	--	--	--	--	--
Iron	23,500	65.4	8,840	**11,000**	--	--	--	--
Lead	400	9.17	9.15	--	--	--	--	--
Magnesium	NA	NA	10,700	--	--	--	--	--
Manganese	1,550	1.05	140	**150**	--	--	--	--
Mercury	6.11	NA	0.08	--	--	--	--	--
Molybdenum	391	403	0.69	--	--	--	--	--
Potassium	NA	NA	2,850	45000	--	--	--	--
Selenium	391	5.17	1.2	--	--	1.2	--	--
Silver	391	8.47	0.84	--	--	--	5	2.1
Sodium	NA	NA	317	370	--	--	--	--
Vanadium	5.48	807	24.6	39	--	--	--	--
Zinc	23,500	12,400	21.8	29	--	--	--	--

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)

NMED - New Mexico Environment Department
SSL - soil screening level
DAF - dilution attenuation factor
mg/kg - milligrams per kilogram
-- - not detected
NA - not applicable

Bolded text/shaded cells indicate constituent concentration above one or more screening criteria.

TAB[illegible]5.8

METALS FOUND AT CONCENTRATIONS GREATER THAN THE BACKGROUND SOIL UPPER TOLERANCE LIMITS IN LF-25 (SWMU 97) SOILS
1992 RFI
CANNON AFB

	NMED Residential SSLs	NMED Soil to Groundwater SSLs (DAF 20)(1)	Background	BORINGS				
				CAN-97-3A-06 21-25	CAN-97-3A-1[illegible] 19-21	CAN-97-3A-[illegible] 15-17	CAN-97-3C-0[illegible] 12-14	CAN-97-3C-02 18-20
METALS (mg/kg)								
Aluminum	77,800	150,000	15,100	--	--	--	--	--
Arsenic	3.9	58.3	8.65	--	--	--	--	--
Barium	5,450	823	860	--	--	--	--	--
Beryllium	156	63.2	0.62	0.63	--	--	0.63	0.64
Cadmium	74.1	7.52	0.61	--	--	--	--	--
Calcium	NA	NA	290,000	--	--	--	--	--
Chromium	234	19.2	10.5	--	--	--	12	--
Cobalt	1520	45.2	3.9	--	--	--	--	--
Copper	3,130	703	5.7	--	--	--	7.9	--
Iron	23,500	65.4	8,840	**9,200**	--	--	**11,000**	**10,000**
Lead	400	9.17	9.15	--	--	--	--	--
Magnesium	NA	NA	10,700	--	--	--	--	--
Manganese	1,550	1.05	140	--	--	--	**170**	**150**
Mercury	6.11	NA	0.08	--	--	--	--	--
Molybdenum	391	403	0.69	0.73	--	--	0.74	--
Potassium	NA	NA	2,850	2,900	--	--	--	--
Selenium	391	5.17	1.2	--	--	--	--	--
Silver	391	8.47	0.84	--	--	--	--	--
Sodium	NA	NA	317	--	330	420	--	--
Vanadium	5.48	807	24.6	--	--	--	--	27
Zinc	23,500	12,400	21.8	22	--	--	28	24

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)

NMED - New Mexico Environment Department
SSL - soil screening level
DAF - dilution attenuation factor
mg/kg - milligrams per kilogram
-- - not detected
NA - not applicable

Bolded text/shaded cells indicate constituent concentration above one or more screening criteria.

TABLE 5.8

METALS FOUND AT CONCENTRATIONS GREATER THAN THE BACKGROUND SOIL UPPER TOLERANCE LIMITS
IN LF-25 (SWMU 97) SOILS
1992 RFI
CANNON AFB

	NMED Residential SSL[1]	NMED Soil to Groundwater SSL[1] (DAF 20)[1]	Background	BORINGS				
				CAN-97-SC-03 22-25	CAN-97-SC-04 28-30	CAN-97-SC-19 55-57	CAN-97-SB-03 14-16	CAN-97-BC-99 59-61
METALS (mg/kg)								
Aluminum	77,800	150,000	15,100	--	--	--	--	--
Arsenic	3.9	58.3	8.65	--	--	--	--	--
Barium	5,450	823	860	--	--	--	--	--
Beryllium	156	63.2	0.62	--	0.68	--	--	--
Cadmium	74.1	7.52	0.61	--	--	--	--	--
Calcium	NA	NA	290,000	--	--	--	--	--
Chromium	234	19.2	10.5	--	--	--	--	--
Cobalt	1520	45.2	3.9	--	--	--	--	--
Copper	3,130	703	5.7	--	--	--	--	--
Iron	23,500	65.4	8,840	--	--	--	--	--
Lead	400	9.17	9.15	--	--	--	--	--
Magnesium	NA	NA	10,700	--	--	15,000	--	--
Manganese	1,550	1.05	140	**170**	--	--	--	**140**
Mercury	6.11	NA	0.08	--	--	--	--	--
Molybdenum	391	403	0.69	--	--	--	--	--
Potassium	NA	NA	2,850	--	--	--	--	--
Selenium	391	5.17	1.2	--	--	--	--	--
Silver	391	8.47	0.84	--	--	--	--	--
Sodium	NA	NA	317	--	--	--	330	--
Vanadium	5.48	807	24.6	--	--	--	--	--
Zinc	23,500	12,400	21.8	--	--	--	--	--

(1) Screening criteria obtained from NMED Technical Background Document for Development of Soil Screening Levels, Revision 2.0 (February 2004)

NMED - New Mexico Environment Department
SSL - soil screening level
DAF - dilution attenuation factor
mg/kg - milligrams per kilogram
-- - not detected
NA - not applicable

Bolded text/shaded cells indicate constituent concentration above one or more screening criteria.

GROUNDWATER ANALYTICAL RESULTS
LF-25 (SWMU 97)
CANNON AFB

CONSTITUENTS	USEPA MCLs	NMSS Standards	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
VOCs[2] (ug/L)													
Carbon Disulfide	NA	NA	36	--	--	--	--	--	--	--	--	--	--
Chloroform	NA	100		--		--	--	0.19 J	0.18 J	19 J	0.21 J	0.17 J	0.17 J
Methylene Chloride	NA	100	1.7	1.3	--	--	--	--	0.12 JB	--	0.19	1.7	1.3
Toluene	1000	750	12	17	--	--	--	--	--	--	--	--	--
Trichloroethene	5	100	--	--	--	--	--	0.11 J	0.13 J	0.23 J	0.14 J	0.11 J	--
SVOCs[2] (ug/L)													
bis(2-ethylhexyl)phthalate	6	NA	ND	ND	ND	[illegible]	ND	--	--	--	--	--	--
di-n-butylphthalate	NA	NA	--	--	--	--	--	--	--	--	--	--	--
2-Methylphenol	NA	NA	1.2	--	--	--	--	--	--	--	--	--	--
PAHs (mg/L)	NA	0.03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Organochlorine Pesticides[3]	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
Organophosphorous Pesticides	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCBs[3]	0.0005	0.001	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
Herbicides[3]	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dioxin (mg/L)													
2,3,7,8-TCDD	3.0×10^{-8}	NA	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA
Total Metals[3] (mg/L)													
Aluminum	NA	5	--	NA	--	--	--	--	--	--	--	--	--
Antimony	0.006	NA	--	NA	--	--	--	--	--	--	--	--	--
Arsenic	0.05	0.1	0.0014	NA	--	0.0033	0.0028	--	0.0035 J	--	--	--	--
Barium	2	1	0.29	NA	0.091	0.058	0.056	0.06	0.059	0.0543	0.0537	0.0582	0.0572
Beryllium	0.004	NA	--	NA	--	--	--	--	--	--	--	--	--
Cadmium	0.005	0.01	--	NA	--	--	--	--	--	--	--	--	--
Calcium	NA	NA	--	NA	--	--	--	--	--	NA	NA	59.3	58
Chromium	0.1	0.05	--	NA	--	0.021	0.017	0.049	[illegible]	0.0227	0.0223	[illegible]	[illegible]
Cobalt	NA	0.05	--	NA	--	--	--	0.0048 J	--	--	--	--	--
Copper	1.3[4]	1	0.011	NA	--	--	--	0.0053 J	--	NA	NA	0.0033 B	0.0111 B
Iron	NA	1	--	NA	--	--	--	--	--	0.594	0.647	0.76	[illegible]
Lead	0.015[4]	0.05	0.0013	NA	--	--	--	--	--	0.0014	0.0015	--	--
Magnesium	NA	NA	--	NA	--	--	--	--	--	NA	NA	62.9	61.7
Manganese	NA	0.2	--	NA	--	--	--	--	--	0.0756	0.0847	0.0879	0.0998
Mercury	0.002	0.002	--	NA	--	0.000071	--	--	--	--	--	--	--
Nickel	NA	0.2	--	NA	0.042	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Potassium	NA	NA	--	NA	--	--	--	--	--	NA	NA	8.59	8.38
Selenium	0.05	0.05	0.0048	NA	--	0.0062	0.0054	0.005	0.0059 q	0.005	0.0051	0.011	0.0099
Sodium	NA	NA	--	NA	--	--	--	--	--	43.3	43.7	43.6	42.9
Thallium	0.002	NA	--	NA	--	0.000064	0.000055	--	--	--	--	--	--
Tin	NA	NA	--	NA	--	--	--	--	0.027 J	--	--	--	--
Vanadium	NA	NA	0.026	NA	0.01	0.012	0.01	0.012	0.0073 J	0.0107	0.011	0.013	0.0123
Zinc	NA	10	0.013	NA	--	0.0028	--	--	--	--	--	--	--
Dissolved Metals (mg/L)													
Arsenic	0.05	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	2	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	0.005	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	NA	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	0.015[4]	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	NA	0.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	NA	0.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	0.05	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	NA	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
General Chemistry (mg/L)													
Chloride	NA	250	NA	NA	NA	NA	NA	NA	NA	119	120	142	124
Nitrate	10	10	NA	NA	--	4.7	4.7	4.9	5.2	4.9	4.9	4.5 UJ	4.6 UJ
Sulfate	NA	600	NA	NA	NA	NA	NA	NA	NA	132	130	144	150
Sulfide	NA	NA	NA	NA	0.053	--	--	2.4	--	NA	NA	NA	NA
TOC	NA	NA	NA	NA	2.6	0.76	0.88	1.1	0.6 J	NA	NA	NA	NA
TOX	NA	NA	NA	NA	--	0.0241	0.0147	0.0264 J	0.0168 J	NA	NA	NA	NA
Miscellaneous (mg/L)													
Cyanide	0.2	0.2	NA	NA	--	ND	ND	ND	ND	NA	NA	NA	NA
Phenols	NA	0.005	NA	NA					--	--	--	--	--

(1) New Mexico State Standards as provided in 20.6.2.3103
(2) Appendix IX analysis conducted for the 1997 and 1998 sampling events
(3) Appendix IX analysis conducted for the four quarterly sampling events
(4) Action Level

Bold/shaded text indicates constituent concentration above screening criteria

Acronyms
USEPA - United States Environemntal Protection Agency
MCLs - Maximum Contaminant Levels
NMSS - New Mexico State Standard
VOCs - volatile organic compuonds
SVOCs - semi-volatile organic compounds
ug/L - micrograms per liter
mg/L - milligrams per liter
NA - not applicable/not analyzed
-- - not detected
Qrt - quarter
S-A - semi-annual

GROUNDWATER ANALYTICAL RESULTS
LF-25 (SWMU 97)
CANNON AFB

CONSTITUENT	NMSA MCLs	NMSS Standard	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
VOCs[2] (ug/L)													
Carbon Disulfide	NA	NA	--	--	--	--	--	--	--	--	--	--	--
Chloroform	NA	100	[illegible]	[illegible]	0.14 J	0.15 J	--	--	--	--	--	--	--
Methylene Chloride	NA	100	--	--	--	--	7.7 B	--	--	--	--	--	--
Toluene	1000	750	--	--	--	--	--	--	--	--	--	--	--
Trichloroethene	5	100	--	--	--	--	--	--	--	--	--	--	--
SVOCs[2] (ug/L)													
bis(2-ethylhexyl)phthalate	6	NA	--	--	--	--	--	--	--	--	--	--	--
di-n-butylphthalate	NA	NA	--	--	--	--	--	--	--	--	--	--	--
2-Methylphenol	NA	NA	--	--	--	--	--	--	--	--	--	--	--
PAHs (mg/L)	NA	0.03	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND
Organochlorine Pesticides[2]	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Organophosphorous Pesticides	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCBs[2]	0.0005	0.001	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Herbicides[2]	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dioxin (mg/L)													
2,3,7,8-TCDD	3.0×10^{-8}	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Metals[3] (mg/L)													
Aluminum	NA	5	--	--	0.0904	0.106	--	--	--	--	--	0.085	0.099
Antimony	0.006	NA	--	--	0.0039	--	--	--	--	--	--	--	--
Arsenic	0.05	0.1	--	--	0.0036	0.0035	--	--	--	0.005	--	0.006	0.005
Barium	2	1	0.052 B	0.0483 B	0.0507	0.0521	--	--	--	0.058	0.059	0.062	0.062
Beryllium	0.004	NA	0.0011	0.0012	--	--	--	--	--	--	--	--	--
Cadmium	0.005	0.01	--	--	--	--	--	--	--	--	--	--	--
Calcium	NA	NA	55.7	52.4	51.1	53.7	51	51	52	50.48	49.91	50.4	50.5
Chromium	0.1	0.05	[illegible]	0.0497	[illegible]	[illegible]	[illegible]	0.28	[illegible]	--	--	--	--
Cobalt	NA	0.05	--	--	--	--	--	--	--	--	--	--	--
Copper	1.3[4]	1	0.0049	0.0014	--	--	0.01	--	--	--	--	--	--
Iron	NA	1	[illegible]	0.948	0.651	0.716	[illegible]	[illegible]	0.79	--	--	0.23	0.26
Lead	0.015[4]	0.05	0.003	0.001	0.001 J	0.0019 J	--	--	--	--	--	--	--
Magnesium	NA	NA	58.2	54.9	55	57.5	54	52	53	48.55	48.01	56.5	56.6
Manganese	NA	0.2	0.0543	0.0526	0.0342	0.0393	0.05	0.044	0.028	0.117	0.116	--	--
Mercury	0.002	0.002	--	--	--	--	--	--	--	--	--	--	--
Nickel	NA	0.2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	--	--	--	--
Potassium	NA	NA	8.19	8.42	7.6	7.92	8.2	8.5	8.6	8.49	8.45	9.3	9.3
Selenium	0.05	0.05	0.0096	0.0075	0.0087	0.008	0.0079	0.011	0.0095	0.01	0.01	0.015	0.012
Sodium	NA	NA	42.4 B	43.9 B	39.3 B	40.5 B	35	33	34	48.74	48.36	45.9	46.1
Thallium	0.002	NA	--	--	NA	NA	--	--	--	--	--	--	--
Tin	NA	NA	--	--	--	--	--	--	--	--	--		
Vanadium	NA	NA	0.0152	0.0126	0.0136	0.0138	0.019	0.014	0.013	--	--	0.023	0.023
Zinc	NA	10	--	--	--	0.0039 J	--	--	--	--	--	--	--
Dissolved Metals (mg/L)													
Arsenic	0.05	0.1	0.004	0.0034	ND	ND	NA	NA	NA	NA	NA	NA	NA
Barium	2	1	0.0547	0.052	0.047	0.0496	NA	NA	NA	NA	NA	NA	NA
Cadmium	0.005	0.01	0.0011	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA
Calcium	NA	NA	56.8	56	50.4	51.7	NA	NA	NA	NA	NA	NA	NA
Iron	NA	1	ND	0.043	0.060 BJ	0.44 JB	NA	NA	NA	NA	NA	NA	NA
Lead	0.015[4]	0.05	ND	ND	0.0014 J	ND	NA	NA	NA	NA	NA	NA	NA
Magnesium	NA	NA	60.3	59.4	54	55.4 J	NA	NA	NA	NA	NA	NA	NA
Manganese	NA	0.2	0.046	0.0513	0.0347	0.0382	NA	NA	NA	NA	NA	NA	NA
Nickel	NA	0.2	[illegible]	[illegible]	[illegible]	[illegible]	NA	NA	NA	NA	NA	NA	NA
Potassium	NA	NA	8.03	7.61	7.72	7.87 J	NA	NA	NA	NA	NA	NA	NA
Selenium	0.05	0.05	0.0096	0.0068	0.012	0.0078	NA	NA	NA	NA	NA	NA	NA
Sodium	NA	NA	43.1	42.3	40 B	40.4 B	NA	NA	NA	NA	NA	NA	NA
Vanadium	NA	NA	0.013	0.0112	0.0112	0.0112	NA	NA	NA	NA	NA	NA	NA
Zinc	NA	10	0.0051	0.0034	0.0082 J	ND	NA	NA	NA	NA	NA	NA	NA
General Chemistry (mg/L)													
Chloride	NA	250	125	119	113	108	97	96	98	74.2	72.8	67.9	68.5
Nitrate	10	10	5.1	5.2	5	5.2	5.5	6.1	4	4.27	4.25	3.47	3.48
Sulfate	NA	600	134	133	133 B	116 B	130	140	140	115	113	152	153
Sulfide	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOX	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Miscellaneous (mg/L)													
Cyanide	0.2	0.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenols	NA	0.005	--	--	--	--	--	--	--	--	--	--	--

(1) New Mexico State Standards as provided in 20.6.2.3103
(2) Appendix IX analysis conducted for the 1997 and 1998 sampling events
(3) Appendix IX analysis conducted for the four quarterly sampling events
(4) Action Level

Bold/shaded text indicates constituent concentration above screening criteria

Acronyms

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MCLs - Maximum Contaminant Levels
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VOCs - volatile organic compuonds
SVOCs - semi-volatile organic compounds
ug/L - micrograms per liter
mg/L - milligrams per liter
NA - not applicable/not analyzed
-- - not detected
Qrt - quarter
S-A - semi-annual

GROUNDWATER ANALYTICAL RESULTS
LF-25 (SWMU 97)
CANNON AFB

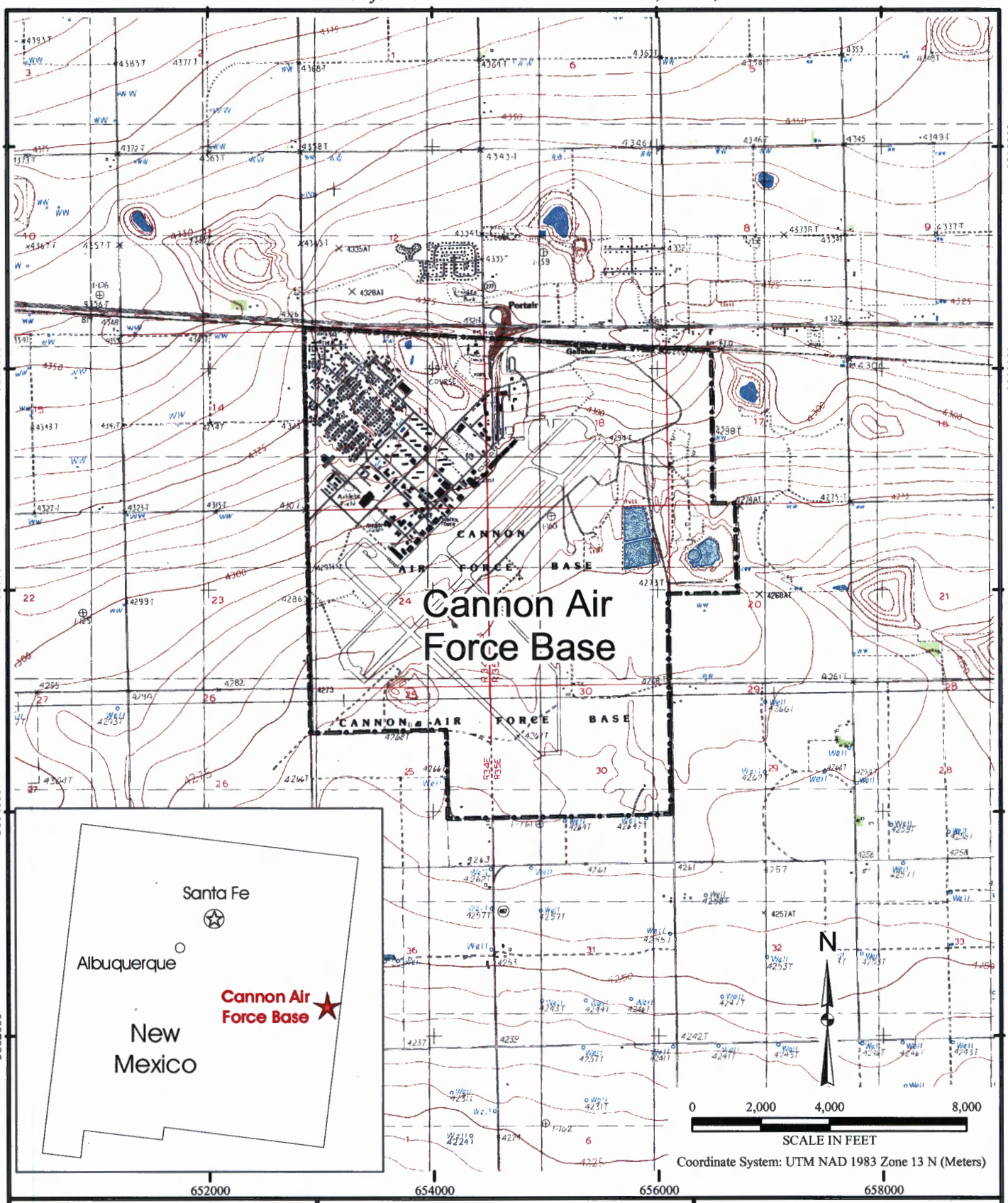
CONSTITUENTS	NMSS (1) MCL	USEPA MCLs	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
VOCs[2] (ug/L)									
Carbon Disulfide	NA	NA	--	--	--	--	--	--	--
Chloroform	NA	100	--	--	--	--	--	--	--
Methylene Chloride	NA	100	--	--	--	--	--	--	--
Toluene	1000	750	--	--	--	--	--	--	--
Trichloroethene	5	100	--	--	--	--	--	--	--
SVOCs[2] (ug/L)									
bis(2-ethylhexyl)phthalate	6	NA	--	--	--	--	--	--	--
di-n-butylphthalate	NA	NA	--	--	--	--	--	--	--
2-Methylphenol	NA	NA	--	--	--	--	--	--	--
PAHs (mg/L)	NA	0.03	ND	NA	NA	--	--	NA	NA
Organochlorine Pesticides[3]	NA	NA	ND	ND	ND	NA	NA	--	--
Organophosphorous Pesticides	NA	NA	ND	ND	ND	--	--	--	--
PCBs[3]	0.0005	0.001	ND	ND	ND	--	--	--	--
Herbicides[3]	NA	NA	ND	ND	ND	--	--	--	--
Dioxin (mg/L)									
2,3,7,8-TCDD	$3.0x10^{-8}$	NA	NA	NA	NA	NA	NA	NA	NA
Total Metals[3] (mg/L)									
Aluminum	NA	5	--	0.211 J	0.108	0.158 J	0.182 J	0.042 J	0.166 J
Antimony	0.006	NA	--	--	--	--	--	--	--
Arsenic	0.05	0.1	0.006	--	--	[illegible]	0.0067 J	0.0029 J	0.0047 J
Barium	2	1	0.057	0.063	0.063	0.06 J	0.0553 J	0.0658 J	0.0632 J
Beryllium	0.004	NA	--	--	--	--	--	--	--
Cadmium	0.005	0.01	0.001	--	--	--	--	--	--
Calcium	NA	NA	45	47.5	46.5	484	46.3	68.1	65.5
Chromium	0.1	0.05	--	0.036	--	0.0044	0.0026 J	0.00052 J	0.0015 J
Cobalt	NA	0.05	--	--	--	--	--	--	--
Copper	1.3[4]	1	--	0.016	--	--	--	--	--
Iron	NA	1	0.281	0.52	0.34	--	--	--	0.312
Lead	0.015[4]	0.05	--	--	--	--	0.0016 J	--	--
Magnesium	NA	NA	47	47.6	46.8	49.3	46.2	70.1	67
Manganese	NA	0.2	--	--	--	0.0122 J	0.0173	0.002 J	0.0118 J
Mercury	0.002	0.002	--	--	--	--	--	--	0.00014 J
Nickel	NA	0.2	--	0.05	--	0.0022 J	--	0.0011 J	0.0015 J
Potassium	NA	NA	10	9.6	9.5	7.78	7.36	8.67	9.18
Selenium	0.05	0.05	0.01	0.013	0.012	0.0072 J	0.0081 J	--	0.022
Sodium	NA	NA	46	43.9	43.2	38.6	36.2	40.4	37.4
Thallium	0.002	NA	--	--	--	[illegible]	[illegible]	--	--
Tin	NA	NA		--	--	NA	NA	NA	NA
Vanadium	NA	NA	0.026	0.026	0.026	0.0228 J	0.0219 J	0.0218 J	0.0221 J
Zinc	NA	10	--	0.026	--	0.0026 J	0.0024 J	--	--
Dissolved Metals (mg/L)									
Arsenic	0.05	0.1	NA	NA	NA	NA	NA	NA	NA
Barium	2	1	NA	NA	NA	NA	NA	NA	NA
Cadmium	0.005	0.01	NA	NA	NA	NA	NA	NA	NA
Calcium	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	NA	1	NA	NA	NA	NA	NA	NA	NA
Lead	0.015[4]	0.05	NA	NA	NA	NA	NA	NA	NA
Magnesium	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	NA	0.2	NA	NA	NA	NA	NA	NA	NA
Nickel	NA	0.2	NA	NA	NA	NA	NA	NA	NA
Potassium	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	0.05	0.05	NA	NA	NA	NA	NA	NA	NA
Sodium	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	NA	10	NA	NA	NA	NA	NA	NA	NA
General Chemistry (mg/L)									
Chloride	NA	250	64	98.8	92.2	78.8	77.3	114	77.2
Nitrate	10	10	3	2.68	2.62	2.6	2.5	2.2 J	2.2
Sulfate	NA	600	94	116	120	111	110	289	215
Sulfide	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOC	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOX	NA	NA	NA	NA	NA	NA	NA	NA	NA
Miscellaneous (mg/L)									
Cyanide	0.2	0.2	NA	NA	NA	NA	NA	NA	NA
Phenols	NA	0.005	--	--	--	--	0.028 J	--	--

(1) New Mexico State Standards as provided in 20.6.2.3103
(2) Appendix IX analysis conducted for the 1997 and 1998 sampling events
(3) Appendix IX analysis conducted for the four quarterly sampling events
(4) Action Level

Bold/shaded text indicates constituent concentration above screening criteria

Acronyms
USEPA - United States Environemntal Protection Agency
MCLs - Maximum Contaminant Levels
NMSS - New Mexico State Standard
VOCs - volatile organic compounds
SVOCs - semi-volatile organic compounds
ug/L - micrograms per liter
mg/L - milligrams per liter
NA - not applicable/not analyzed
-- - not detected
Qrt - quarter
S-A - semi-annual

FIGURES



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Project: AFC002-037-05-02-01
Revised: 02/27/06 TB
Map Source:

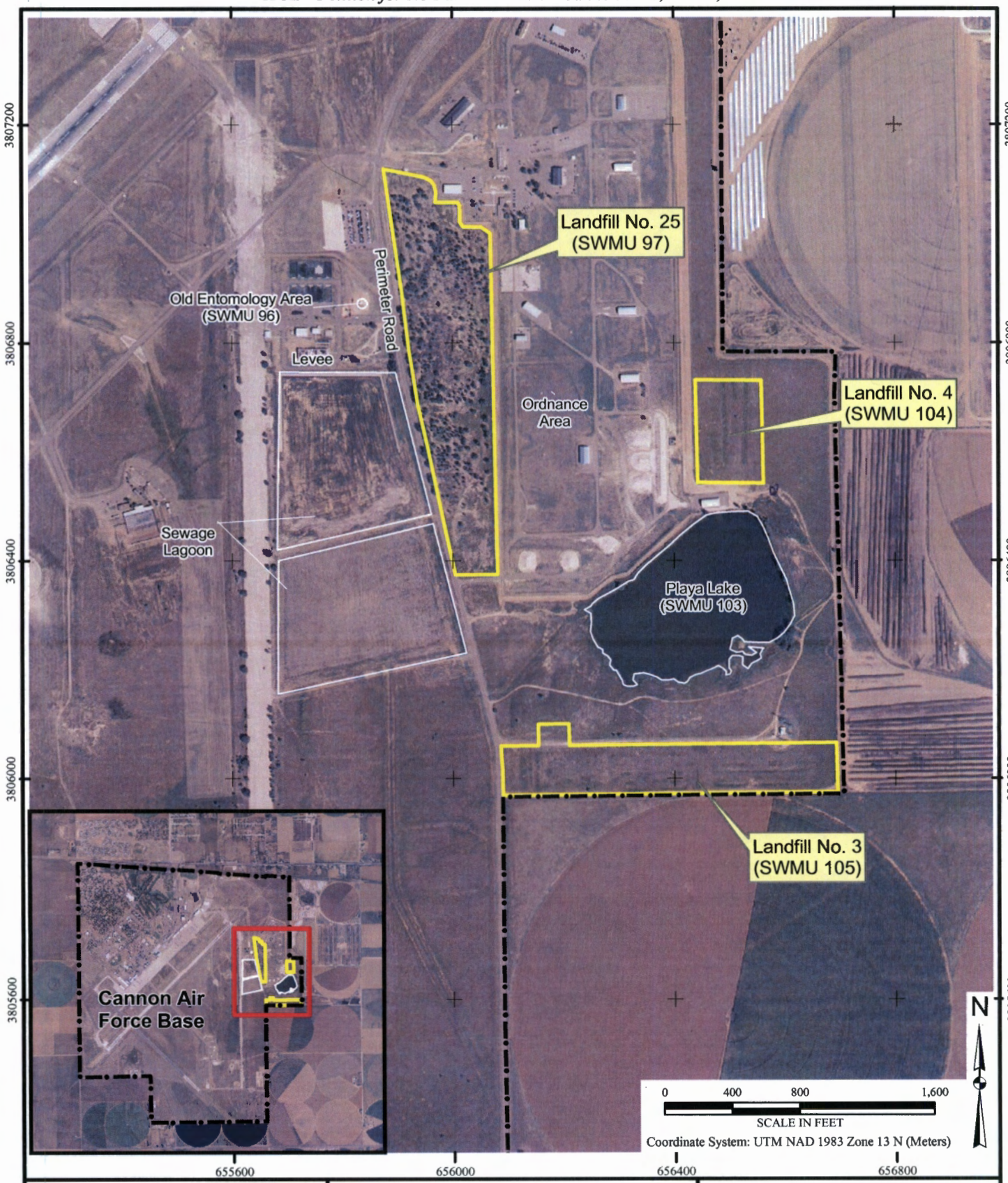
HGL HydroGeoLogic, Inc

Legend

Facility Boundary

Topographic Elevation Contour (ft above msl)

Figure 2.1
Location Map
Cannon AFB



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Project: AFC002-037-05-02-01
Revised: 02/27/06 TB
Map Source:

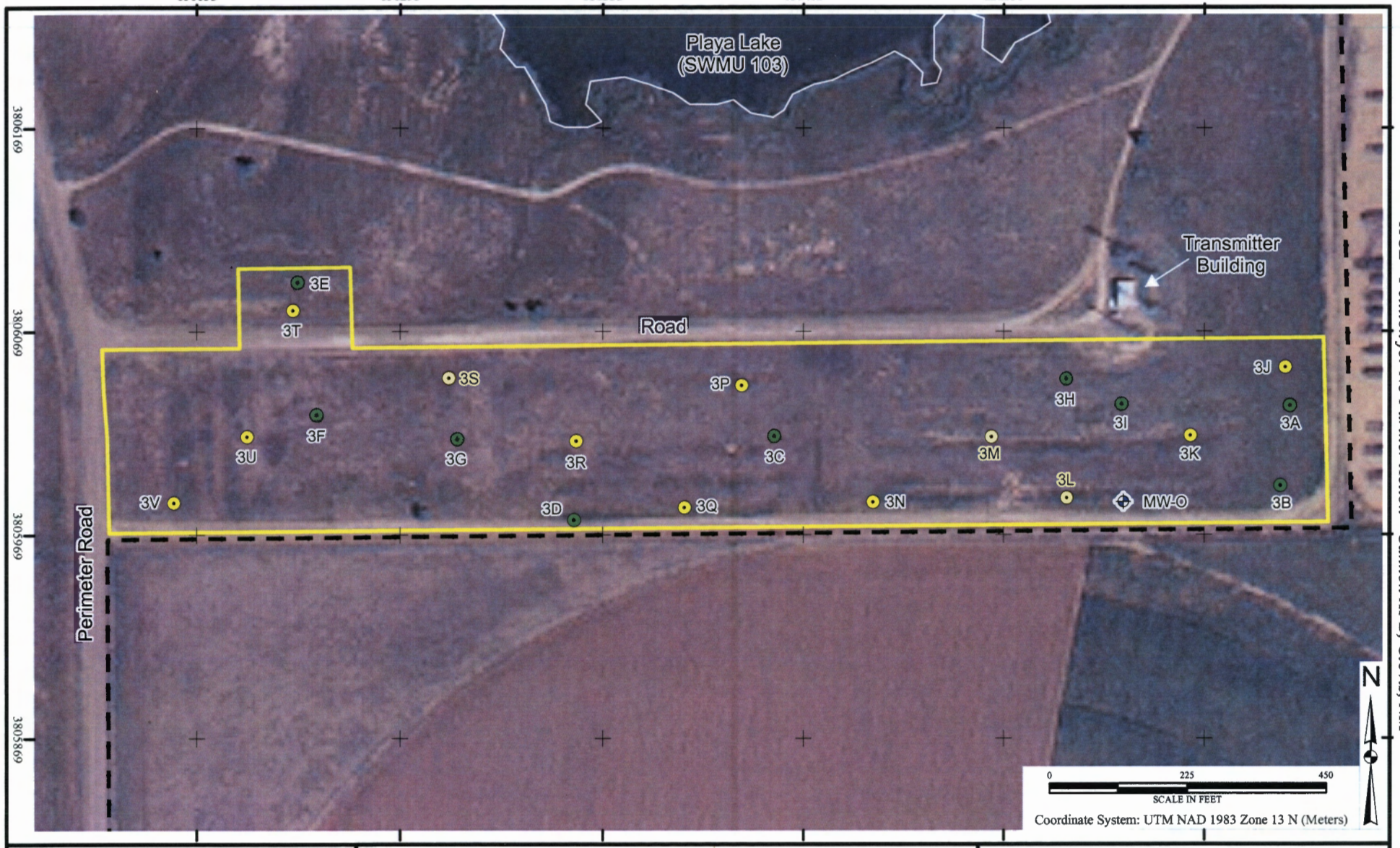
HGL HydroGeoLogic, Inc

Legend

Property Boundary

Solid Waste Management Unit (SWMU)

Figure 2.2
Site Location Map
Cannon AFB



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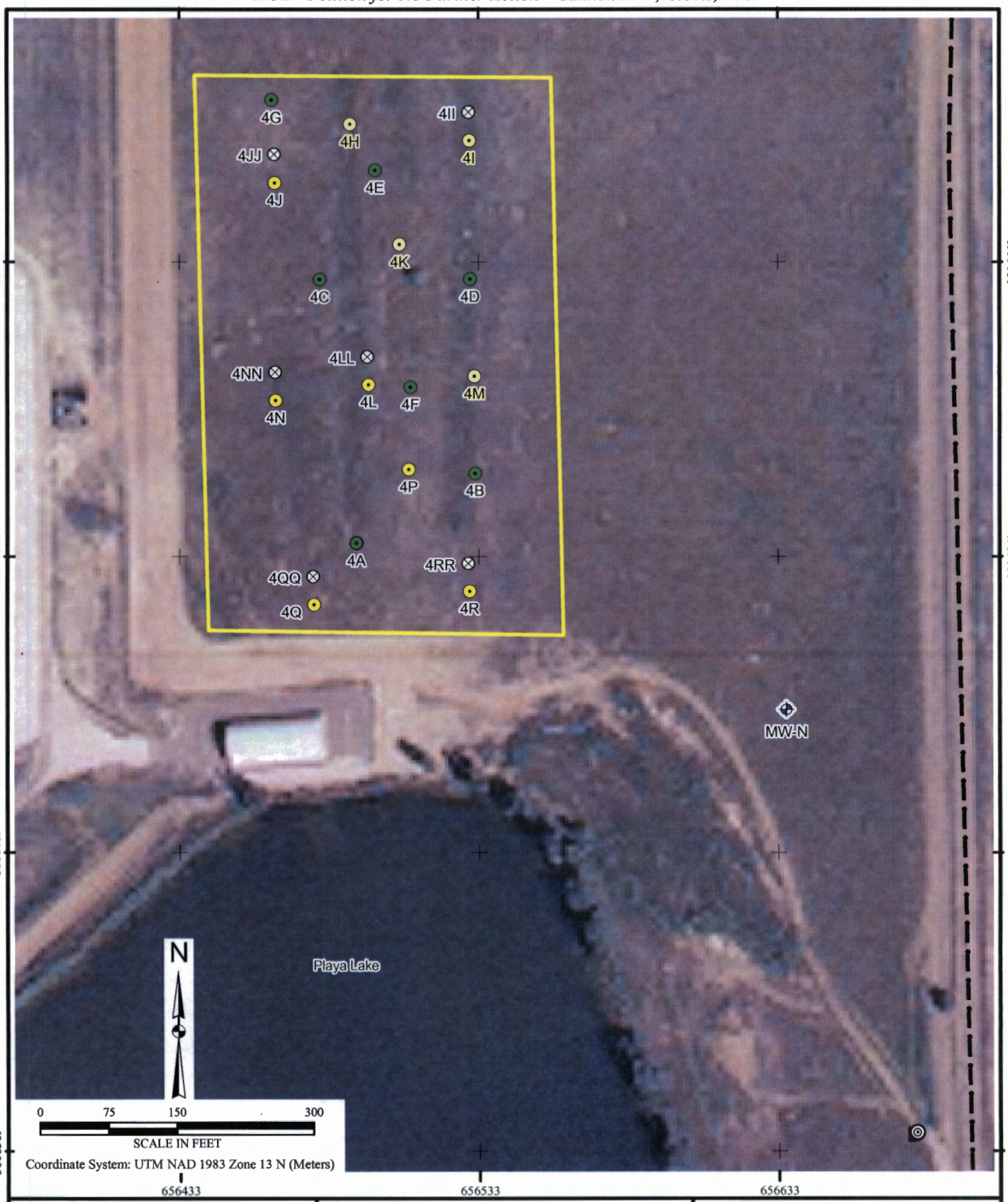
Project: AFC002-037-05-02-01
Revised: 02/27/06 TB
Map Source:

HGL HydroGeoLogic, Inc

Legend

- Waste Disposal Area (LF-03/SWMU 105)
- Property Boundary
- Soil Boring, February 1985
- Soil Boring, July 1992
- Monitoring Well

Figure 3.1
Landfill No. 3
(LF-03/SWMU 105)
Cannon AFB



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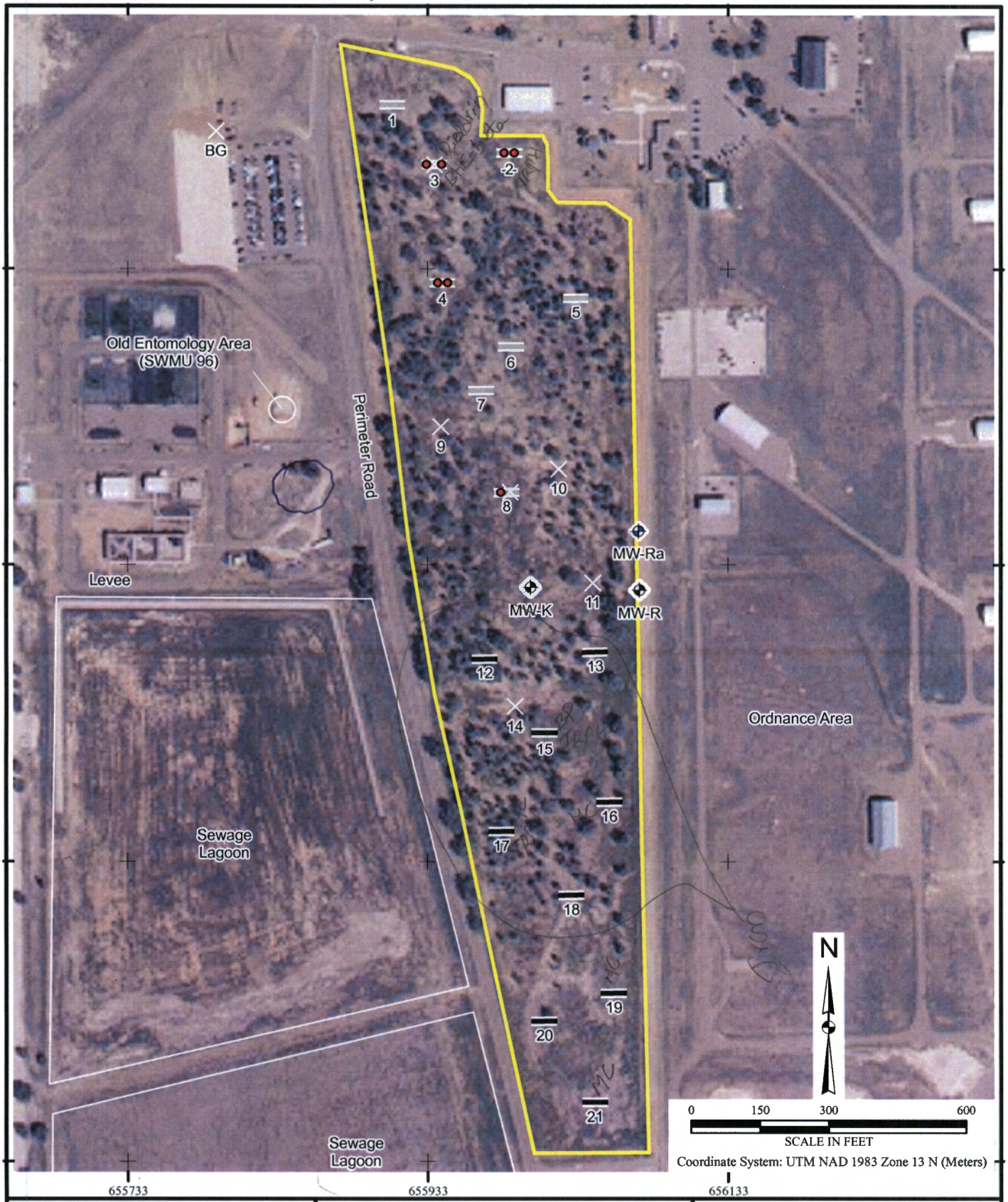
Project: AFC002-037-05-02-01
Revised: 02/27/06 TB
Map Source:

HGL HydroGeoLogic, Inc

Legend

- Waste Disposal Area (LF-04/SWMU 104)
- Facility Boundary
- 1985 Soil Boring
- 1992 Soil Boring
- Surface Sample
- Background Surface Sample
- Monitoring Well

Figure 4.1
Landfill No. 4
(LF-04/SWMU 104)
Cannon AFB



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Project: AFC002-037-05-02-01
Revised: 02/27/06 TB
Map Source:

HGL HydroGeoLogic, Inc

Legend

- Waste Disposal Area (LF-25/SWMU 97)
- RFI Trench Location
- Environmental Assessment Trench Location
- 60' Soil Boring
- 10' Soil Boring
- Monitoring Well
- Abandoned Monitoring Well

Figure 5.1
Landfill No. 25
(LF-25/SWMU 97)
Cannon AFB

APPENDIX A

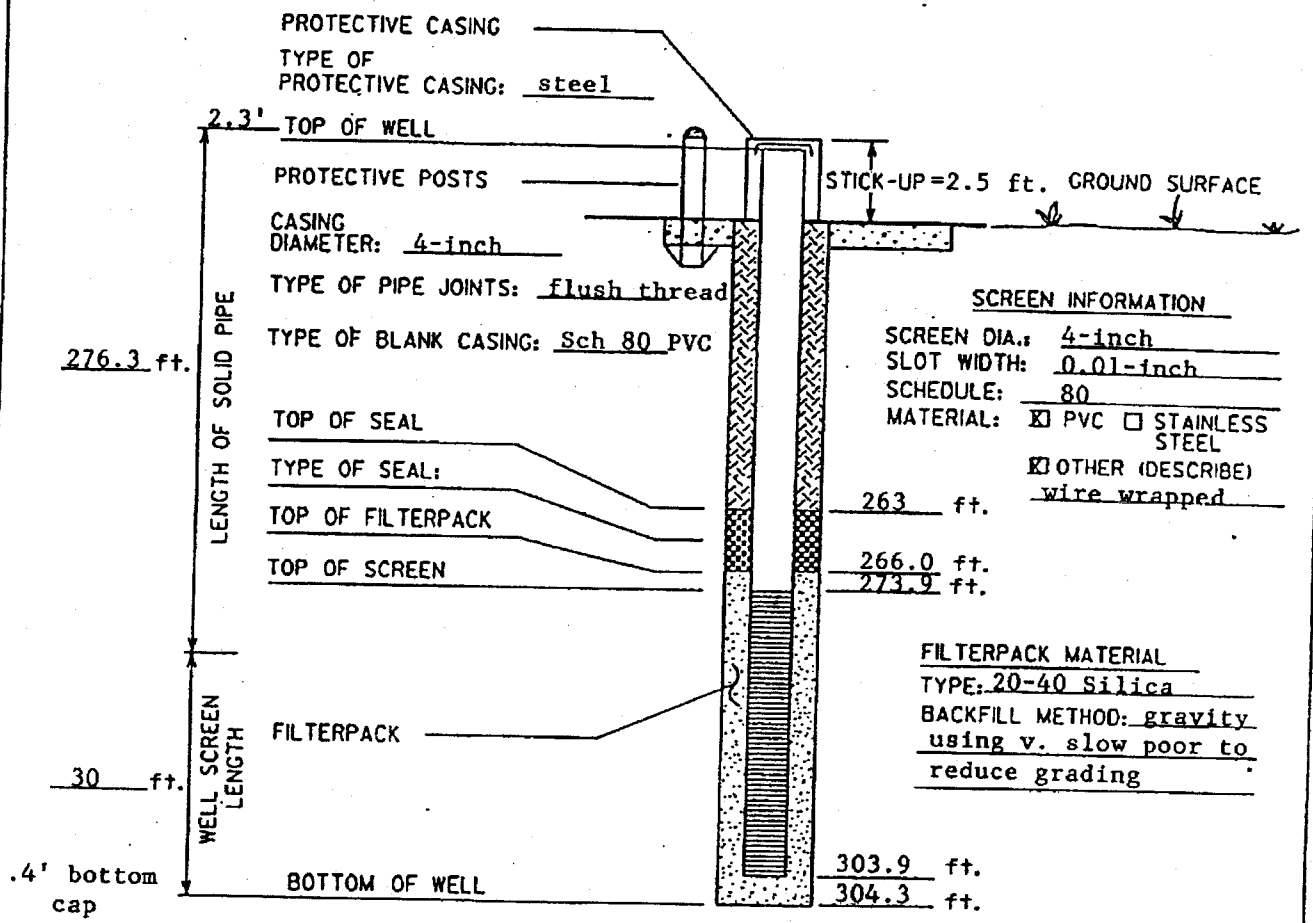
BORING LOGS
(LF-03, LF-04, and LF-25)

LANDFILL No.3
(LF-03/SWMU 105)

ELEVATION GROUND WATER 3994.80 ft. MSL			PROJECT CANNON AIR FORCE BASE
DATE INSTALLED 10-30-94	STARTED 10-28-94	COMPLETED 10-30-94	LOCATION (Coordinates or Station) N=232439.95 E=812733.50
ELEVATION TOP OF HOLE 4271.00 GS 4273.1 TOC			SIGNATURE OF INSPECTOR Brian J. Ruby (Woodward-Clyde Consult.)
TOTAL DEPTH OF HOLE 304.3 BGS			HOLE NO. Monitoring Well O

MONITORING WELL CONSTRUCTION DIAGRAM

(ALL MEASUREMENTS FROM GROUND SURFACE)



SCREEN INFORMATION

SCREEN DIA.: 4-inch
SLOT WIDTH: 0.01-inch
SCHEDULE: 80
MATERIAL: ☒ PVC ☐ STAINLESS STEEL
☒ OTHER (DESCRIBE) wire wrapped

FILTERPACK MATERIAL

TYPE: 20-40 Silica
BACKFILL METHOD: gravity using v. slow poor to reduce grading

WELL DEVELOPMENT

METHOD: Bailing and pumping
TIME SPENT DEVELOPING: approx 2 hrs.
VOLUME OF WATER REMOVED: 200 gallons
VOLUME OF WATER ADDED: N/A
DESCRIPTION OF PREDEVELOPMENT WATER: reddish brown, silty
DESCRIPTION OF POST DEVELOPMENT WATER: clear and bright, 8 NTU

WATER LEVEL SUMMARY

WATER LEVEL MEASUREMENTS
DATE/TIME/LEVEL 11/2-3/94, 280.09 TOC
10/28/94, 278.3 BGS
10/27/94, 278.2 BGS

DEPTH FROM TOP CASING AFTER DEVELOPMENT:
280.09 TOC (to water)

HTW DRILLING LOG

HOLE NO. MW-0
SHEET 1 OF 33 SHEETS

1. COMPANY NAME: Woodward-Clyde Federal Services
2. DRILLING SUBCONTRACTOR: LAYNE ENVIRONMENTAL
3. PROJECT: F-3 & LF-4 RFI Phase II
4. LOCATION: CANNON AFB, N.M.
5. NAME OF DRILLER: Ben Bludworth
6. MANUFACTURER'S DESIGNATION OF DRILL: AP-1000 Percussion Hammer Rig
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 9" O.D. 6" ID Dual Wall Pipe (10') 9 3/4" OD. Open Face Bit (15' long) 2" California Tube Sampler
8. HOLE LOCATION: S. side of LF-3 (LF-3)
9. SURFACE ELEVATION: 4271.00
10. DATE STARTED: 10/25/94
11. DATE COMPLETED: 10/30/94
12. OVERBURDEN THICKNESS: N/A
13. DEPTH DRILLED INTO ROCK: N/A
14. TOTAL DEPTH OF HOLE: 304.3'
15. DEPTH GROUNDWATER ENCOUNTERED: 280'
16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: 278.3' BGS 13 hrs
17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY):
18. GEOTECHNICAL SAMPLES: DISTURBED 3; UNDISTURBED
19. TOTAL NUMBER OF CORE BOXES:
20. SAMPLES FOR CHEMICAL ANALYSIS: None — VOC; METALS; OTHER (SPECIFY); OTHER (SPECIFY); OTHER (SPECIFY)
21. TOTAL CORE RECOVERY: x
22. DISPOSITION OF HOLE: BACKFILLED; MONITORING WELL: MW-0; OTHER (SPECIFY)
23. SIGNATURE OF INSPECTOR: Brian A. Pick

ELEV. a.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO. e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
	1	0-90 Cuttings: Silty sand (SM). Red (2.5YR 4/8) v. fn-fine, well rounded qtz grading to yellowish red fine sand @ 5' (SP) dry fine sand.	PID cal. w/ 100 ppm Isobutylene to Benzene R.F. B.G.=0.0				Alluvium
	2		LEL/H2S calib to Ambient air LEL=0% H2S=0ppm				
	3						
	4						
	5						

PROJECT: CAFB LF 3/4 ph II — HOLE NO. MW-0

HTW DRILLING LOG

PROJECT: CAFB LF-3/4 RFI Ph II

INSPECTOR: [illegible]

HOLE NO.: MW-0

SHEET 2 OF 33 SHEETS

LEV.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
	5	Silty SAND (SM) same as above					Alluvium
	6						
	7						Alluvium
	8						
	9	Core (SP) 9-9.8': Yellow red, poorly graded fine round sand with clasts of caliche floating in sandy matrix	B.Z. = 0.0 BH = 0.0 H.S. = 0.0			10 12 15 14	Sample @ 1120 N = 27 Rec = 2.0'
	10	9.8-11'- Caliche: fine round qtz sand w/ $CaCO_3$ cement, soft, dry, easily broken with fingers, continues to 19'					
	11						
	12						
	13						
	14						

HTW DRILLING LOG

PROJECT: CAFB LF 3/4 RFI

INSPECTOR: Brian J. [illegible]

HOLE NO.: MW-D

SHEET 3 OF 33 SHEETS

V.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
		SAND (SP) same as above					Alluvium
	15						
	16						
	17						
	18						
	19	Core: 19.5-20.5: Clay (CL) clean reddish yellow (7.5 YR 6/8) mod. plasticity, Dry.	BZ = 0.0 H.S = 0.0			23 47 50/5"	Sample @ 1810 Rec = 1.2'/1.5' N = 97
	20	20.5-21: Caliche; fine sand w/ heavy $CaCO_3$ cement pink (7.5 YR 8/3) Dry.					
	21	silty SAND (SM), red-yellow (5YR 6/6) w/ fine, subangular qtz grains. caliche pebbles floating					Alluvium
	22						
	23						
	24						

HTW DRILLING LOG

PROJECT: CAFB LF-3/4 RFI Ph II

INSPECTOR: [illegible]

HOLE NO. MW-0

SHEET 4 OF 33 SHEETS

EV.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
	24	Silty SAND (SM) Same as above	PID cal. w/ 100 ppm isobutylene to Benzene R.F. BG = 0.0 BZ = 0.0 H.S. = 0.1				Alluvium Begin shift 7:00 10/26/94
	25	Cuttings: 25-29' + Red yellow (5YR 6/6) silty sand (SM) with fine, sub-angular qtz grains Caliche pebbles floating.					
	26						
	27						
	28						
	29	Core 29 - 30.5 - Interbedded fine sand and silt (SM) with thin caliche layers (up to .4'). Sand is yellowish red (5YR 7/4), Caliche is reddish yellow (5YR 7/6) and cements silty sand. Some hard wht clasts of caliche as stuff indicate more massive caliche zones also present.				43 45 50/4"	Sample @ 7:40 N = 95 Rec = 1.3/1.3
	30						
	31						
	32						
	33						

HTW DRILLING LOG

HOLE NO. MW-0

PROJECT CAFB LF 3/4 RFI Ph II

INSPECTOR [signature]

SHEET 5 OF 33 SHEETS

ELEV. a.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
		Silty SAND (SM) same as above					Alluvium
	34	Cuttings 30.5 - 39: Varigated zone of soft unconsolidated silty sand (SM) with massive, hard ~~caliche~~ to soft and chalky caliche layers. Sand is pink with $CaCO_3$ dendrites, fx filling and void filling.					
	35						
	36						
	37						
	38						
	39	Core 39-41: Silty sand (SM) v. similar to 29-30.5' interval. Reddish yellow, fine - v. fine sand, with locally heavy $CaCO_3$ cement.	BZ = 0.0 H.S. = 0.0			26 29 25 20	Sample @ 800 N = 54 R = 1.5/2.0
	40						
	41						
	42						
	43						

HTW DRILLING LOG

PROJECT: CAFB LF 3/4 RFI Ph II

INSPECTOR: Brian A. Pirky

HOLE NO.: MW-0

SHEET 6 OF 33 SHEETS

V.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
		Silty SAND (SM) same as above					Alluvium
	44						
	45						
	46	Cuttings: 46-47: Pinkish gray, sandy limestone cobbles, then reddish yellow (5YR 6/6) silty sand as above					
	47						
	48						
	49	Core 49-50.1: Fragments of sandy LS cobbles in silty sand matrix. Abnt $CaCO_3$ in matrix, but soft and dry. Red-yellow as above (SM)	B.Z. = 0.0 H.S. = 0.0			5 8 27 26	Sample @ 820 Rec. = 1.1 N: 35
	50	Cuttings 50-51: Gravelly sand (SP). Cobbles of limey sand/sandy LS coming up w pink silty sand.					Alluvium
	51						
	52						

HTW DRILLING LOG

PROJECT: CAFB LF 3/4 RFI Ph II

INSPECTOR: [illegible]

HOLE NO.: MW-0

SHEET 7 OF 33 SHEETS

ELEV. a.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
		gravelly SAND (SP) same as above					Alluvium
	53						
	54						
	55						
	56						
	57						
	58						
	59	CORE 59-60.6: Silty sand (SM) reddish yellow (5 YR 4/6). Angular-subround, soft unconsolidated, fine to V. fine qtz sand. Non-calcc	B.Z = 0.0 H.S. = 0.0			7 11 12 15	Alluvium 59' - Possible top of Ogallala? Sample @ 840 N = 23 Rec. = 1.6/2.0
	60						
	61	silty SAND (SM), V. soft, unconsolidated, v. fine to fine qtz. sand					Alluvium
	62						

HTW DRILLING LOG

PROJECT: CAFB LF 3/4 RFI PhII

INSPECTOR: Brian J. Reilly

HOLE NO. MW-0

SHEET 8 OF 53 SHEETS

EV.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
	62	Silty SAND (SM) same as above					Alluvium
		Cuttings					
		61-69': Silty sand (SM)					
	63	v. soft, unconsolidated, v. fine to fine ~~sand~~ qtz sand.					
	64						
	65						
	66						
	67						
	68						
		Core					
	69	69-70.5: Silty sand (SM) brown (7.5 YR 5/4) Round - subang, fine-med grain qtz. More pronounced quantity of well rounded, clear qtz grains. Damp Non-calcic, soft, unconsolidated, with occ. clasts of moderately cemented calcic sand.	BZ = 0.0 BH = 0.0 H.S. = 0.0			6 13 15 27	Sample @ 850 N = 28 Rec = 1.5/2.0
	70						
	71						

HTW DRILLING LOG

PROJECT: CAFB LF 3/4 RFI Ph II

INSPECTOR: Brian J. Reilly

HOLE NO.: MW-O

SHEET 9 OF 33 SHEETS

ELEV. a.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
		Silty SAND (SM) same as above					Alluvium
	72						
	73						
	74						
	75						
	76						
	77						
	78						
	79	Core 79-81: Poorly graded sand (SP) Fine to v. fine sand, reddish yellow (5YR 6/6), Soft, unconsolidated. Subang - subround qtz, non-calcic. Cobbles of calcic cemented fine sand floating in soft matrix. Damp.	BZ = 0.0 BH = 0.0 HS = 0.0			6 11 19 36	Alluvium Sample @ 91B N = 30 Rec = 1.8/2.0
	80						
	81						

PROJECT: CAFB LF 3/4 RFI Ph II

HOLE NO.: MW-O

HTW DRILLING LOG

PROJECT: CAFB LF 3/4 RFI Ph II

INSPECTOR: [illegible]

HOLE NO.: MW-0

SHEET 10 OF 53 SHEETS

E.V.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
	81	SAND (SP) Same as above					Alluvium
		Cuttings: 81-89 - Same as above					
	82						
	83						
	84						
	85						
	86						
	87						
	88						
		Core					
	89	89-90.5: Poorly graded sand (SP), v. fine - fine gtz, Round to subangular. Reddish yellow (7.5YR 6/6). Soft, unconsolidated, damp, non-calcre.	BZ = 0.0				
			BH = 0.0			10	Sample @ 925
			H.S.: 0.0			19	N = 46
						27	Rec = 1.5/2.0
	90					35	

HTW DRILLING LOG

HOLE NO. MW-0

PROJECT CAFB LF 3/4 RFI Ph II

INSPECTOR [illegible]

SHEET 11 OF 33 SHEETS

E.V.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
		SAND (SP) Same as above					Alluvium
	91	Cuttings: 90.5-99: Same as above					
	92						
	93						
	94						
	95						
	96						
	97						
	98						
	99	Core: 99-100.6 - Silty Sand (SM). Fine, round-subround qtz sand, w/ Appx 25% Silt. Soft, unconsolidated, Non-calcic and damp. Red-Yellow (7.5 YR 6/6)	BZ = 0.0 BH = 0.0 H.S. = 0.0			11 18 25 39	Sample @ 94.5 N = 43 Rec = 1.6/2.0
	100						

PROJECT CAFB LF 3/4 Ph II RFI HOLE NO. MW-0

HTW DRILLING LOG

PROJECT: CAFB LF 3/4 RFI Ph II

INSPECTOR: [illegible]

HOLE NO.: MW-0

SHEET 12 OF 33 SHEETS

LEV. a.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
	100	silty SAND (SM) same as above					Alluvium sample continued from above
	101	Cuttings 101-109: Same as above, w/ zones of moderately consolidated sand or cobbles with $CaCO_3$ cement.					
	102						
	103						
	104						
	105						
	106						
	107						
	108						
	109	SAND (SP) see description below				5	Alluvium

HTW DRILLING LOG

HOLE NO. MW-0

PROJECT CAFB LF 3/4 RFI PH II

INSPECTOR [illegible]

SHEET 13 OF 33 SHEETS

EV.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
		~~SAND (SP) same as above~~					~~Alluvium~~
		Core: 109-110.5 - Poorly graded				16	Sample @1010
	110	Sand (SP). Very well sorted	BZ = 0.0			32	N = 48
		fine sand, well rounded to	H.S = 0.0			50	Rec = 1.5/2.0
		Subround qtz, very clean, non-	BH = 0.0				
	111	calcre. Reddish yellow (7.5YR ~~6/8~~					
		6/8). Soft and unconsolidated,					
		damp.					
							1040: Early lunch -
	112						Compressor solenoid
							breaks, drillers go
							purchase parts.
	113						
	114						
	115						
	116						
	117						
	118						
	119						

HTW DRILLING LOG

PROJECT: CAFB LF 3/4 RFI Ph II

INSPECTOR: Brian A. Cooley

HOLE NO.: MW-D

SHEET 14 OF 37 SHEETS

EV.	DEPTH b.	DESCRIPTION OF MATERIALS SAND (SP) same as above	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
	119	Core 119-120.7 – Poorly graded sand (SP), fine, sub-round - subangular qtz, with localized $CaCO_3$ disseminations and clasts of $CaCO_3$ cemented fine sandstone, v. similar to host sand. Damp. Reddish Yellow, soft.	HS = 0.3			9 23 48 50/3"	Alluvium Sampled @ 1300 Rec. = 1.7'/1.7' N=71
	120						
	121						
	122						
	123						
	124						
	125						
	126						
	127						
	128						

HTW DRILLING LOG

PROJECT: CAFB LF 3/4 RFI Ph II

INSPECTOR: [illegible]

HOLE NO.: MW-0

SHEET 15 OF 33 SHEETS

ELEV. a.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
		SAND (SP) same as above					Alluvium
		Core:					
	129	129-130.5 - Silty Sand (SM).					Alluvium Sampled @ 1320
		V. fine - fine grain qtz, sub-	B.Z. = 0.0			11	N = 69
		angular to subround with $CaCO_3$.	H.S. = 0.1			25	
		Soft, damp, unconsolidated w/				44	Rec. = 1.5'/1.9'
	130	occ. clasts of $CaCO_3$ cemented				50/5"	
		SS. Reddish yellow (7.5 YR 6/6)					
	131						
	132						
	133						
	134						
	135						
	136						
	137						
	138						

HTW DRILLING LOG

PROJECT: CAFB LF 3/4 RFI Ph II

INSPECTOR: [signature]

HOLE NO. MW-0

SHEET 16 OF 33 SHEETS

ELEV.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
		Silty SAND (SM) same as above					Alluvium
		Core					Alluvium
	139	139-140.7: Poorly graded sand (SP). Very fine-fine grained qtz, round-subangular, soft, damp. No clasts, v. clean. Reddish yellow (7.5 YR 6/6) Trace MnOx as disseminations	BZ = 0.0 H.S. = 0.2 BH = 0.1			9 25 50 50/5"	Sampled @ 1395 N = 75 Rec = 1.7/1.8'
	140						
	141						
	142						
	143	Cuttings 141-149 - Same as above					
	144						
	145						
	146						
	147						

HTW DRILLING LOG

PROJECT: CAFB LF-3/4 RFI Ph II

INSPECTOR: Brian [illegible]

HOLE NO. MW-0

SHEET 17 OF 37 SHEETS

DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
	SAND (SP) same as above					Alluvium
148						
149	Core					
	149-150.5: Poorly graded fine sand (SP). Round-subangular qtz with occ. clasts of $CaCO_3$ cemented sandstone floating in matrix. Non-calcic, soft and damp, with MnOx disseminations.	BZ = 0.0 BH = 0.0 H.S. = 0.0			8 44 50/4"	Sampled @ 1420 Rec = 1.4/1.4 N=94
150						
151						
152						
153						
154						
155						
156						
157						

HTW DRILLING LOG

PROJECT: CAFB LF 3/4 RFI Ph II

INSPECTOR: Brian [illegible]

HOLE NO.: MW-0

SHEET 18 OF 33 SHEETS

ELEV. a.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
	157	SAND (SP) same as above					Alluvium
	158						
		Core					
	159	159-160.4: Poorly graded sand (SP), similar in all respects to interval above. Damp				6 45 50/4"	Sampled @ 1995, N=95 Rec. = 1.4'/1.4'
	160						
	161	Cuttings					
		161-169: More abnt cobbles of calcic cemented sandstone. This sandstone is a densely packed, well rounded, fine sand, with distinct dissolution features on the weathered exterior. Reddish yellow (7.5 YR 6/6) Damp.					Are cobbles w/ dissolution features a depositional feature, or calcic beds affected by percolating ground-water?
	162						
	163						
	164						
	165						
	166						

HTW DRILLING LOG

HOLE NO. MW-0

PROJECT CAFB LF 3/4 RFI Ph II

INSPECTOR [illegible]

SHEET 19 OF 33 SHEETS

ELEV.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
		SAND (SP) same as above					Alluvium
	167						
	168						
	169	Core 169-170.4: Poorly graded sand (SP), well sorted, fine qtz, slightly calcite locally, soft, reddish yellow (7.5YR 6/6) v. clean, damp.	BZ=0.0 B.H.=0.1 H.S.=0.0			10 32 50/4"	Sampled @ 1520 N=82 Rec=1.4/1.4'
	170						
	171	Cuttings 171-179: (SP) As above, v. clean fine sand, soft with occ. cobbles of $CaCO_3$ cemented ss, fine grained, w/ dissolution features (worm burrows, stems etc.) Damp reddish yellow.					
	172						
	173						
	174						
	175						
	176						

HTW DRILLING LOG

PROJECT: CAFB LF 3/4 RFI Ph II

INSPECTOR: [signature]

HOLE NO. MW-D

SHEET 20 OF 33 SHEETS

V.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
	176	SAND(SP) same as above					Alluvium
	177	silty SAND(SM) see description below					Alluvium
	178						
	179	Core 179 - 180.4: Silty sand (SM). V. fine-fine grained, round-sub-angular qtz. Soft, unconsolidated. Reddish yellow (5YR 6/6). Damp, w/ clast of well indurated, fine ~~SS~~ grained, carbonate cemented SS recovered (1.25" x 3")	B.Z. = 0.0 H.S. = 0.0			6 20 50/5"	Sample @ 1545 N = 70 Rec = 1.4/1.4'
	180						
	181						
	182						
	183						
	184						
	185						

HTW DRILLING LOG

HOLE NO. MW-0

PROJECT CAFB LF-3/4 RFI Ph II

INSPECTOR Brian J. Pirly

SHEET 21 OF 33 SHEETS

ELEV. a.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
		Silty SAND (SM) same as above					Alluvium
	186						
	187						
	188						
	189						
		Core					
	190	190-191.4: Silty Sand (SM) Reddish yellow (5YR 6/6). Moist v. fine-fine grained qtz, round to subangular, soft, unconsolidated, non-calcre.	BZ = 0.0 H.S. = 0.0 BH = 0.0			14 33 50/4"	Sample @ 1615 N = 83 Rec = 1.4/1.4
	191						
	192						
	193						
	194						
	195						

HTW DRILLING LOG

PROJECT: CAFB LF 3/4 RFI Ph II

INSPECTOR: [illegible]

HOLE NO.: MW-0

SHEET 22 OF 33 SHEETS

ELEV. a.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
	195	silty SAND (SM) same as above					Alluvium
		Cuttings 194-200': Cuttings continue to show cobbles and clasts of $CaCO_3$ cemented, fine, rounded ss.					
	196						
	197						
	198						
	199						
	200	Core					
		200 - 201.6: Silty sand (SM) as above, with erratic pebbles and gravel of lime cemented fine ss at 200.4'-200.8' & @ 201 - 201.6. Moist, soft & unconsolidated.	HS = 0.0			12 35 50/5"	Sampled @ 1640 N = 85 Rec = 1.6/1.5'
	201						
	202						
	203						
	204						

HTW DRILLING LOG

PROJECT: CAFB LF 3/4 RFI Ph II

INSPECTOR: [illegible]

HOLE NO. MW-0

SHEET 23 OF 33 SHEETS

EV.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
		Silty SAND (SM) Same as above					Alluvium
	205	202-210: Cuttings show erratic cobbles and gravel of limey sandstone in soft, silty sand as above.					
	206						
	207						
	208						
	209						
	210	Core 210-211.5: Silty sand (SM) Strong brown (7.5 YR 5/6). Non-calcc, damp, subangular with some rounded grains. V. soft. Unconsolidated.	BZ = 0.0 HS = 0.0			6 24 39 47	Sampled @1720 N = 63 Rec = 1.5/2.0
	211						
	212						
	213						
	214						

HTW DRILLING LOG

PROJECT: CAFB LF 3/4 RFI Ph II

INSPECTOR: Brian J. Pirkl

HOLE NO.: MW-0

SHEET 24 OF 33 SHEETS

EV.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
		silty SAND (SM) same as above					Alluvium
	215						
	216						
	217						
	218						
	219						
	220	Core 220-221.3: Sandy silt as above (SM). Damp with clasts of sandstone occurring every .3-.4' in core. Sandstone is similar to unconsolidated sand matrix, except has $CaCO_3$ cemat.	B.Z. = 0.0 H.S = 0.0			28 47 50/4"	Sampled @ 1745 N = 97 Rec = 1.3/1.4
	221						
	222						
	223						

HTW DRILLING LOG

HOLE NO. MW-0
SHEET 25 OF 33 SHEETS

PROJECT: CAFB LF 3/4 RFI Ph II
INSPECTOR: Brian J. Rudy

ELEV.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
		Silty SAND (SM) same as above					Alluvium
	224	221-230: SM as above, from cuttings.					
	225						
	226						
	227						
	228						
	229						
	230	Core 230-231.5: Sandy Silt (SM) with erratic limey cobbles as above. Matrix is fine - v. fine, subround to subangular qtz. Calcic only near clasts, as they appear to be weathering. Soft, Damp.	B.Z. = 0.0 H.S. = 0.0			16 30 48 49	Sampled @ 1815 N = 78 Rec = 1.5/2.0 END of SHIFT
	231						
	232						
	233						

HTW DRILLING LOG

PROJECT: CAFB LF 3/4 RFI Ph II

INSPECTOR: Brian [illegible]

HOLE NO.: MW-0

SHEET 26 OF 33 SHEETS

ELEV. a.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
		Silty SAND (SM) same as above					Alluvium
	234						
	235						
	236						
	237						
	238		PID cal. to 57 ppm (Benzene R.F.) w/ 100 ppm isobutylene.				Start Shift @ 1415, 10/27/94 after digging up diesel spill.
	239		B.G. = 0.1 B.Z. = 0.1				
	240	Core 240 - 241.7: Upper .3' is Calcic cemented fine grained SS, v. dense. Lower 1.5' is Silty Sand (SM), red yellow (7.5YR 6/6), soft and unconsolidated. Sand is round to subangular qtz, v. similar to all sand drilled to this depth.	BZ = 0.1 H.S. = 0.2 B.H. = 0.1			11 18 33 50/5"	Sampled @ 1430 N = 51 Rec. = 1.7/1.9'
	241						
	242						

PROJECT: CAFB LF 3/4 Ph II RFI HOLE NO. MW-0

HTW DRILLING LOG

HOLE NO. MW-0

PROJECT CAFB LF 3/4 RFI Ph II

INSPECTOR [illegible]

SHEET 27 OF 33 SHEETS

ELEV. a.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
		Silty SAND (Sm) same as above					Alluvium
	243						
	244						
	245	245 - Cuttings show thicker bed of calcic ss with dissolution textures, .5-1.0' thick at this depth. Paleocaliche, or lakebed, or calcic member?					
	246						
	247						
	248						
	249						
	250	Core 250-251.8: Silty sand (Sm), as above. Reddish yellow (7.5 YR 6/6). Calcic ss clast 2"x2" @ 250-250.1', followed by .8' of soft sand and silt with abnt chalky wht $CaCO_3$ matrix (caliche?)	BZ = 0.2 H.S = 0.1			17 27 35 36	Sample @ 1510 N = 62 Rec = 1.8/2.0
	251						
		250.8-251.8 - Sandy silt, (Sm) non-calcic, v. fine-fine, subangular to round qtz grains soft, uncons solidated DAMP.					
	252						

PROJECT CAFB LF 3/4 ph II RFI HOLE NO. MW-0

HTW DRILLING LOG

PROJECT: CAFB LF 3/4 RFI Ph II

INSPECTOR: Brian G. Rolly

HOLE NO.: MW-0

SHEET 28 OF 33 SHEETS

ELEV. a.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
		Silty SAND (SM) same as above					Alluvium
	253						
	254						
	255						
	256						
	257						
	258	Core 258-259.7': Silty Sand (SM) w/ erratic sandstone cobbles. Light brown (7.5 YR 6/4), v. fine to fine sand w/ subangular to round grains. Equal parts sand to silt. Soft, non-calcic except for clasts and cobbles.	BZ = 0.2 H.S = 0.0			14 34 45 50	Sample @ 1550 N = 79 Rec = 1.7/2.0
	259						
	260						
	261						

HTW DRILLING LOG

PROJECT: CAFB LF 3/4 RFI Ph II

INSPECTOR: Brian [illegible]

HOLE NO. MW-0

SHEET 29 OF 33 SHEETS

EV.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
		silty SAND (SM) same as above					Alluvium
	262						
	263						
	264						
	265	SAND (SP) see description below					Alluvium
	266						
	267						
	268	Core					
		268-269.5: Poorly graded sand, fine, w/ sharp contact w/ med. grained, well rounded, soft sand @ 268.8'. Very clean, <5% silt, non-calcre, v. well sorted. Clast of weak red claystone @ 268.5-268.8.	BZ = 0.0 H.S. = 0.0			14 34 50/4"	Sample @ 1632 N = 84 Rec = 1.5/1.3'
	269						
	270						
	271						

HTW DRILLING LOG

PROJECT: CAFB LF 3/4 RFI Ph II

INSPECTOR: Brian J. [illegible]

HOLE NO.: MW-0

SHEET 30 OF 53 SHEETS

ELEV. a.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
		SAND (SP) same as above					Alluvium
		Cuttings					
	272	270-279: Poorly graded sand (SP). Very well sorted, fine, pink (7.5YR 8/2) sand with occ.					
	273	clasts of claystone up to 1" diameter, apparently floating in the sand matrix. Claystone is weak red. Damp.					
	274						
	275						
	276						
	277						
	278						
						▼	Water level @ 278.2' after taking 279-281' sample. Stabilized @ 278.3 after 13 hrs
		Core					
	279	279.1-289.1: Fine to med. grained, poorly graded sand (SP) w/ Appx 10% Silt. Round-subang. Qtz grains. Brown (7.5 YR 5/4).	BZ = 0.0 BH. = 0.0 HS. = 0.0	MW-0 280		10 23 33 39	Sample @ 1710 N = 56 Rec = 2.0/2.0'
	280	Erratic clasts of $CaCO_3$ cemented SS at top of run.					
		Saturated:					

HTW DRILLING LOG

PROJECT: CAFB LF 3/4 RFI Ph II

INSPECTOR: [illegible]

HOLE NO.: MW-0

SHEET 31 OF 33 SHEETS

ELEV. a.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
		SAND (SP) Same as above					Alluvium sample continued from above
	281						
	282						
	283						
	284						
	285						
	286						
	287	Core 287.7-289.9: Poorly graded sand (SP). Very well sorted med. grained sand, clean. Round to subround qtz. Reddish brown (5 YR 5/4). Soft, unconsolidated, Wet (saturated). Dark red brown clay @ 289.5-289.6 (.1'), difficult to determine if clay is a clast or a lens.	BZ = 0.0 HS = 0.0				
	288			MW-0 290		6 18 31 50/5"	Sample @ 1820 Rec = 2.2/2.0 N = 49
	289						END of Shift @ 1830. Rising head test will cont. overnight.
	290						

HTW DRILLING LOG

PROJECT: CAFB LF 3/4 RFI

INSPECTOR: [signature]

HOLE NO. MW-0

SHEET 32 OF 33 SHEETS

a. DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
	SAND (SP) same as above	PID calib. to 57 ppm Benzene R.F. w/ 100ppm isobutylene. BG = 0.0 BZ = 0.0				Alluvium 10/28/94 - Start Shift @ 720
291						
292						
293						
294						
295						
296						
297						
298						
299	Core 299-299.5: Poorly graded Sand, (SP) med. grained, reddish brown (5YR 5/4). Saturated, soft, Round-subangular, Clst cobbles & chert in Sample	HS = 0.1	MW-0 300		19 50/4"	Sample @ 920 N = 50+ Rec = 2.0 w/ 1.5' sluff.

PROJECT: CAFB LF 3/4, LII RFI

HOLE NO. MW-0

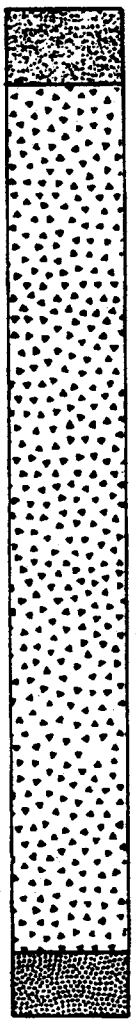
DRAFT

RADIAN CORPORATION

Log of Drilling Operations
Deep Soil Boring #SB-3A

Location Landfill #3 Borehole A
Log Recorded by D. Richmann
Type Drill Rig and Operator Mobile B-61 Hollow-Stem Auger - Winnek, Inc.

Project Cannon AFB - Phase II Stage I
Beginning 13 February 1985 and end 13 February 1985 of drilling operation
Sampling Interval (Estimated) 5 (ft)



Depth (ft)	Core Sample Interval/ID	Type of Sample Taken*	Lithologic Description
0-	SB-3A-1	ST	TOPSOIL; red-brown, medium sandy loam w/ minor calcite fill to 3';bright orange fine, well sorted sand from 3'-4.5'.
5-	SB-3A-2	ST	CALICHE; light pink, fine sand with abundant calcite cement; very soft and friable.
10-		G	CALICHE; pinkish-tan, fine to medium sand w/abundant calcite cemented nodules.
15-		G	CALICHE; similar to above with more nodules.
20-		G	CALICHE; same as above.
25-		ST	CALICHE; same as above.
30-		G	SANDSTONE;light pink, fine to medium sand, well cemented w/calcite and diagenetic quartz; very hard.
35-		ST	CALICHE; light pink, very hard calcrete.
40-		G	CALICHE; tan fine, well sorted, sand and calcite cement; soft and friable.
45-		ST	CALICHE; light pink, very hard "calcrete".
50-		G	SAND; transitional from caliche; tan, fine-medium, mod. sorted w/minor cemented nodules.
55-	SB-3A-3	SS	SAND; tan, fine-medium, moderately sorted, unconsolidated sand.
60-			

Borehole SB-3A was grouted from 59.5 ft (TD) to the surface using 8 bags of Portland Type I neat cement.

*ST = Shelby tube; SS = split-spoon; G = grab.

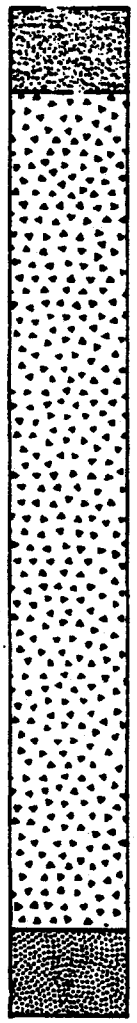
DRAFT

RADIAN CORPORATION

Log of Drilling Operations
Deep Soil Boring #SB-3B

Location Landfill #3 Borehole B
Log Recorded by D. Richmann
Type Drill Rig and Operator Mobile B-61 Hollow-Stem Auger - Winnek, Inc.

Project Cannon AFB - Phase II Stage I
Beginning 14 February 1985 and end 14 February 1985 of drilling operation
Sampling Interval (Estimated) 5 (ft)



Depth (ft)	Core Sample Interval/ID	Type of Sample Taken*	Lithologic Description
0-	SB-3B-1	ST	TOPSOIL; Red-brown, medium loamy sand, moderately sorted and rounded to 3'; underlain by orange well sortd medium sand.
5-	SB-3B-2	ST	CALICHE; Light pink, fine sand, mod. sorted with abundant calcite cement; friable.
10-		G	CALICHE; Pinkish-tan, fine sand with calcite cement and minor calcareous nodules.
15-		G	CALICHE; Similar to above, but with more abundant (25%) nodules.
20-		G	CALICHE; As above.
25-		G	CALICHE; Similar to above, but with fewer nodules.
30-		G	CALICHE; As above.
35-		G	CALICHE; As above.
40-		G	CALICHE; Similar to above, but including hard, partially silica-cemented sandstone fragments.
45-		G	CALICHE; As above.
50-		G	CALICHE; Pinkish-tan, fine sand, moderately well sorted, with abundant calcite cement.
55-	SB-3B-3	ST	SAND; Tan, fine to medium, moderately sorted sand; unconsolidated.
60-			

Borehole SB-3B was grouted from 58.5 ft (TD) to the surface using 8 bags of Portland Type I neat cement.

*ST = Shelby tube; SS = split-spoon; G = grab.

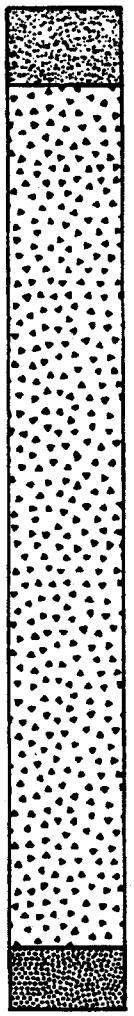
DRAFT

RADIAN CORPORATION

Log of Drilling Operations
Deep Soil Boring #SB-3C

Location Landfill #3 Borehole C
Log Recorded by D. Richmann
Type Drill Rig and Operator Mobile B-61 Hollow-Stem Auger - Winnek, Inc.

Project Cannon AFB - Phase II Stage I
Beginning 14 February 1985 and end 14 February 1985 of drilling operation
Sampling Interval (Estimated) 5 (ft)



Depth (ft)	Core Sample Interval/ID	Type of Sample Taken*	Lithologic Description
0-	SB-3C-1	ST	TOPSOIL; red-brown to orange, moderately sorted, medium loamy sand.
5-	SB-3C-2	ST	CALICHE; light pink, fine sand, moderately sorted, calcite cemented; friable.
10-		G	CALICHE; pinkish-tan, medium sand; mod. sorted w/abundant white calcareous nodules.
15-		G	CALICHE; similar to above, but finer grained and better sorted.
20-		G	CALICHE; pink, fine to very fine sand with abundant calcite cement and hard calcareous nodules.
25-		G	CALICHE; brown, fine sand, well sorted and rounded with about 80% hard calcareous nodules.
30-		G	CALICHE; similar to above; slightly lighter colored and fewer nodules.
35-		G	CALICHE; pinkish tan, fine to very fine sand with abundant calcite cement; very soft and friable.
40-		G	CALICHE; similar to above, with hard nodules.
45-		G	CALICHE; pink, fine to very fine sand, with some large, partially silicified nodules.
50-		G	CALICHE; similar to above but without large nodules.
55-	SB-3C-3	SS	SAND; tan, medium sand, rounded, moderately sorted, unconsolidated.
60-			

Borehole SB-3C was grouted from 59.5 ft (TD) to the surface using 8 bags of Portland Type I neat cement.

*ST = Shelby tube; SS = split-spoon; G = grab.

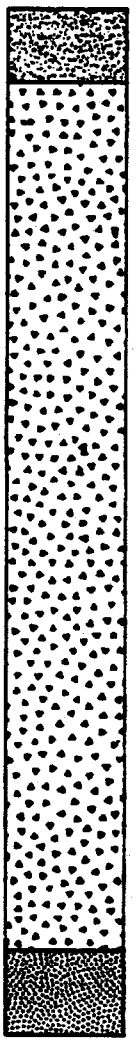
DRAFT

RADIAN CORPORATION

Log of Drilling Operations
Deep Soil Boring #SB-3D

Location Landfill #3 Borehole D
Log Recorded by D. Richmann
Type Drill Rig and Operator Mobile B-61 Hollow-Stem Auger - Winnek, Inc.

Project Cannon AFB - Phase II Stage I
Beginning 16 February 1985 and end 16 February 1985 of drilling operation
Sampling Interval (Estimated) 5 (ft)



Depth (ft)	Core Sample Interval/ID	Type of Sample Taken*	Lithologic Description
0-	SB-3D-1	ST	TOPSOIL; Brown to orange-brown, medium loamy sand with pore-filling calcite in uppermost 3"; very soft from 2-4'.
5-	SB-3D-2	ST	CALICHE; Pinkish-tan, fine to medium sand, calcite-cemented; hard.
10-		G	CALICHE; As above.
15-		G	CALICHE; Similar to above; more friable.
20-		G	CALICHE; Similar to above, but with hard white calcareous nodules (20%).
25-		G	CALICHE; Brown calcareous nodules with internal laminations.
30-		G	CALICHE; As above.
35-		G	CALICHE; Pinkish-tan, fine to medium sand with calcite cement and hard calcareous nodules.
40-		G	CALICHE; Pink, fine sand with abundant calcite cement and minor calcareous nodules, friable.
45-		G	CALICHE; Light pink, very fine sand and abundant calcite cement; very soft and friable.
50-		G	CALICHE; As above.
55-	SB-3D-3	SS	SAND; Tan, medium quartz sand; mostly unconsolidated with patchy calcite cement in upper 6" of core.
60-			

Borehole SB-3D was grouted from 59.5 ft (TD) to the surface using 8 bags of Portland Type I neat cement.

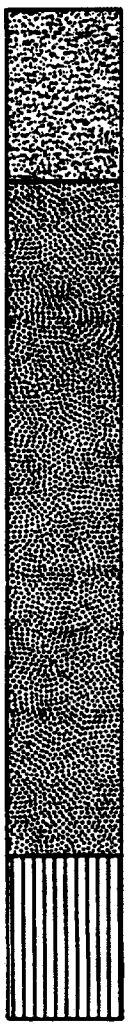
*ST = Shelby tube; SS = split-spoon; G = grab.

DRAFT

Log of Drilling Operations
Deep Soil Boring #3E

Location Site 3E Landfill No. 1
Log Recorded by T.K. Walters
Type Drill Rig and Operator Mobile B-61 Hollow-Stem Auger - Winnek, Inc.

Project Cannon AFB-Phase II Stage I
Beginning February 23, 1985 and end Feb. 23, 1985 of drilling operation
Sampling Interval (Estimated) 5 (ft)



Depth (ft)	Graphic Log	Core Sample Interval/ID	Type of Sample Taken*	Lithologic Description
0-			G	TOPSOIL; with debris, very disturbed, some fill dirt mixed, caliche contact 3', caliche is mixed with silt/clay.
5-		SB-3E-1	ST	CALICHE; dark brown discolored, w/gray clay, becoming thinly bedded playa lake sediments 7-10'.
10-		SB-3E-2	ST	SAND; dark brown, silty, with intermixed calcite, moist, some remnant bedding.
15-			G	SAND; dark brown, non-calcareous, moist, playa lake sediments.
20-			G	SAND; red-brown, silty, moist, non-calcareous, no caliche present.
25-			G	SAND; red-brown, silty, with clay, moist, moderately sorted, fining downward.
30-			G	SAND; silty, with silty clay, moist, plasticity, becoming more sandy with depth, out of moist zone at 32'.
35-			G	SAND; dark brown, silty, slightly calcareous, slightly moist.
40-			G	SAND; fine-medium grained, unconsolidated, w/calcite matrix, moderately sorted, hard caliche streak, 42'.
45-				SAND; silty, fine grained, unconsolidated, very well sorted, subrounded, dry.
50-			G	SILT; buff-brown, unconsolidated, very well sorted, subrounded, dry.
55-		SB-3E-3	ST	SILT; buff, unconsolidated, well sorted, subrounded.
60-				

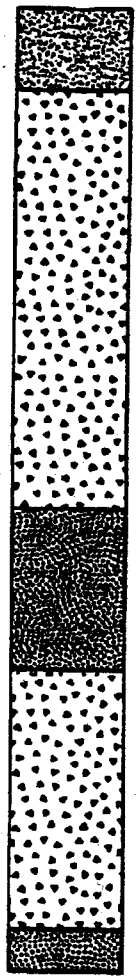
Borehole 3E was grouted from 59 1/2 ft(TD) to the surface with 8 bags of Portland Type I neat cement.
*ST = Shelby tube; SS = split spoon; G = grab.

RADIAN CORPORATION

Log of Drilling Operations
Deep Soil Boring #SB-3F

Location Landfill #3 Borehole F
Log Recorded by D. Richmann
Type Drill Rig and Operator Mobile B-61 Hollow-Stem Auger - Winnek, Inc.

Project Cannon AFB - Phase II Stage I
Beginning 15 February 1985 and end 15 February 1985 of drilling operation
Sampling Interval (Estimated) 5 (ft)



Depth (ft)	Graphic Log	Core Sample Interval/ID	Type of Sample Taken*	Lithologic Description
0-		SB-3F-1	ST	TOPSOIL; red-brown, medium loamy sand over brown to orange, fine, moderately sorted, very compact sand.
5-		SB-3F-2	ST	CALICHE; pinkish-tan, moderately sorted medium sand with calcite cement.
10-			G	CALICHE; similar to above with hard white calcareous nodules.
15-			G	CALICHE; light pink, fine sand with abundant calcite cement; very soft, and hard white calcareous nodules.
20-			G	CALICHE; same as above.
25-			G	SAND; transitional-pinkish-tan, weakly consolidated, well sorted, fine sand with minor calcite cement.
30-			G	SAND; same as above.
35-			G	CALICHE; transitional-similar to above w/large, well rounded white calcareous nod. at 39'; calcite cement in cuttings.
40-			G	CALICHE; similar to above, but with hard partially silicified nodules.
45-			G	CALICHE; pinkish tan fine sand with abundant hard partially silicified nodules.
50-			G	SAND; tan, fine-medium sand, moderately sorted; unconsolidated.
55-		SB-3F-3	SS	SAND; same as above.
60-				

Borehole SB-3F was grouted from 57 ft (TD) to the surface using 8 bags of Portland Type I neat cement.

*ST = Shelby tube; SS = split-spoon; G = grab.

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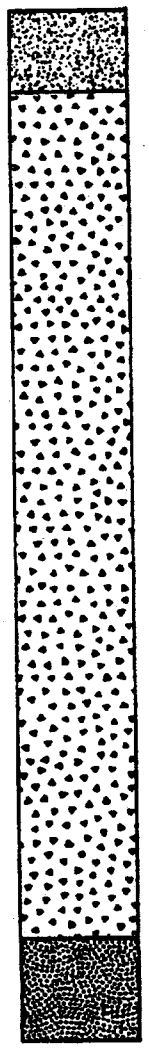
RADIAN CORPORATION

Log of Drilling Operations
Deep Soil Boring #SB-3G

Location Landfill #3 Borehole G
Log Recorded by D. Richmann
Type Drill Rig and Operator Mobile B-61 Hollow-Stem Auger - Winnek, Inc.

Project Cannon AFB - Phase II Stage I
Beginning 15 February 1985 and end 15 February 1985 of drilling operation
Sampling Interval (Estimated) 5 (ft)



Depth (ft)	Core Sample Interval/ID	Type of Sample Taken*	Lithologic Description
0-	SB-3G-1	ST	TOPSOIL; brown to red-brown, fine loamy sand with some silt and minor calcite veins.
5-	SB-3G-2	ST	CALICHE; light pink, fine sand cemented with calcite; hard and dense.
10-		G	CALICHE; pinkish-tan, fine sand with calcite cement and hard calcareous nodules.
15-		G	CALICHE; same as above.
20-		G	CALICHE; light pink, fine to very fine sand w/abundant calcite cement; very soft & friable; minor nodules.
25-		G	CALICHE; same as above.
30-		G	CALICHE; same as above.
35-		G	CALICHE; same as above.
40-		G	CALICHE; similar to above, but w/large partially silicified nodular fragments.
45-		G	CALICHE; similar to above, but with small calcareous nodules.
50-		G	CALICHE; transitional-pinkish tan, fine to medium, well sorted sand with calcite cement and minor nodules.
55-	SB-3G-3	SS	SAND; tan, medium sand, moderately sorted, well rounded, unconsolidated.
60-			

Borehole SB-3G was grouted from 59.5 ft (TD) to the surface using 7 bags of Portland Type I neat cement.

*ST = Shelby tube; SS = split-spoon; G = grab.

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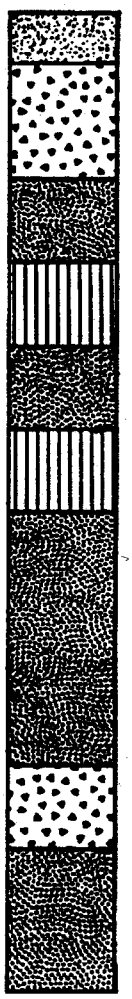
CORPORATION

Log of Drilling Operations
Deep Soil Boring #3H

Location Site 3H Landfill No. 3
Log Recorded by T.K. Walters
Type Drill Rig and Operator Mobile B-61
Hollow-Stem Auger - Winnek, Inc.

Project Cannon AFB-Phase II Stage I
Beginning February 22, 1985 and end
Feb 22, 1985 of drilling operation
Sampling Interval (Estimated) 5(ft)



Depth (ft)	Core Sample Interval/ID	Type of Sample Taken*	Lithologic Description
0–	ST-3H-1	ST	TOPSOIL; red with roots and organic matter, some surface debris, caliche and topsoil intermixed 2'-4'; caliche contact at 3',
5–	ST-3H-2	G	CALICHE; silty, buff-white, soft, loosely consolidated with calcite, dry.
10–		ST	SAND; silty, buff-brown with calcite matrix, dry, moderately sorted.
15–		G	SILT; buff-white, "powdery", texture, very well sorted, dry.
20–		G	SAND; buff-white, silty, with caliche nodules 1/4" diameter, poorly sorted, loosely consolidated.
25–		G	SILT; with calcite cement, some caliche nodules present, well sorted, slightly consolidated.
30–		G	SAND; buff-brown, silty, fine-medium grained, poorly sorted, with cemented grains, coarser than above.
35–		G	SAND; light brown, fine-coarse, coarser than above, decrease in calcite, color change 37'.
40–		G	SAND; brown, fine-medium grained, oxidized moderately sorted, subrounded.
45–		G	CALICHE; with sand, cemented, fine-medium grained, brown, poorly sorted, nodules 1" diameter.
50–		G	SAND; fine grained, brown, well sorted, unconsolidated, no caliche present, calcite matrix.
55–	ST-3H-3	SS	SAND; fine-medium brown, unconsolidated, poorly sorted, 31 counts/6".
60–			

Borehole 3H was grouted from 58 ft(TD) to the surface with 7 bags of Type I neat cement.

*ST = Shelby tube; SS = split-spoon; G = grab

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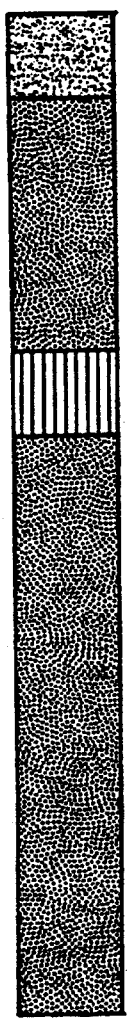
CORPORATION

Log of Drilling Operations
Deep Soil Boring #3I

Location Site 3I Landfill No. 3
Log Recorded by T.K. Walters
Type Drill Rig and Operator Mobile B-61
Hollow-Stem Auger - Winnek, Inc.

Project Cannon AFB-Phase II Stage I
Beginning February 22, 1985 and end
Feb 22, 1985 of drilling operation
Sampling Interval (Estimated) 5(ft)

Depth (ft)	Graphic Log	Core Sample Interval/ID	Type of Sample Taken *	Lithologic Description
0-		SB-3I-1	ST	TOPSOIL; with caliche, 1.5'2.0', moist, interbedded silt, 4'-5'.
5-		SB-3I-2	ST	SAND; light brown, dry, some caliche, fine-medium grained, well sorted, becoming more silty with depth.
10-			G	SAND; dark brown, silty, moist.
15-			G	SAND; light gray brown, silty, caliche, nodules, dry.
20-			G	SILT; buff-white, calcite matrix, fine grained, possible dune.
25-			G	SAND; buff-white silty, stringers of well indurated sand, caliche nodules.
30-			G	SAND; light brown, silty, moderately sorted, subrounded.
35-			G	SAND; light brown, silty, nodules (10%), medium grained, well sorted, subrounded.
40-			G	SAND; brown, medium grained, poorly sorted, no caliche present, moist.
45-			G	SAND; brown, fine grained, moderately sorted, with 5% caliche, soft.
50-			G	SAND; silty, brown, caliche nodules, caliche 5%.
55-		SB-3I-3	SS	SAND; brown, fine grained, well sorted decrease in caliche, blow counts; 33/6", 40/6", 57/6", 90/6".
60-				

Borehole 3I was grouted from 59 1/2 ft(TD) to the surface with 7 bags of Type I neat cement.

*ST = Shelby tube; SS = split-spoon; G = grab

HTW DRILLING LOG

60

HOLE NO.	3J
SHEET	1 OF 2 SHEETS
1. COMPANY NAME	Radian Corporation
2. DRILLING CONTRACTOR	SHB
3. PROJECT	Cannon AFB Landfill 3 RI
4. LOCATION	Clovis, N.M.
5. NAME OF DRILLER	Coke Elms
6. MANUFACTURER'S DESIGNATION OF DRILL	CME-75
7. SIZES & TYPES OF DRILLING & SAMPLING EQUIPMENT	6-5/8 Inch I.D. HSA; 3"x 24" Stainless Steel Split Spoon Sampler; Augers, spoons, and drilling equipment decontaminated before use.
8. HOLE LOCATION	1232675.0 North 813185.7 East
9. SURFACE ELEVATION	4270.2'
10. DATE STARTED	7/23/92
11. DATE COMPLETED	7/23/92
12. OVERBURDEN THICKNESS	N/A
15. DEPTH GROUNDWATER ENCOUNTERED	N/A
13. DEPTH DRILLED INTO ROCK	N/A
16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED	N/A
14. TOTAL DEPTH OF HOLE	62.0 Borehole
17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)	N/A

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
2	--	X	11

20. SAMPLES FOR CHEMICAL ANALYSIS	8240	METALS	8270	8080	418.1	21. TOTAL CORE REC %
11	X	X	X	X	X	81

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
Cuttings Drummed	X	--	Hole grouted	RB

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
4270.2	0	Red silt; 2-3 mm calcareous nodules; no trash	0 ppm				
4269.2							
4268.2							
4267.2							
4266.2							
4265.2	5	Buff calcareous silt; dry; no trash	0 ppm				
4264.2							
4263.2							
4262.2							
4261.2							
4260.2	10	Buff calcareous silt; no trash; dry	0 ppm				
4259.2							
4258.2							
4257.2							
4256.2							
4255.2	15	Dark tan calcareous silt; dry; no trash	0 ppm				
4254.2							
4253.2							
4252.2							
4251.2							
4250.2	20	Red mottled calcareous silt; dry; lightly cemented	2 ppm		3J-21	11-15-19-24	24" recovery
4249.2							
4248.2							
4247.2							
4246.2							
4245.2	25						

HTW DRILLING LOG

61

HOLE NO.	SHEET
3J	2 OF 2 SHEETS

PROJECT: Cannon AFB Landfill 3 RI, Clovis, N.M.

INSPECTOR: James R. Buice

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
4244.2		Calcareous silt; friable; dry	3 ppm	3J-25	3J-25.5	72-150/5	11" recovery
4243.2							
4242.2							
4241.2							
4240.2	30	Calcareous tan silt; dry; 2-3 mm calcareous nodules	3 ppm		3J-30 3J-11	29-51-100/6	3J-11 is DUP 18" recovery
4239.2							
4238.2							
4237.2							
4236.2							
4235.2	35	Buff calcareous silt; dry; friable	0 ppm		3J-35	42-83-115/6	18" recovery
4234.2							
4233.2							
4232.2							
4231.2							
4230.2	40	40'-40.5': calcareous silt moderately cemented; 40.5'-42': sandy silt; no cementation; dry	0 ppm		3J-40	15-22-38-31	MRD Split 24" recovery
4229.2							
4228.2							
4227.2							
4226.2							
4225.2	45	Lightly cemented; sandy silt; 3" calcareous nodules	0 ppm		3J-45	95-100/3	9" recovery
4224.2							
4223.2							
4222.2							
4221.2							
4220.2	50	Buff sandy calcareous silt; dry; moderately cemented	0 ppm		3J-50	88-150/5	11" recovery
4219.2							
4218.2							
4217.2		Sandy calcareous silt; tan; dry	0 ppm	3J-53.5	3J-52.5	Not recorded	18" recovery
4216.2							
4215.2	55	Buff silty sand; fine grained; dry; unconsolidated	0ppm		3J-55	20-42-60-67	24" recovery
4214.2							
4213.2							
4212.2							
4211.2							
4210.2	60	Fine grained, red, well sorted, unconsolidated sand; dry	0 ppm		3J-61	13-44-20-21	24" recovery
4209.2							
4208.2							

HTW DRILLING LOG

1. COMPANY NAME: Radian Corporation	2. DRILLING CONTRACTOR: SHB	HOLE NO. 3K; SHEET 1 OF 2 SHEETS
3. PROJECT: Cannon AFB Landfill 3 RI	4. LOCATION: Clovis, N.M.	
5. NAME OF DRILLER: Coke Elms	6. MANUFACTURER'S DESIGNATION OF DRILL: CME-75	
7. SIZES & TYPES OF DRILLING & SAMPLING EQUIPMENT: 6-5/8 Inch I.D. HSA; 3"x 24" Stainless Steel Split Spoon Sampler; Augers, spoons, and drilling equipment decontaminated before use.	8. HOLE LOCATION: 1232557.2 North 813117.4 East	
	9. SURFACE ELEVATION: 4269.2'	
	10. DATE STARTED: 7/22/92	11. DATE COMPLETED: 7/22/92
12. OVERBURDEN THICKNESS: N/A	15. DEPTH GROUNDWATER ENCOUNTERED: N/A	
13. DEPTH DRILLED INTO ROCK: N/A	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: N/A	
14. TOTAL DEPTH OF HOLE: 62.0 Borehole	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): N/A	

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
2	--	X	12

20. SAMPLES FOR CHEMICAL ANALYSIS	8240	METALS	8270	8080	418.1	21. TOTAL CORE REC %
12	X	X	X	X	X	68

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
Cuttings Drummed	X	--	Hole grouted	RB

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
4269.2	0	Red silty loam; dry; no trash					
4268.2							
4267.2			0 ppm				
4266.2							
4265.2							
4264.2	5	Buff silt; dry; no trash; 3-4 mm calcareous nodules	0 ppm				
4263.2							
4262.2							
4261.2							
4260.2							
4259.2	10						
4258.2		Dry red silt; 5-10 mm calcareous nodules; no trash	0 ppm				
4257.2							
4256.2							
4255.2							
4254.2	15						
4253.2		Red silt; no trash	0 ppm				
4252.2							
4251.2		buff silt; dry; calcareous nodules; no trash	0 ppm				
4250.2							
4249.2	20						
4248.2		White calcareous silt; very hard; friable; no trash	0 ppm		3K-20	140-60/2	6" recovery
4247.2							
4246.2		Buff silt; 2-5 mm clacareous nodules; dry; powdery	0 ppm		3K-22.5	34-166/6	12" recovery
4245.2							
4244.2	25						

HTW DRILLING LOG

63

HOLE NO. 3K

SHEET 2 OF 2 SHEETS

PROJECT: Cannon AFB Landfill 3 RI, Clovis, N.M.

INSPECTOR: James R. Buice

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
4243.2		buff calcareous silt; dry; 2-3 mm calcareous nodules	0 ppm		3K-25	21-54-150/4	10" recovery
4242.2							
4241.2							
4240.2							
4239.2	30	Nodular calcareous buff silt; very hard; dry; friable	0 ppm		3K-30	117-200/8	8" recovery
4238.2							
4237.2							
4236.2							
4235.2							
4234.2	35	Friable, buff calcareous silt; dry	0 ppm		3K-36	117-200/2	8" recovery
4233.2							
4232.2							
4231.2							
4230.2							
4229.2	40	buff, dry calcarous silt	0 ppm		3K-40 3K-10	37-40-45-50	3K-10 is DUP 24" recovery
4228.2							
4227.2							
4226.2							
4225.2							
4224.2	45	Buff silt; calcareous	0 ppm		3K-45	40-55-70-100	MRD Split 24" recovery
4223.2							
4222.2							
4221.2							
4220.2							
4219.2	50	Buff sandy silt; dry; lightly cemented	0 ppm		3K-51	37-54-150/6	19" recovery
4218.2							
4217.2							
4216.2		Buff calcareous silt	0 ppm	3K-52.5	No Sample	33-200/6	12" recovery
4215.2							
4214.2	55	buff sandy silt; dry	0 ppm		3K-56	18-22-30-47	24" recovery
4213.2							
4212.2							
4211.2		Red/buff silty sand; fine grained; unconsolidated; dry	0 ppm	3K-58	3K-59	12-27-30-38	24" recovery
4210.2							
4209.2	60	60-61.5': red silty sand; dry; 61.5-62': Calcareous silt; very hard; friable; dry	0 ppm		3K-61	8-34-48-52	24" recovery
4208.2							
4207.2							

HTW DRILLING LOG

HOLE NO.	3L
SHEET	1 OF 2 SHEETS
1. COMPANY NAME	Radian Corporation
2. DRILLING CONTRACTOR	SHB
3. PROJECT	Cannon AFB Landfill 3 RI
4. LOCATION	Clovis, N.M.
5. NAME OF DRILLER	Coke Elms
6. MANUFACTURER'S DESIGNATION OF DRILL	CME-75
7. SIZES & TYPES OF DRILLING & SAMPLING EQUIPMENT	6-5/8 Inch I.D. HSA; 3"x 24" Stainless Steel Split Spoon Sampler; Augers, spoons, and drilling equipment decontaminated before use.
8. HOLE LOCATION	1232466.9 North 812918.4 East
9. SURFACE ELEVATION	4269.4'
10. DATE STARTED	7/21/92
11. DATE COMPLETED	7/22/92
12. OVERBURDEN THICKNESS	N/A
13. DEPTH DRILLED INTO ROCK	N/A
14. TOTAL DEPTH OF HOLE	62.0 Borehole
15. DEPTH GROUNDWATER ENCOUNTERED	N/A
16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED	N/A
17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)	N/A

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
2	--	X	13

20. SAMPLES FOR CHEMICAL ANALYSIS	8240	METALS	8270	8080	418.1	21. TOTAL CORE REC %
12	X	X	X	X	X	68

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
Cuttings Drummed	X	--	Hole grouted	[signature]

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
4269.4	0	Red silt; dry; 3-4 mm calcareous nodules; no trash					
4268.4							
4267.4			0 ppm				
4266.4							
4265.4							
4264.4	5	Buff silt; trash; boot heel; beer can; plastic bag	0 ppm				
4263.4							
4262.4							
4261.4							
4260.4							
4259.4	10	Red silt; dry; paper; plastic; glass	0 ppm				
4258.4							
4257.4							
4256.4							
4255.4							
4254.4	15	Red/buff calcareous silt; dry; no trash	0 ppm				
4253.4							
4252.4							
4251.4							
4250.4							
4249.4	20	Calcareous silt; dry; cemented; boot heel at 20'	0 ppm	3L-20	3L-21	25-112-135/6	18" recovery
4248.4							
4247.4							
4246.4		Light buff calcareous silt; dry; moderately cemented	0 ppm		3L-23.5	40-40-46-72	24" recovery
4245.4							
4244.4	25						

HTW DRILLING LOG

HOLE NO. 3L

PROJECT: Cannon AFB Landfill 3 RI, Clovis, N.M.

INSPECTOR: James R. Buice

SHEET 2 OF 2 SHEETS

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
4243.4		White calcareous silt; dry; friable; 6" of 18 gauge wire at 26.08'; piece of plastic	0 ppm		3L-25	67-72-100/6	12" recovery
4242.4							
4241.4							
4240.4							
4239.4	30	Calcareous silt; red mottling in non-calcareous areas; friable; dry	0 ppm		3L-30	34-133/5	10" recovery
4238.4							
4237.4							
4236.4							
4235.4							
4234.4	35	Red/buff calcareous silt; very hard; friable; No sample collected	0 ppm			36-150/4	3" recovery
4233.4							
4232.4							
4231.4		Red/buff sandy silt; calcareous; friable; dry	0 ppm		3L-38 3L-09	30-16-7-18	3L-09 is DUP 20" recovery
4230.4							
4229.4	40	Sandy calcareous silt; light red/buff; dry; 1-2 mm calcareous nodules	0 ppm		3L-41	15-31-42-47	MRD Split 24" recovery
4228.4							
4227.4							
4226.4		Buff calcareous silt; powdery; 5-8 mm nodules; dry	0 ppm		3L-43	19-100/5	12" recovery
4225.4							
4224.4	45	Powdery calcareous silt; No sample collected	0 ppm			200/4	4" recovery
4223.4							
4222.4							
4221.4		Calcareous buff/red mottled silt; 1-2 mm calcareous nodules; dry; friable	0 ppm	3L-47.5	3L-48.5	19-26-39-100	24" recovery
4220.4							
4219.4	50						
4218.4							
4217.4							
4216.4		Buff sandy calcareous silt; dry; powdery; lightly cemented	0 ppm		3L-52.5	63-137/5	12" recovery
4215.4							
4214.4	55	Red silty sand; dry; unconsolidated; fine grained	0 ppm		3L-56	20-30-45-54	24" recovery
4213.4							
4212.4							
4211.4							
4210.4							
4209.4	60	Red, fine grained, silty sand; dry; unconsolidated	3 ppm		3L-61	13-19-26-37	24" recovery
4208.4							
4207.4							

HTW DRILLING LOG

1. COMPANY NAME: Radian Corporation	2. DRILLING CONTRACTOR: SHB	HOLE NO. 3M; SHEET 1 OF 2 SHEETS
3. PROJECT: Cannon AFB Landfill 3 RI	4. LOCATION: Clovis, N.M.	
5. NAME OF DRILLER: Coke Elms	6. MANUFACTURER'S DESIGNATION OF DRILL: CME-75	
7. SIZES & TYPES OF DRILLING & SAMPLING EQUIPMENT: 6-5/8 Inch I.D. HSA; 3"x 24" Stainless Steel Split Spoon Sampler; Augers, spoons, and drilling equipment decontaminated before use.	8. HOLE LOCATION: 1232465.3 North 812804.3 East	
	9. SURFACE ELEVATION: 4268.3'	
	10. DATE STARTED: 7/20/92	11. DATE COMPLETED: 7/21/92
12. OVERBURDEN THICKNESS: N/A	15. DEPTH GROUNDWATER ENCOUNTERED: N/A	
13. DEPTH DRILLED INTO ROCK: N/A	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: N/A	
14. TOTAL DEPTH OF HOLE: 62.0 Borehole	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): N/A	

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
2	--	X	14

20. SAMPLES FOR CHEMICAL ANALYSIS	8240	METALS	8270	8080	418.1	21. TOTAL CORE REC %
12	X	X	X	X	X	67

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
Cuttings Drummed	X	--	Hole grouted	

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
4268.3	0	Surface sample collected before drilling; Red silty loam; dry					
4267.3		0-5' Tan calcareous silt; 5-10 mm nodules; no trash; dry	0 ppm		3M-SFC		
4266.3							
4265.3							
4264.3							
4263.3	5	Calcareous silt; bread wrapper; styrofoam; insulated wire; dry	0 ppm				
4262.3							
4261.3							
4260.3							
4259.3							
4258.3	10	Red sandy silt; dry; pieces of rubber tire; glass; bread wrapper; 5 mm calcareous nodules	0 ppm				
4257.3							
4256.3							
4255.3							
4254.3							
4253.3	15	Red silt; dry; 3-4 mm nodules	0 ppm				
4252.3							
4251.3							
4250.3							
4249.3							
4248.3	20	Buff calcareous silt; lightly cemented; dry	0 ppm		3M-21	21-35-25-26	24" recovery
4247.3							
4246.3							
4245.3		Buff calcareous silt; dry; lightly cemented	0 ppm	3M-23	3M-23.5	44-60-165/6	18" recovery
4244.3							
4243.3	25						

HTW DRILLING LOG

HOLE NO. 3M

SHEET 2 OF 2 SHEETS

PROJECT: Cannon AFB Landfill 3 RI, Clovis, N.M.

INSPECTOR: James R. Buice

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
4242.3		Light tan sandy silt; lightly cemented; 2-3 mm nodules	0 ppm		3M-25	10-42-40-33	24" recovery
4241.3							
4240.3							
4239.3							
4238.3	30	Buff sandy silt; moderately cemented; dry	0 ppm		3M-30.5	34-98-168/5	18" recovery
4237.3							
4236.3							
4235.3							
4234.3							
4233.3	35	Sandy silt; buff; unconsolidated	3 ppm		3M-35	4-8-5-11	MRD Split 24" recovery
4232.3							
4231.3							
4230.3		Red silty sand; dry; unconsolidated; 3-4 mm calcareous nodules	0 ppm	3M-37.5	3M-37.5 3M-08	4-11-16-26	3M-08 is DUP 24" recovery
4229.3							
4228.3	40	Red unconsolidated silty sand; 1-2 mm calcareous nodules	2 ppm		3M-41	8-11-14-32	24" recovery
4227.3							
4226.3							
4225.3		NO RECOVERY				Hammer 15 min.	0 recovery
4224.3							
4223.3	45	NO RECOVERY				Hammer 15 min.	0 recovery
4222.3							
4221.3							
4220.3		NO RECOVERY				Hammer 15 min.	0 recovery
4219.3							
4218.3	50	Buff calcareous silt; dry; lightly cemented	0 ppm		3M-50	Not recorded	10" recovery
4217.3							
4216.3							
4215.3		Buff calcareous silt; dry; friable	0 ppm		3M-52.5	69-231/3	12" recovery
4214.3							
4213.3	55	Red, unconsolidated, fine grained, well sorted, sand; dry	0 ppm		3M-56	5-16-21-25	24" recovery
4212.3							
4211.3							
4210.3							
4209.3							
4208.3	60	Red, unconsolidated, fine grained sand; dry	0 ppm		3M-60	16-17-22-29	24" recovery
4207.3							
4206.3							

HTW DRILLING LOG

HOLE NO.	3MM
1. COMPANY NAME	Radian Corporation
2. DRILLING CONTRACTOR	SHB
SHEET	1 OF 2 SHEETS
3. PROJECT	Cannon AFB Landfill 3 RI
4. LOCATION	Clovis, N.M.
5. NAME OF DRILLER	Coke Elms
6. MANUFACTURER'S DESIGNATION OF DRILL	CME-75
7. SIZES & TYPES OF DRILLING & SAMPLING EQUIPMENT	6-5/8 Inch I.D. HSA; 3"x 24" Stainless Steel Split Spoon Sampler; Augers, spoons, and drilling equipment decontaminated before use.
8. HOLE LOCATION	1232464.9 North 812829.8 East
9. SURFACE ELEVATION	4268.4'
10. DATE STARTED	7/24/92
11. DATE COMPLETED	7/24/92
12. OVERBURDEN THICKNESS	N/A
15. DEPTH GROUNDWATER ENCOUNTERED	N/A
13. DEPTH DRILLED INTO ROCK	N/A
16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED	N/A
14. TOTAL DEPTH OF HOLE	39.5 ~~64.0~~ Borehole
17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)	N/A

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
0	–	X	5

20. SAMPLES FOR CHEMICAL ANALYSIS	8240	METALS	8270	8080	418.1	21. TOTAL CORE REC %
5	X	X	X	X	X	78

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
Cuttings Drummed	X	–	Hole grouted	[signature]

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
4268.4	0	Buff calcareous silt; unconsolidated; no trash	0 ppm				
4267.4							
4266.4							
4265.4							
4264.4							
4263.4	5	As above; pieces of plastic bag	0 ppm				
4262.4							
4261.4							
4260.4							
4259.4							
4258.4	10	As above; no trash	0 ppm				
4257.4							
4256.4							
4255.4							
4254.4							
4253.4	15	As above; no trash	0 ppm				
4252.4							
4251.4							
4250.4							
4249.4							
4248.4	20	Buff calcareous silt; dry	0 ppm		3MM-21	77-100/6	12" recovery
4247.4							
4246.4							
4245.4							
4244.4							
4243.4	25						

HTW DRILLING LOG

HOLE NO. 3MM

SHEET 2 OF 2 SHEETS

PROJECT: Cannon AFB Landfill 3 RI, Clovis, N.M.

INSPECTOR: James R. Buice

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
4242.4		Buff calcareous silt; dry	0 ppm		3MM-25	47-66-100/5	17" recovery
4241.4							
4240.4							
4239.4							
4238.4	30	Calcareous silt; dry; friable	0 ppm		3MM-30.5	31-53-100/5	17" recovery
4237.4							
4236.4							
4235.4							
4234.4							
4233.4	35	Calcareous silt; very hard; dry; buff	0 ppm		3MM-35	19-20-17-19	MRD Split 24" recovery
4232.4							
4231.4							
4230.4		Calcareous mottled silt; dry; buff/red	0 ppm		3MM-37.5	15-20-28-39	24" recovery
4229.4							
4228.4	40						
4227.4							
4226.4							
4225.4							
4224.4							
4223.4	45						
4222.4							
4221.4							
4220.4							
4219.4							
4218.4	50						
4217.4							
4216.4							
4215.4							
4214.4							
4213.4	55						
4212.4							
4211.4							
4210.4							
4209.4							
4208.4	60						
4207.4							
4206.4							

HTW DRILLING LOG

HOLE NO.	3N
SHEET	1 OF 2 SHEETS

1. COMPANY NAME	Radian Corporation
2. DRILLING CONTRACTOR	SHB
3. PROJECT	Cannon AFB Landfill 3 RI
4. LOCATION	Clovis, N.M.
5. NAME OF DRILLER	Coke Elms
6. MANUFACTURER'S DESIGNATION OF DRILL	CME-75
7. SIZES & TYPES OF DRILLING & SAMPLING EQUIPMENT	6-5/8 Inch I.D. HSA; 3"x 24" Stainless Steel Split Spoon Sampler; Augers, spoons, and drilling equipment decontaminated before use.
8. HOLE LOCATION	1232465.0 North 812590.3 East
9. SURFACE ELEVATION	4268.6'
10. DATE STARTED	7/15/92
11. DATE COMPLETED	7/20/92
12. OVERBURDEN THICKNESS	N/A
15. DEPTH GROUNDWATER ENCOUNTERED	N/A
13. DEPTH DRILLED INTO ROCK	N/A
16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED	N/A
14. TOTAL DEPTH OF HOLE	~~64~~ 45.0 Borehole
17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)	N/A

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
0	–	X	8

20. SAMPLES FOR CHEMICAL ANALYSIS	8240	METALS	8270	8080	418.1	21. TOTAL CORE REC %
4	X	X	X	X	X	66

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
Cuttings Drummed	X	–	Hole grouted	RB

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
4268.6	0	Red silt; dry					
4267.6			0 ppm				
4266.6							
4265.6							
4264.6							
4263.6	5	Red silt; dry	4 ppm				
4262.6							
4261.6		Plastic bag; steel scrap					
4260.6							
4259.6							
4258.6	10	Steel scrap; plastic (~1 mm thick); red silt; dry	0 ppm				
4257.6							
4256.6							
4255.6							
4254.6							
4253.6	15	Red silt; moist; no trash	0 ppm				
4252.6							
4251.6							
4250.6							
4249.6							
4248.6	20	20-21': Red silt; roots; 21-21.5': calcareous silt; hard; friable; 6" of ~16 gauge wire; No sample collected	300 ppm				0 recovery
4247.6							
4246.6							
4245.6							
4244.6							
4243.6	25						

HTW DRILLING LOG

HOLE NO.	3NN
SHEET 1 OF 2 SHEETS	

1. COMPANY NAME	Radian Corporation
2. DRILLING CONTRACTOR	SHB
3. PROJECT	Cannon AFB Landfill 3 RI
4. LOCATION	Clovis, N.M.
5. NAME OF DRILLER	Coke Elms
6. MANUFACTURER'S DESIGNATION OF DRILL	CME-75
7. SIZES & TYPES OF DRILLING & SAMPLING EQUIPMENT	6-5/8 Inch I.D. HSA; 3"x 24" Stainless Steel Split Spoon Sampler; Augers, spoons, and drilling equipment decontaminated before use.
8. HOLE LOCATION	1232504.7 North 812589.8 East
9. SURFACE ELEVATION	4269.5'
10. DATE STARTED	7/24/92
11. DATE COMPLETED	7/24/92
12. OVERBURDEN THICKNESS	N/A
13. DEPTH DRILLED INTO ROCK	N/A
14. TOTAL DEPTH OF HOLE	62.0 Borehole
15. DEPTH GROUNDWATER ENCOUNTERED	N/A
16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED	N/A
17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)	N/A

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
2	--	X	8

20. SAMPLES FOR CHEMICAL ANALYSIS	8240	METALS	8270	8080	418.1	21. TOTAL CORE REC %
8	X	X	X	X	X	79

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
Cuttings Drummed	X	--	Hole grouted	[signature]

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
4269.5	0	Calcareous silt; dry; no trash					
4268.5			0 ppm				
4267.5							
4266.5							
4265.5							
4264.5	5	As above; no trash	0 ppm				
4263.5							
4262.5							
4261.5							
4260.5							
4259.5	10	Red silt; 8-10 mm calcareous nodules; no trash	0 ppm				
4258.5							
4257.5							
4256.5							
4255.5							
4254.5	15	Buff calcareous silt; nodular; no trash	0 ppm				
4253.5							
4252.5							
4251.5							
4250.5							
4249.5	20	White calcareous silt; hard; friable	0 ppm		3NN-20	35-100/5	11" recovery
4248.5							
4247.5							
4246.5							
4245.5							
4244.5	25						

HTW DRILLING LOG

HOLE NO.	3NN
SHEET	2 OF 2 SHEETS

PROJECT: Cannon AFB Landfill 3 RI, Clovis, N.M.

INSPECTOR: James R. Buice

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
4243.5							
4242.5							
4241.5							
4240.5							
4239.5	30						
4238.5							
4237.5							
4236.5							
4235.5							
4234.5	35						
4233.5							
4232.5							
4231.5							
4230.5							
4229.5	40	Red silty sand; lightly calcareous	0 ppm	3NN-41.5	3NN-41	8-8-20-75/3	20" recovery
4228.5							
4227.5							
4226.5							
4225.5							
4224.5	45	Calcareous buff silt; dry; very hard	0 ppm		3NN-45 3NN-14	120-100/4	3NN-14 is DUP 12" recovery
4223.5							
4222.5							
4221.5							
4220.5							
4219.5	50	Sandy buff silt	0 ppm		3NN-50	27-49-100/5	MRD Split 17" recovery
4218.5							
4217.5							
4216.5		Red silty sand; unconsolidated; fine grained	0 ppm		3NN-53	19-27-38-49	24" recovery
4215.5							
4214.5	55	Well sorted, fine grained, red sand	0 ppm		3NN-55	11-17-25-32	24" recovery
4213.5							
4212.5							
4211.5							
4210.5							
4209.5	60	As above	0 ppm	3NN-61.5	3NN-61	10-22-27-32	24" recovery
4208.5							
4207.5							

HTW DRILLING LOG

HOLE NO.	3P
SHEET 1 OF 2 SHEETS	

1. COMPANY NAME	Radian Corporation
2. DRILLING CONTRACTOR	SHB
3. PROJECT	Cannon AFB Landfill 3 RI
4. LOCATION	Clovis, N.M.
5. NAME OF DRILLER	Coke Elms
6. MANUFACTURER'S DESIGNATION OF DRILL	CME-75
7. SIZES & TYPES OF DRILLING & SAMPLING EQUIPMENT	6-5/8 Inch I.D. HSA; 3"x 24" Stainless Steel Split Spoon Sampler; Augers, spoons, and drilling equipment decontaminated before use.
8. HOLE LOCATION	1232692.7 North 812409.4 East
9. SURFACE ELEVATION	4265.5'
10. DATE STARTED	7/14/92
11. DATE COMPLETED	7/14/92
12. OVERBURDEN THICKNESS	N/A
15. DEPTH GROUNDWATER ENCOUNTERED	N/A
13. DEPTH DRILLED INTO ROCK	N/A
16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED	N/A
14. TOTAL DEPTH OF HOLE	61.0 Borehole
17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)	N/A

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
02	--	X	11

20. SAMPLES FOR CHEMICAL ANALYSIS	8240	METALS	8270	8080	418.1	21. TOTAL CORE REC %
11	X	X	X	X	X	72

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
Cuttings Drummed	X	--	Hole grouted	J R B

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
4265.5	0	Buff silt; dry; no trash					
4264.5			0 ppm				
4263.5							
4262.5							
4261.5							
4260.5	5	As above	0 ppm				
4259.5							
4258.5							
4257.5							
4256.5							
4255.5	10	Buff silt; moist; no trash	0 ppm				
4254.5							
4253.5							
4252.5							
4251.5							
4250.5	15	Calcareous silt; very hard; no trash	0 ppm				
4249.5							
4248.5							
4247.5							
4246.5							
4245.5	20	Buff calcareous silt; calcareous nodules; dry	0 ppm		3P-21	66-74-119-112	MRD Split 24" recovery
4244.5							
4243.5							
4242.5							
4241.5							
4240.5	25						

HTW DRILLING LOG

HOLE NO. 3P

SHEET 2 OF 2 SHEETS

PROJECT: Cannon AFB Landfill 3 RI, Clovis, N.M.

INSPECTOR: James R. Buice

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
		25': NO RECOVERY					0 recovery
4239.5		26': Calcareous silt; dry; very hard; friable	3 ppm		3P-26	Not recorded	12" recovery
4238.5							
4237.5							
4236.5							
4235.5	30	Calcareous silt; red mottling; 5-10 mm calcareous nodules; dry; friable	0 ppm		3P-31	Not recorded	24" recovery
4234.5							
4233.5							
4232.5							
4231.5							
4230.5	35	Calcareous, friable silt; buff; nodular; dry	0 ppm		3P-36	75-35-43-112/5	23" recovery
4229.5							
4228.5							
4227.5							
4226.5							
4225.5	40	Calcareous silt; very hard; buff; dry	1 ppm		3P-40	63/6	6" recovery
4224.5							
4223.5							
4222.5							
4221.5							
4220.5	45	Calcareous silt; buff; nodular; dry	0 ppm		3P-45	300/4	4" recovery
4219.5							
4218.5							
4217.5							
4216.5							
4215.5	50	Well sorted, fine grained sand; unconsolidated; tan/red; dry	0 ppm		3P-51	18-26-34-46	24" recovery
4214.5							
4213.5							
4212.5		Well sorted, fine grained, red sand; unconsolidated; dry	0 ppm		3P-53	11-20-33-53	24" recovery
4211.5							
4210.5	55	Well sorted, fine grained, red sand; unconsolidated; dry; 1-2 mm calcareous nodules	0 ppm	3P-55	3P-56 3P-07	10-17-26-80	3P-07 is DUP 24" recovery
4209.5							
4208.5							
4207.5							
4206.5							
4205.5	60	Well sorted, fine grained, red sand; mica flakes; dry; unconsolidated	0 ppm	3P-60	3P-61	16-34-62-70	24" recovery
4204.5							
4203.5							

HTW DRILLING LOG

HOLE NO.	3Q
SHEET 1 OF 2 SHEETS	

1. COMPANY NAME	Radian Corporation
2. DRILLING CONTRACTOR	SHB
3. PROJECT	Cannon AFB Landfill 3 RI
4. LOCATION	Clovis, N.M.
5. NAME OF DRILLER	Coke Elms
6. MANUFACTURER'S DESIGNATION OF DRILL	CME-75
7. SIZES & TYPES OF DRILLING & SAMPLING EQUIPMENT	6-5/8 Inch I.D. HSA; 3"x 24" Stainless Steel Split Spoon Sampler; Augers, spoons, and drilling equipment decontaminated before use.
8. HOLE LOCATION	1232440.5 North 812303.9 East
9. SURFACE ELEVATION	4269.4'
10. DATE STARTED	7/12/92
11. DATE COMPLETED	7/13/92
12. OVERBURDEN THICKNESS	N/A
13. DEPTH DRILLED INTO ROCK	N/A
14. TOTAL DEPTH OF HOLE	62.0 Borehole
15. DEPTH GROUNDWATER ENCOUNTERED	N/A
16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED	N/A
17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)	N/A

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
2	–	X	11

20. SAMPLES FOR CHEMICAL ANALYSIS	8240	METALS	8270	8080	418.1	21. TOTAL CORE REC %
11	X	X	X	X	X	85

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
Cuttings Drummed	X	–	Hole grouted	RB

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
4269.4	0	Red silt; unconsolidated; dry					
4268.4			0 ppm				
4267.4							
4266.4							
4265.4							
4264.4	5	Red silt; dry; pieces of blue plastic bag	0 ppm				
4263.4							
4262.4							
4261.4							
4260.4							
4259.4	10	Red, unconsolidated silt; dry	0 ppm				
4258.4							
4257.4							
4256.4							
4255.4							
4254.4	15						
4253.4							
4252.4							
4251.4							
4250.4							
4249.4	20	20-20'9": dark grey/black soil; plastic; insulated wire; 20'9"-22': buff calcareous silt; dry; friable	0 ppm	3Q-21.5	3Q-21	17-20-25-28	24" recovery
4248.4							
4247.4							
4246.4							
4245.4							
4244.4	25						

HTW DRILLING LOG

PROJECT	INSPECTOR	HOLE NO.
Cannon AFB Landfill 3 RI Clovis, N.M.	James R. Buice	3Q SHEET 2 OF 2 SHEETS

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
		25': NO RECOVERY					0 recovery
4243.4		26': Calcareous silt; hard; friable; dry; buff; blue plastic chips, probably from 5-10' interval	0 ppm		3Q-26	Not recorded	12" recovery
4242.4							
4241.4							
4240.4							
4239.4	30	30-31.5': calcareous silt; buff; friable; 31.5-32': lightly cemented, red silt; calcareous nodules	22 ppm		3Q-31	Not recorded	24" recovery
4238.4							
4237.4							
4236.4							
4235.4							
4234.4	35	Added 7 gal. of potable water; 35-35.5': calcareous silt; dry; buff; friable; 35.5-37': silty, calcareous, fine grained sand; 1-5 cm calcareous nodules	0 ppm		3Q-36	42-46-38-40	24" recovery
4233.4							
4232.4							
4231.4							
4230.4							
4229.4	40	Buff calcareous silty sand	4 ppm		3Q-41	14-60-120-116	MRD Split 24" recovery
4228.4							
4227.4							
4226.4							
4225.4							
4224.4	45	Silty red fine grained sand; calcareous silt nodules interbedded; lightly cemented	3 ppm	3Q-45	3Q-46	Not recorded	24" recovery
4223.4							
4222.4							
4221.4							
4220.4							
4219.4	50	50-51': sdy rd silt; bf, 1-2 cm calc. nodules interbedded; 51-51'8": silty, red, fine grn sand; unconsol.; dry	25 ppm		3Q-51 3Q-06	62-130-106/5	3Q-06 is DUP 20" recovery
4218.4							
4217.4							
4216.4		52.5-53': calc. sdy silt; friable; bf; 53-54.5': well srtd, unconsol., fine grn, rd sand; mica flakes	0 ppm		3Q-53.5	5-17-23-37	24" recovery
4215.4							
4214.4	55	Well sorted, fine grained, red sand; unconsolidated	17 ppm		3Q-55	13-22-29-39	24" recovery
4213.4							
4212.4							
4211.4							
4210.4							
4209.4	60	60-60'3": calcareous buff silt; friable; 60'3"-62': well sorted, fine-med. grained, red sand; unconsolidated	0 ppm		3Q-60	17-23-36-39	24" recovery
4208.4							
4207.4							

HTW DRILLING LOG

HOLE NO.	3R
SHEET 1 OF 2 SHEETS	

1. COMPANY NAME	Radian Corporation
2. DRILLING CONTRACTOR	SHB
3. PROJECT	Cannon AFB Landfill 3 RI
4. LOCATION	Clovis, N.M.
5. NAME OF DRILLER	Coke Elms
6. MANUFACTURER'S DESIGNATION OF DRILL	CME-75
7. SIZES & TYPES OF DRILLING & SAMPLING EQUIPMENT	6-5/8 Inch I.D. HSA; 3"x 24" Stainless Steel Split Spoon Sampler; Augers, spoons, and drilling equipment decontaminated before use.
8. HOLE LOCATION	1232541.4 North 812110.9 East
9. SURFACE ELEVATION	4268.7'
10. DATE STARTED	7/12/92
11. DATE COMPLETED	7/12/92
12. OVERBURDEN THICKNESS	N/A
13. DEPTH DRILLED INTO ROCK	N/A
14. TOTAL DEPTH OF HOLE	62.0 Borehole
15. DEPTH GROUNDWATER ENCOUNTERED	N/A
16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED	N/A
17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)	N/A

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
2	–	X	13

20. SAMPLES FOR CHEMICAL ANALYSIS	8240	METALS	8270	8080	418.1	21. TOTAL CORE REC %
13	X	X	X	X	X	94

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
Cuttings Drummed	X	–	Hole grouted	

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
4268.7	0	Dark brown/black loamy silt; broken glass; ashes	10 ppm				
4267.7							
4266.7							
4265.7							
4264.7							
4263.7	5						
4262.7							
4261.7							
4260.7							
4259.7							
4258.7	10	Grey/black silt; wood chips; broken glass; ashes	8 ppm				
4257.7							
4256.7							
4255.7							
4254.7							
4253.7	15						
4252.7							
4251.7		White calcareous silt; friable					
4250.7							
4249.7							
4248.7	20	20-21': fill dirt, wood (2"x4") at 21'; 21-21'10": calcareous silt;buff; friable; dry	200 ppm		3R-21	76-143-19-22	22" recovery
4247.7							
4246.7							
4245.7							
4244.7							
4243.7	25						

HTW DRILLING LOG

HOLE NO.	
3R	
SHEET 2 OF 2 SHEETS	

PROJECT: Cannon AFB Landfill 3 RI, Clovis, N.M.

INSPECTOR: James R. Buice

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
4242.7		25-26': fill material; dark grey silt; wood chips; 26-27': buff calcareous silt; undisturbed; friable	40 ppm		3R-25	Not recorded	24" recovery
4241.7							
4240.7							
4239.7							
4238.7	30	Buff calcareous silt; dry; friable	14 ppm		3R-31	12-20-30-41	MRD Split 24" recovery
4237.7							
4236.7							
4235.7		Buff calcareous silt with red mottling; hard; friable	15 ppm	3R-33.5	3R-32.5	12-20-30-41	24" recovery
4234.7							
4233.7	35	Added 5 gal. potable water; 35-36': Red sandy silt; lightly cemented with $CaCO_3$; 36-37': silty sand; fine grained; 1-5 cm calcareous nodules	0 ppm		3R-35 3R-36	14-26-32-26	24" recovery
4232.7							
4231.7							
4230.7							
4229.7							
4228.7	40	Red sandy silt; calcareous nodules	0 ppm	3R-40	3R-41	5-46-250/5	18" recovery
4227.7							
4226.7							
4225.7							
4224.7							
4223.7	45	Added 5 gal. potable water; buff calcareous silt; hard; friable	0 ppm		3R-45	6-17-100/4	18" recovery
4222.7							
4221.7							
4220.7							
4219.7							
4218.7	50	50-51': calc. silt; lightly cmtd; bf; sdy; 51-52': fn grn, well srtd, unconsol. sd; mica flakes; 1-3 cm calc. nodules	14 ppm		3R-51	82-41-39-36	24" recovery
4217.7							
4216.7							
4215.7		52.5-53': rd silty sd; 53-54.5': well srtd, fn grn sd; mica flakes; unconsol.	0 ppm		3R-52.5 3R-05	4-4-5-23	3R-05 is DUP 24" recovery
4214.7							
4213.7	55	Well-sorted, fine grained sand; mica flakes; unconsolidated	0 ppm		3R-56	5-14-22-31	MRD Split 24" recovery
4212.7							
4211.7							
4210.7							
4209.7							
4208.7	60	Well sorted, fine grained, red sand; unconsolidated, dry	0 ppm		3R-61	14-27-31-37	24" recovery
4207.7							
4206.7							

HTW DRILLING LOG

HOLE NO.	3S
SHEET 1 OF 2 SHEETS	

1. COMPANY NAME	Radian Corporation
2. DRILLING CONTRACTOR	SHB
3. PROJECT	Cannon AFB Landfill 3 RI
4. LOCATION	Clovis, N.M.
5. NAME OF DRILLER	Coke Elms
6. MANUFACTURER'S DESIGNATION OF DRILL	CME-75
7. SIZES & TYPES OF DRILLING & SAMPLING EQUIPMENT	6-5/8 Inch I.D. HSA; 3"x 24" Stainless Steel Split Spoon Sampler; Augers, spoons, and drilling equipment decontaminated before use.
8. HOLE LOCATION	1232651.1 North 811924.6 East
9. SURFACE ELEVATION	4266.9'
10. DATE STARTED	7/11/92
11. DATE COMPLETED	7/11/92
12. OVERBURDEN THICKNESS	N/A
15. DEPTH GROUNDWATER ENCOUNTERED	N/A
13. DEPTH DRILLED INTO ROCK	N/A
16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED	N/A
14. TOTAL DEPTH OF HOLE	67.0 Borehole
17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)	N/A

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
1	–	X	11

20. SAMPLES FOR CHEMICAL ANALYSIS	8240	METALS	8270	8080	418.1	21. TOTAL CORE REC %
11	X	X	X	X	X	89

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
Cuttings Drummed	X	–	Hole grouted	[signature]

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
4266.9	0	Red silty loam; dry; no trash	0 ppm				
4265.9							
4264.9		Buff silt; dry; no trash	0 ppm				
4263.9							
4262.9							
4261.9	5	Buff silt; calcareous nodules, moist, no trash	0 ppm				
4260.9							
4259.9							
4258.9							
4257.9							
4256.9	10	Dry light buff calcareous silt; no trash; 5-10 cm quartzite pebbles	0 ppm				
4255.9							
4254.9							
4253.9							
4252.9							
4251.9	15	Dry calcareous silt; no trash	0 ppm				
4250.9							
4249.9							
4248.9							
4247.9							
4246.9	20	20-21': dark brown loam; calcareous streaks; roots; 21-21'9": calcareous silt; hard; friable	50 ppm		3S-21	25-57-150/3	21" recovery
4245.9							
4244.9							
4243.9							
4242.9							
4241.9	25						

HTW DRILLING LOG

HOLE NO. 3S

SHEET 2 OF 2 SHEETS

PROJECT: Cannon AFB Landfill 3 RI, Clovis, N.M.

INSPECTOR: James R. Buice

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
4240.9		Calcareous silt, light buff; lower 6" grades to red silt	0 ppm		3S-25	180-250/5	16" recovery
4239.9							
4238.9							
4237.9							
4236.9	30	Added 5 gal. potable water; 30-31.5': dry, buff, calcareous silt; 31.5-32': Red mottling, buff calcareous silt	22 ppm	3S-30	3S-31 3S-04	22-49-52-57	3S-04 is DUP 24" recovery
4235.9							
4234.9							
4233.9							
4232.9							
4231.9	35	Sandy silt; nodular; calcareous; buff; hard; friable	0 ppm		3S-36	8-31-42-74	24" recovery
4230.9							
4229.9							
4228.9							
4227.9							
4226.9	40	Fine grained silty sand; red; light $CaCO_3$ streaking; 5 cm calc. nodules	0 ppm		3S-40	20-23-28-48	MRD Split 24" recovery
4225.9							
4224.9							
4223.9		42.5-43.5': Sdy silt; red; 43.5'-43'9": calc. silt; hard; friable; buff	0 ppm		3S-43	192-250/1	16" recovery
4222.9							
4221.9	45	45-45.5: red sandy silt; 1-5 cm calcareous nodules; 45.5-46.5': calcareous silt; buff; friable	25 ppm		3S-45	15-73-250/4	18" recovery
4220.9							
4219.9							
4218.9							
4217.9							
4216.9	50	50-50.5': red silty sand; 50.5-52': well sorted, fine grained sand; red; unconsolidated	16 ppm		3S-51	10-42-35-39	24" recovery
4215.9							
4214.9							
4213.9							
4212.9							
4211.9	55	55-55.5': well sorted, fine grained, unconsolidated red sand; 55.5-55'10": silty red sand; calcareous; 55'10"-57': well sorted, fine grained, red sand	200 ppm		3S-55	Not recorded	24" recovery
4210.9							
4209.9							
4208.9							
4207.9							
4206.9	60	Fine-med. grained, unconsolidated, red sand; dry; mica flakes	0 ppm		3S-60	13-41-44-80	24" recovery
4205.9							
4204.9							

HTW DRILLING LOG

HOLE NO.	3T
SHEET 1 OF 2 SHEETS	

1. COMPANY NAME	Radian Corporation
2. DRILLING CONTRACTOR	SHB
3. PROJECT	Cannon AFB Landfill 3 RI
4. LOCATION	Clovis, N.M.
5. NAME OF DRILLER	Coke Elms
6. MANUFACTURER'S DESIGNATION OF DRILL	CME-75
7. SIZES & TYPES OF DRILLING & SAMPLING EQUIPMENT	6-5/8 Inch I.D. HSA; 3"x 24" Stainless Steel Split Spoon Sampler; Augers, spoons, and drilling equipment decontaminated before use.
8. HOLE LOCATION	1232829.8 North 811718.2 East
9. SURFACE ELEVATION	4264.0'
10. DATE STARTED	7/23/92
11. DATE COMPLETED	7/24/92
12. OVERBURDEN THICKNESS	N/A
13. DEPTH DRILLED INTO ROCK	N/A
14. TOTAL DEPTH OF HOLE	62.0 Borehole
15. DEPTH GROUNDWATER ENCOUNTERED	N/A
16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED	N/A
17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)	N/A

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
2	–	X	13

20. SAMPLES FOR CHEMICAL ANALYSIS	8240	METALS	8270	8080	418.1	21. TOTAL CORE REC %
13	X	X	X	X	X	88

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
Cuttings Drummed	X	–	Hole grouted	[signature]

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
4264.0	0	Red silt; 1-2 cm, well rounded quartz pebbles; no trash	0 ppm				
4263.0							
4262.0							
4261.0							
4260.0							
4259.0	5	As above; no trash	0 ppm				
4258.0							
4257.0							
4256.0							
4255.0							
4254.0	10	Buff calcareous silt; no trash	0 ppm				
4253.0							
4252.0							
4251.0							
4250.0							
4249.0	15						
4248.0							
4247.0							
4246.0							
4245.0							
4244.0	20	Calcareous, dry, friable silt	0 ppm		3T-20	8-14-46-100	MRD Split 24" recovery
4243.0							
4242.0							
4241.0							
4240.0							
4239.0	25						

HTW DRILLING LOG

HOLE NO. 3T

PROJECT: Cannon AFB Landfill 3 RI, Clovis, N.M.

INSPECTOR: James R. Buice

SHEET 2 OF 2 SHEETS

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
4238.0		Red/buff sandy silt; dry; lightly cemented	0 ppm		3T-25 3T-12	82-110-150/4	3T-12 is DUP 16" recovery
4237.0							
4236.0		Red sandy silt; dry; unconsolidated	0 ppm	3T-28	3T-28.5	29-30-17-35	24" recovery
4235.0							
4234.0	30	Lightly cemented; red sandy silt; dry	0 ppm		3T-31	Not recorded	16" recovery
4233.0							
4232.0							
4231.0							
4230.0							
4229.0	35	Red sandy silt; lightly cemented	0 ppm	3T-36	3T-35	8-25-39-49	24" recovery
4228.0							
4227.0							
4226.0							
4225.0							
4224.0	40	Calcareous, buff, sandy silt; dry	0 ppm		3T-40	11-200/3	8" recovery
4223.0							
4222.0							
4221.0							
4220.0							
4219.0	45	Moist, calcareous, red sand; well sorted, fine grained; mica flakes	0 ppm		3T-46	18-29-38-39	24" recovery
4218.0							
4217.0							
4216.0		Moist red sand; lightly cemented; moderately well sorted; fine grained	0 ppm		3T-48	11-24-105-107	24" recovery
4215.0							
4214.0	50	Moist red sand; well sorted; fine grained	0 ppm		3T-52	10-22-27-32	24" recovery
4213.0							
4212.0							
4211.0							
4210.0							
4209.0	55	As above	7 ppm		3T-56	20-22-31-40	24" recovery
4208.0							
4207.0							
4206.0							
4205.0							
4204.0	60	As above	3 ppm		3T-60 3T-13	33-46-54-65	3T-13 is DUP 24" recovery
4203.0							
4202.0							

HTW DRILLING LOG

HOLE NO.	3U
SHEET 1 OF 2 SHEETS	

1. COMPANY NAME	Radian Corporation
2. DRILLING CONTRACTOR	SHB
3. PROJECT	Cannon AFB Landfill 3 RI
4. LOCATION	Clovis, N.M.
5. NAME OF DRILLER	Coke Elms
6. MANUFACTURER'S DESIGNATION OF DRILL	CME-75
7. SIZES & TYPES OF DRILLING & SAMPLING EQUIPMENT	6-5/8 Inch I.D. HSA; 3"x 24" Stainless Steel Split Spoon Sampler; Augers, spoons, and drilling equipment decontaminated before use.
8. HOLE LOCATION	1232559.7 North 811474.9 East
9. SURFACE ELEVATION	4269.1'
10. DATE STARTED	7/10/92
11. DATE COMPLETED	7/11/92
12. OVERBURDEN THICKNESS	N/A
13. DEPTH DRILLED INTO ROCK	N/A
14. TOTAL DEPTH OF HOLE	67.0 Borehole
15. DEPTH GROUNDWATER ENCOUNTERED	N/A
16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED	N/A
17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)	N/A

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
2	–	X	14

20. SAMPLES FOR CHEMICAL ANALYSIS	8240	METALS	8270	8080	418.1	21. TOTAL CORE REC %
14	X	X	X	X	X	94

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
Cuttings Drummed	X	–	Hole grouted	[signature]

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
4269.1	0	Red silty topsoil; roots					
4268.1							
4267.1							
4266.1							
4265.1							
4264.1	5	Silty sand; broken glass	2 ppm				
4263.1							
4262.1							
4261.1							
4260.1							
4259.1	10						
4258.1							
4257.1							
4256.1							
4255.1							
4254.1	15						
4253.1							
4252.1							
4251.1							
4250.1							
4249.1	20	Moist, red, silty sand; fine grained; 3-4" clay fill at 20-20'3"; light CaCO3 cementation			3U-20	13-26-47-60	MRD Split 21" recovery
4248.1							
4247.1							
4246.1							
4245.1							
4244.1	25						

HTW DRILLING LOG

HOLE NO. 3U

PROJECT: Cannon AFB Landfill 3 RI, Clovis, N.M.

INSPECTOR: James R. Buice

SHEET 2 OF 2 SHEETS

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
4243.1		25-26': red silt; 26-26.5': calcified silt; dry; hard; friable	0 ppm		3U-25	11-63-207/6	18" recovery
4242.1							
4241.1							
4240.1							
4239.1	30	30-31.5': Red sandy silt; light CaCO3 streaks; dry; 31.5-32': CaCO3 silt	0 ppm		3U-30 3U-02	33-38-71-72	3U-02 is DUP 24" recovery
4238.1							
4237.1							
4236.1		32.5'-33.5': rd silty sd; fn grn; well srtd; moist; 33.5-34': calc. silt; hard; friable; white 34-35': Tan silty sand; fn grn 35': Calc. silt grading to silty sand; hard; friable	0 ppm		3U-32.5 3U-33.5	33-138-71-72	24" recovery
4235.1							
4234.1	35		16 ppm	3U-36	3U-35	24-216-310/4	16" recovery
4233.1							
4232.1							
4231.1							
4230.1							
4229.1	40	Light red, silty sand; calcareous; friable; dry	20 ppm		3U-41	37-100-116/5	23" recovery
4228.1							
4227.1							
4226.1		Fine grained sand; well sorted; light CaCO3; buff	20 ppm	3U-43	3U-43.5	4-126-79/2	24" recovery
4225.1							
4224.1	45	45-46': silty bf sd; well srtd; fn grn; 46-46'11": calc. silt; slightly sdy; mottling rd where no CaCO3 deposited			3U-46	Not recorded	24" recovery
4223.1							
4222.1							
4221.1							
4220.1							
4219.1	50	50-51': tan, silty sand; well sorted; 51-52': calcareous sandy silt; buff	22 ppm		3U-51	Not recorded	24" recovery
4218.1							
4217.1							
4216.1							
4215.1							
4214.1	55	Well sorted, fine grained sand; light buff	0 ppm		3U-55 3U-03	16-32-36-37	3U-03 is DUP 24" recovery
4213.1							
4212.1							
4211.1							
4210.1							
4209.1	60	Clean, well sorted, fine-med. grained sand; mica flakes; low % silt	16 ppm		3U-61	6-18-33-64	MRD Split 24" recovery
4208.1							
4207.1							

HTW DRILLING LOG

HOLE NO.	3V
SHEET	1 OF 2 SHEETS
1. COMPANY NAME	Radian Corporation
2. DRILLING CONTRACTOR	SHB
3. PROJECT	Cannon AFB Landfill 3 RI
4. LOCATION	Clovis, N.M.
5. NAME OF DRILLER	Coke Elms
6. MANUFACTURER'S DESIGNATION OF DRILL	CME-75
7. SIZES & TYPES OF DRILLING & SAMPLING EQUIPMENT	6-5/8 Inch I.D. HSA; 3"x 24" Stainless Steel Split Spoon Sampler; Augers, spoons, and drilling equipment decontaminated before use.
8. HOLE LOCATION	1232451.9 North 811390.3 East
9. SURFACE ELEVATION	4270.4'
10. DATE STARTED	7/8/92
11. DATE COMPLETED	7/8/92
12. OVERBURDEN THICKNESS	N/A
15. DEPTH GROUNDWATER ENCOUNTERED	N/A
13. DEPTH DRILLED INTO ROCK	N/A
16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED	N/A
14. TOTAL DEPTH OF HOLE	62.0 Borehole
17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)	N/A

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
2	–	X	10

20. SAMPLES FOR CHEMICAL ANALYSIS	8240	METALS	8270	8080	418.1	21. TOTAL CORE REC %
7	X	X	X	X	X	52

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
Cuttings Drummed	X	–	Hole grouted	

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
4270.4	0	Dark red silty topsoil; roots; dry					
4269.4			0 ppm				
4268.4							
4267.4							
4266.4							
4265.4	5	Tan silty loam; dry; ~20% fine grained sand	0 ppm				
4264.4							
4263.4		Tan silt; dry	0 ppm				
4262.4							
4261.4							
4260.4	10	Fine grained, silty loam; moist; ~30% fine sand	0 ppm				
4259.4							
4258.4							
4257.4							
4256.4							
4255.4	15	5% grey shale; 95% silt	0 ppm				
4254.4							
4253.4			0 ppm				
4252.4							
4251.4							
4250.4	20	Silt; dry; 5 cm rounded quartz pebbles	0 ppm		3V-20	70/6	6" recovery
4249.4							
4248.4							
4247.4							
4246.4							
4245.4	25						

HTW DRILLING LOG

HOLE NO. 3V

PROJECT: Cannon AFB Landfill 3 RI, Clovis, N.M.

INSPECTOR: James R. Buice

SHEET 2 OF 2 SHEETS

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
4244.4		Silt; dark tan; calcareous; moist; red limonite mottling; white calcareous streaks; ~20% fine sand	0 ppm	3V-26	3V-25	Not recorded	6" recovery
4243.4							
4242.4							
4241.4							
4240.4	30	NO RECOVERY				22-50/4	0 recovery
4239.4							
4238.4							
4237.4							
4236.4							
4235.4	35	NO RECOVERY				55/4	0 recovery
4234.4							
4233.4							
4232.4							
4231.4							
4230.4	40	Insufficient recovery to send to lab				50/5	5" recovery
4229.4							
4228.4							
4227.4							
4226.4							
4225.4	45	Silty, fn grn sand; CaCO3 cementation; white/light tan; friable; dry	0 ppm		3V-45	Not recorded	12" recovery
4224.4							
4223.4							
4222.4		46': Geotechnical sample collected		3V-46		8-74-150	18" recovery
4221.4							
4220.4	50	Light tan 50% sand; 50% silt; light CaCO3 cementation; cementing increases with depth.	0 ppm		3V-50 3V-52	Not recorded	3V-52 is DUP 18" recovery
4219.4							
4218.4							
4217.4							
4216.4							
4215.4	55	50-55.5': light tan sandy silt; 55.5-56.5': dark tan silt; 56.5-57': light tan, nodular sand; well sorted; cemented	0 ppm		3V-55	80-37 60-70	24" recovery
4214.4							
4213.4							
4212.4							
4211.4							
4210.4	60	Well sorted, fine grained sand; unconsolidated; slightly moist	HNU dead		3V-60	Not recorded	24" recovery
4209.4							
4208.4							

HTW DRILLING LOG

HOLE NO.	3VV
SHEET	1 OF 2 SHEETS

1. COMPANY NAME	Radian Corporation
2. DRILLING CONTRACTOR	SHB
3. PROJECT	Cannon AFB Landfill 3 RI
4. LOCATION	Clovis, N.M.
5. NAME OF DRILLER	Coke Elms
6. MANUFACTURER'S DESIGNATION OF DRILL	CME-75
7. SIZES & TYPES OF DRILLING & SAMPLING EQUIPMENT	6-5/8 Inch I.D. HSA; 3"x 24" Stainless Steel Split Spoon Sampler; Augers, spoons, and drilling equipment decontaminated before use.
8. HOLE LOCATION	1232456.3 North 811394.2 East
9. SURFACE ELEVATION	4270.2'
10. DATE STARTED	7/8/92
11. DATE COMPLETED	7/8/92
12. OVERBURDEN THICKNESS	N/A
13. DEPTH DRILLED INTO ROCK	N/A
14. TOTAL DEPTH OF HOLE	42.0 ~~64.0~~ Borehole
15. DEPTH GROUNDWATER ENCOUNTERED	N/A
16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED	N/A
17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)	N/A

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
0	--	X	3

20. SAMPLES FOR CHEMICAL ANALYSIS	8240	METALS	8270	8080	418.1	21. TOTAL CORE REC %
3	X	X	X	X	X	67

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
Cuttings Drummed	X	--	Hole grouted	R B

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
4270.2	0						
4269.2							
4268.2							
4267.2							
4266.2							
4265.2	5						
4264.2							
4263.2							
4262.2							
4261.2							
4260.2	10						
4259.2							
4258.2							
4257.2							
4256.2							
4255.2	15						
4254.2							
4253.2							
4252.2							
4251.2							
4250.2	20						
4249.2							
4248.2							
4247.2							
4246.2							
4245.2	25						

HTW DRILLING LOG

HOLE NO.	SHEET
3VV	2 OF 2 SHEETS

PROJECT: Cannon AFB Landfill 3 RI, Clovis, N.M.

INSPECTOR: James R. Buice

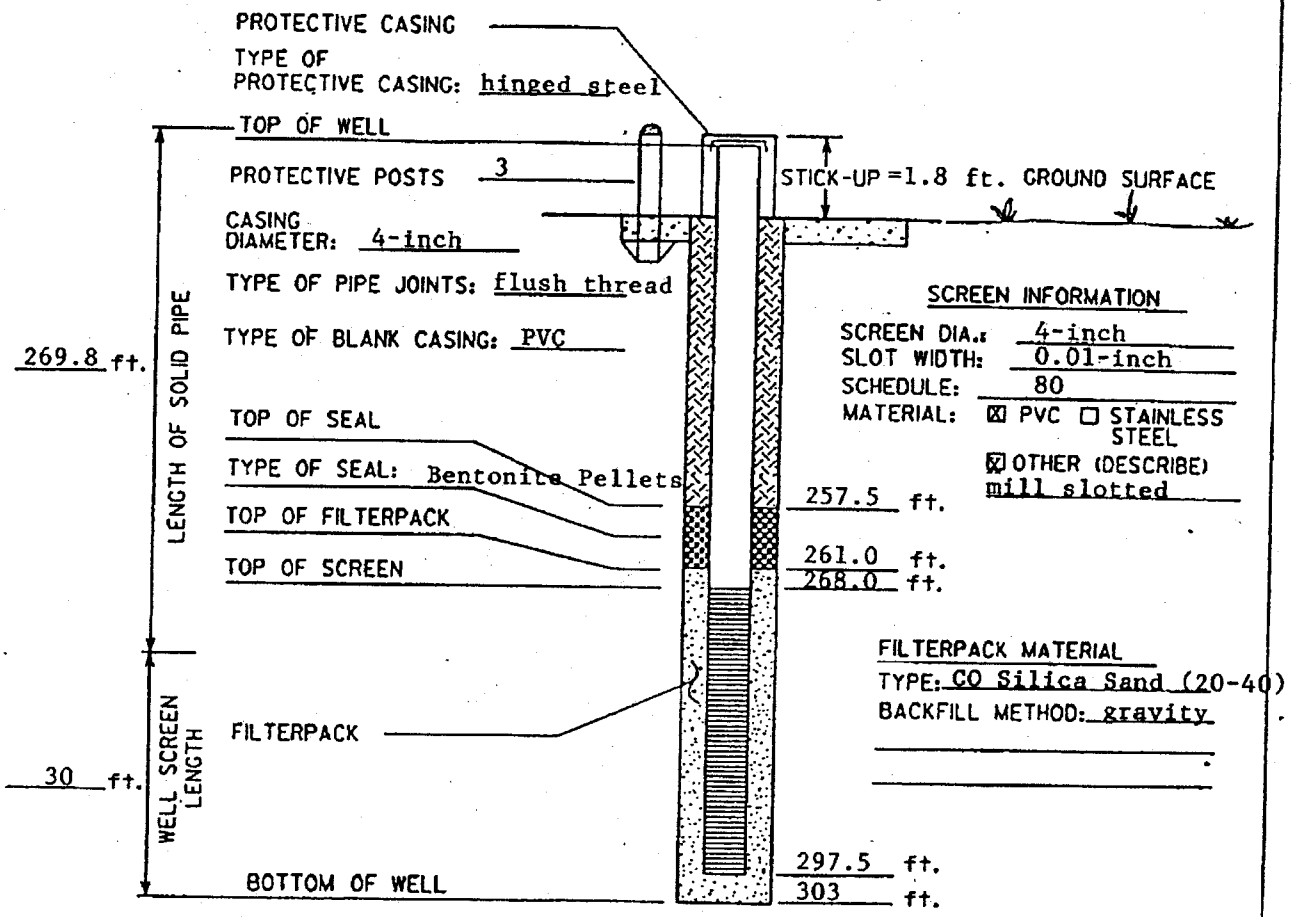
ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
4244.2							
4243.2							
4242.2							
4241.2							
4240.2	30	Red/brown silt; calcareous nodules; well cemented (CaCO3); friable	HNU dead		3VV-30	Hammer 20 min.	12" recovery
4239.2							
4238.2							
4237.2							
4236.2							
4235.2	35	Lightly cemented, red/brown, sandy silt	HNU dead		3VV-35	Hammer 15 min.	MRD Split 12" recovery
4234.2							
4233.2							
4232.2							
4231.2							
4230.2	40	Fine sand; well sorted; no cement; calcareous nodules	HNU dead		3VV-40	Hammer 12 min.	24" recovery
4229.2							
4228.2							
4227.2							
4226.2							
4225.2	45						
4224.2							
4223.2							
4222.2							
4221.2							
4220.2	50						
4219.2							
4218.2							
4217.2							
4216.2							
4215.2	55						
4214.2							
4213.2							
4212.2							
4211.2							
4210.2	60						
4209.2							
4208.2							

LANDFILL No.4
(LF-04/SWMU 104)

ELEVATION GROUND WATER 3996.94 ft. MSL			PROJECT CANNON AIR FORCE BASE
DATE INSTALLED 12-13-94	STARTED 12-10-94	COMPLETED 12-13-94	LOCATION (Coordinates or Station) N=234249.19 E=813037.28
ELEVATION TOP OF HOLE 4267.59 GS 4269.7 TOC			SIGNATURE OF INSPECTOR Joseph A. Watson
TOTAL DEPTH OF HOLE 303' BGS			HOLE NO. Monitoring Well N

MONITORING WELL CONSTRUCTION DIAGRAM

(ALL MEASUREMENTS FROM GROUND SURFACE)



SCREEN INFORMATION

SCREEN DIA.: 4-inch
SLOT WIDTH: 0.01-inch
SCHEDULE: 80
MATERIAL: ☒ PVC ☐ STAINLESS STEEL
☒ OTHER (DESCRIBE) mill slotted

FILTERPACK MATERIAL

TYPE: CO Silica Sand (20-40)
BACKFILL METHOD: gravity

WELL DEVELOPMENT

METHOD: Gross Bailer/final-3/4 HP Sub Pump
TIME SPENT DEVELOPING: 3 hrs.
VOLUME OF WATER REMOVED: 500 gallons
VOLUME OF WATER ADDED: N/A
DESCRIPTION OF PREDEVELOPMENT WATER: semi-clear
DESCRIPTION OF POST DEVELOPMENT WATER: clear

WATER LEVEL SUMMARY

WATER LEVEL MEASUREMENTS
DATE/TIME/LEVEL 12-14-94 1000 hrs 272.76 ' BTOL

DEPTH FROM TOP CASING AFTER DEVELOPMENT: 272.76 ft.

HTW DRILLING LOG

HOLE NO. MW-N
SHEET 1 OF 32 SHEETS

1. COMPANY NAME: Woodward-Clyde Federal Services
2. DRILLING SUBCONTRACTOR: Layne Environmental
3. PROJECT: Cannon AFB LF-3 & 4 RFI Ph II
4. LOCATION: Cannon AFB, Clovis, NM
5. NAME OF DRILLER: Benny Bludworth
6. MANUFACTURER'S DESIGNATION OF DRILL: AP-1000 Percussion Air Hammer, Rev. Circ.
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 9" Dual Wall Pipe - 10' Sec.; 9 3/4" x 1.5' Open Face Bit; 2" ID Split Spoon (Calif. tube)
8. HOLE LOCATION: Appx 600' SE of LF-4 (MW-N, LF-4)
9. SURFACE ELEVATION: 4267.59
10. DATE STARTED: 10/21/94
11. DATE COMPLETED: 12/14/94 *
12. OVERBURDEN THICKNESS: N/A
13. DEPTH DRILLED INTO ROCK: N/A
14. TOTAL DEPTH OF HOLE: 299.8
15. DEPTH GROUNDWATER ENCOUNTERED: ≈ 273' BGS
16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: 271.9' BGS 2 hrs
17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY):
18. GEOTECHNICAL SAMPLES: DISTURBED 3; UNDISTURBED
19. TOTAL NUMBER OF CORE BOXES: NA
20. SAMPLES FOR CHEMICAL ANALYSIS: None

VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)

21. TOTAL CORE RECOVERY: %
22. DISPOSITION OF HOLE

BACKFILLED	MONITORING WELL	OTHER (SPECIFY)
	MW-N	

23. SIGNATURE OF INSPECTOR: [signature]

ELEV. a.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO. e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
	0	Cuttings:	Calib. PID to Benzene R.F. (57ppm) w/ 100 ppm isobutylene				Alluvium Log is from orig. attempt at drilling/installing MW-N. Final site of MWN Located Appx 50' N25W from the site reflected in this log. Consistency btwn MW-N & MW10 stratigraphy indicates little change in lithol. will occur over this distance.
	1	0-5: Silty Sand (SM), fine to v. fine, poorly graded sand and silt. Strong brown (7.5 YR 4/4) Subangular to rounded grains of qtz. Very hard and dense based on drill action.	B.G = 0.0				
	2	Dry.	LEL Calib to Ambient air LEL=0%, H_2S=0%				
	3						Start shift 10/21/94 @ 11:00 (Rig just returned from shop in Amarillo).
	4						
	5						

PROJECT: CAFB LF3/4 ph II
HOLE NO. MW-N

HTW DRILLING LOG

PROJECT: CAFB LF-3/4 RFI Ph II

INSPECTOR: [illegible]

HOLE NO. MW-N

SHEET 2 OF 32 SHEETS

ELEV. a.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
	5	Cuttings: 5-9'					Alluvium
		Caliche - Fine sand as above with heavy matrix of pink (5YR 8/3) caliche. Dry.					
	6						
	7						
	8						
	9	Core	B.H. = 0.0				
		9-9.8: Silty sand (SM) with abnt $CaCO_3$ in matrix. Very fine sand and silt, Yellowish red (5YR 5/6) Dry.	H.S. = 1.4			20 41 41 25	Sampled @ 1130 Rec = .8'/2.0' N = 82
	10	$CaCO_3$ occurs as both disseminated blebs and pervasive in matrix					
	11	Cuttings					
		10-14': Caliche, as above. Dry; reddish yellow SM w/ $CaCO_3$ matrix cementing grains					
	12						
		14-19': SM, lighter in color, less well cemented with $CaCO_3$ (reflected by increased drill speed)					
	13						
	14						

HTW DRILLING LOG

HOLE NO. MW-N

PROJECT CAFB LF-3/4 RFI Ph II

INSPECTOR [illegible]

SHEET 3 OF 32 SHEETS

EV. a.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
		SAME: silty SAND (SM) as above					Alluvium
	15						
	16						
	17						
	18						
		Core					
	19	19-21: Silty Sand (SM). Fine, subangular-subround qtz sand with abnt silt. $CaCO_3$ matrix. Yellowish red, (5YR 5/6). Trace localized ~~zones~~ blebs of intense $CaCO_3$. Trace MnOx dendrites. Soft, unconsolidated, dry.	BZ = 0.0			8	Sampled @ 1150
			H.S. = 0.0			10	N = 18
	20					8	Recov = 2.0/2.0
						7	
	21						
	22						
	23						
	24						

HTW DRILLING LOG

PROJECT: CAFB LF-3/4 RFI Ph II

INSPECTOR: [illegible]

HOLE NO.: MW-N

SHEET 4 OF 32 SHEETS

ELEV. a.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
	24	SAME: Silty SAND (SM) as above					Alluvium
	25	Cuttings 25-26: Thin zone of more intense, heavier $CaCO_3$. Soil same as above - SM - soft & dry, yellow red.					
	26						
	27						
	28						
	29	Core 29-31.6': SM. Lt. reddish brown (5 YR 6/4), fine grained sand w/ $CaCO_3$ (coarse) cementing grains, locally quite heavily. Soft & Chalky. Dry.	BZ = 0.0 HS = 0.0			17 17	Sample @ 1235 N = 29
	30	Upper portion of cuttings and sample show a well indurated sandy Limestone, v. hard & fine grained (freshwater LS?)				12 10	Rec = 1.6/2.0'
	31						Limestone described v. similar to east shoreline of playa Lake
	32	silty SAND and SAND (SM/SP)					Alluvium
	33						

HTW DRILLING LOG

HOLE NO. MW-N

PROJECT CAFB LF 3/4 RFI Ph II

INSPECTOR [signature]

SHEET 5 OF 32 SHEETS

ELEV. a.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
	34	Cuttings 32-39 : SM/SP, Salmon or yellowish red w/ Abnt CaCO3 as cement or void fill. Occ. clasts of LS as described above may be stuck in hose.					Alluvium
	35						
	36						
	37	silty SAND (SM)					Alluvium
	38						
	39	Core 39-40.7 : SM, pinkish wht to pink (5YR 8/2-7/4), w/ fine, subround - subangular clasts, CaCO3 infilling around grains. Bottom of Run has some chips of a yellow-red (5YR 4/6) clay with a caliche-like coating. Clay is non-calcic, w/ a smooth, greasy streak.	BZ = 0.0 H.S. = 0.0			23 35 32 32	Sample @ 1305 N = 67 Rec = 1.7/2.0
	40						
	41						
	42						
	43						

HTW DRILLING LOG

PROJECT: CAFB LF 3/4 RFI Ph II

INSPECTOR: [illegible]

HOLE NO.: MW-N

SHEET 6 OF 32 SHEETS

ELEV. a.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
		Silty SAND (SM) same as above					Alluvium
		Cuttings 43-44: Thin zone of possible freshwater Limestone. Sandy and brittle, pinkish white (5YR 8/2), with fine angular to subround grains suspended in a calcic matrix.					
	44						
	45	44-49: Soft SM, pink (5YR 7/4), dry.					
	46						
	47	Silty SAND and SAND (SM and SP)					Alluvium
	48						
	49	Core 49-50.9: SM/SP, As above, pink (5YR 7/3), fine sand, Subround to subangular with $CaCO_3$ matrix. Qtz rich, soft, dry. unconsolidated.	BZ = 0.0 H.S. = 0.0			11 28 29 25	Sampled @ 1335 N=57 Rec = 1.9/2.0'
	50						
	51	Cuttings 51-55': Same as above SM/SP - V. soft drilling.					
	52						

HTW DRILLING LOG

PROJECT: CAFB LF 3/4 RFI Ph II

INSPECTOR: [illegible]

HOLE NO.: MW-N

SHEET 7 OF 32 SHEETS

TY. a.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
		silty SAND and SAND (sm and SP) same as above					Alluvium
	53						
	54	silty SAND (Sm)					Alluvium
	55						
	56	Cuttings: 56-59' Sm, fine to med grained, sub-angular to subround sand. Appx 10% med grained. Calcr, dry. Pink (5YR 7/4)					
	57						
	58						
	59	Core: 59-61: Same as entry above, Sm, w/local zones of more intense CaCO3 flooding matrix. Very qtz rich.	BZ = 0.0 H.S. = 0.1			19 18 19 24	Sample @ 1400 N = 37 Rec = 2.0/2.0
	60						
	61						
	62						

HTW DRILLING LOG

PROJECT: CAFB LF 3/4 RFI PhII

INSPECTOR: [illegible]

HOLE NO.: MW-N

SHEET 8 OF 32 SHEETS

ELEV. a.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
	62	Cuttings					Alluvium
		61-70: Poorly graded sand (SP). Fine, subang-round, with 20% med grain fraction, which is well rounded. QTZ, Pink in color (7.5 YR 7/4), Dry.					
	63						
	64						
	65						
	66						
	67						
	68						
	69						
		Core					
	70	70-70.6: Poorly graded sand (SP). Very clean, fine-medium sand, 10% med. grained is well rounded. Dry non-calcic, Red-yellow (7.5 YR 7/6).	B.Z. = 0.0			26	Sampled @ 1455
			H.S. = 0.0			31	N = 63
						32	Rec = 1.6/2.0
	71	70.6-71.6 - Similar sand, but has calcic interstitial fill. Wht to pink				40	

HTW DRILLING LOG

HOLE NO. MW-N

SHEET 9 OF 32 SHEETS

PROJECT CAFB LF 3/4 RFI Ph II

INSPECTOR [illegible]

ELEV. a.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
		(7.5 YR 7/4), Dry. Soft. SAND (SP), same as above					Alluvium
	72						
	73						
	74						
	75						
	76						
	77						
	78						
	79						
	80	Core: 80-82: SP, poorly graded, fine, subround - subangular qtz sand with local zones of $CaCO_3$ filling interstitial space. Soft	B.Z. = 0.0 H.S. = 0.0			12 18 25	Sample @ 1525 N = 43 Rec = 1.8/2.0
	81						

PROJECT CAFB LF 3/4 RFI HOLE NO. MW-N

HTW DRILLING LOG

PROJECT: CAFB LF 3/4 RFI Ph II

INSPECTOR: [illegible]

HOLE NO. MW-N

SHEET 16 OF 32 SHEETS

ELEV. a.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
	81	Unconsolidated. Very clean, pink (7.5 YR 7/4), Dry. SAND (SP) same as above				27	Alluvium
	82						
		Cuttings					
	83	82-90: Clean, fine grained, poorly graded sand (SP). Subround - round qtz, Pink (5 YR 7/4). Slightly damp.					
	84						
	85						
	86						
	87						
	88						
	89						
		Core:					
	90	90-91.6: Poorly graded sand (SP). Fine, round to subround	BZ = 0.0			7	Sample @ 1610

HTW DRILLING LOG

HOLE NO. MW-N

PROJECT CAFB LF 3/4 RFI Ph II

INSPECTOR [illegible]

SHEET 11 OF 32 SHEETS

LEV. a.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
	91	qtz. Very clean w/ occ. blebs of MnOx disseminated in matrix. Soft, non-calcic. Dry. Reddish yellow (5YR 7/6).				17 24 30	Alluvium N=65 Rec = 1.6/2.0
		SAND (SP) same as above				X	
	92						
	93						
	94	92-100: Cuttings show some clasts of weakly cemented zones ($CaCO_3$) of sand similar to last entry.					
	95						
	96						
	97						
	98						
	99						
	100						

HTW DRILLING LOG

PROJECT: CAFB LF 3/4 RFI Ph II

INSPECTOR: [illegible]

HOLE NO.: MW-N

SHEET 12 OF 32 SHEETS

ELEV. a.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
	100	Core SAND(SP) same as above				18	~~Alluvium~~ Sampled @ 1625
		100-102: SP as above.				28	N=65
		Pink to wht, very fine to fine, well rounded qtz, w/ local zones of caliche-like cement, elsewhere unconsolidated. Dry.	BZ=0.0 HS=0.0			37 50	Rec=2.0/2.0
	101						
	102						
	103						
	104						
	105						
	106	106: Cuttings indicate thin zone of $CaCO_3$ cemented sand @ 106', pink, lightly cemented, friable.					
	107						
	108						
	109						

HTW DRILLING LOG

HOLE NO. MW-N

SHEET 13 OF 32 SHEETS

PROJECT: CAFB LF 3/4 RFI Ph II

INSPECTOR: Brian G. Pahy

ELEV. a.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
		SAND (SP) same as above					Alluvium
		Core					
	110	110-111.4: SP, clean, fine grained, rounded qtz sand. Soft, unconsolidated, Reddish yellow (7.5YR 6/6). Trace of MnOx as disseminations.	BZ = 0.0 HS = 0.0			6 19 35 47	Sample @ 1650 N = 54 Rec = 1.4/2.0
	111						
	112						
	113						
	114						
	115						
	116	Cuttings: Appx 116-120': Sand as above, but more strongly cemented w/ CaCO3.					
	117						
	118						
	119						

HTW DRILLING LOG

HOLE NO. MW-N

SHEET 14 OF 32 SHEETS

PROJECT: CAFB LF 3/4 RFI ~~#~~ Ph II

INSPECTOR: Brian A. Cady

EV. a.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
		SAND (SP) same as above					Alluvium
	120	Core:					
		120 - 121.4: Poorly graded sand, fine subangular to round qtz grains. Non-calcic, very clean. Unconsolidated, soft & dry	BZ = 0.0 HS = 0.0			19 40 50 NA	Sample @ 1745 N = 90 Rec. = 1.4/1.5
	121						
	122						
	123						
	124						
	125						
	126						
	127						
	128						

HTW DRILLING LOG

HOLE NO. MW-N

PROJECT CAFB #LF 3/4 RFI Ph II

INSPECTOR [illegible]

SHEET 15 OF 32 SHEETS

LEV. a.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
		SAND (SP) same as above					Alluvium
	129						
	130	Core 130-131.3: SP as above. fine, poorly graded, well-rounded to subround grains. Very clean Trace $CaCO_3$. Soft, dry, unconsolidated.				16 41 50 NA	Sample @ 1800 N = 91 Rec. = 1.3/1.5'
	131						
	132	132-140 - Cuttings becoming damper, same lithology as above.					
	133						
	134						
	135						
	136						
	137						
	138						

HTW DRILLING LOG

PROJECT: CAFB LF 3/4 RFI Ph II

INSPECTOR: [illegible]

HOLE NO.: MW-N

SHEET 16 OF 32 SHEETS

ELEV. b.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
		SAND (SP) same as above					Alluvium
	139						1815 - At 139.5' End of Shift 10/21/94
	140	Core 139.5-141: SP, very fine to fine grained sand, round - subround qtz sand. Clean. Reddish yellow (5YR 7/6). Dry, non-calcic.	Calib. PID to Benzene RF w/ 100ppm isobutylene. BE = 0.0 LEL = 0.0 H_2S = 0.0			13 27 50 NA	Begin shift 10/22/94 @ 715. N = 77 Rec. = 1.4/1.5 Sample @ 750
	141	V. soft, unconsolidated.	BE = 0.0 H_2S = 0.1				
		Silty SAND (SM) Cuttings: 141-149: SM.					
	142	Sand as above with increasing silt content. Damp.					
	143						
	144						
	145						
	146						
	147						

HTW DRILLING LOG

HOLE NO. MW-N

PROJECT: CAFB LF-3/4 RFI Ph II

INSPECTOR: Brian G. Pauly

SHEET 17 OF 32 SHEETS

EV. a.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
		Silty SAND (SM) same as above					Alluvium
	148						
		Core:					
	149	149-150.5: SM: Silty, fine to very fine sand, round to subangular qtz. Reddish yellow (5YR 6/6). Loosely consolidated (easily crumbled in fingers). Damp. Appx 20% silt w/ Mnox disseminated.	BZ = 0.0 H.S. = 0.1			19 33 50	Sampled @ 815 N = 83 Rec. = 1.5/1.5
	150						
	151	Cuttings: 151-159: Show increased degree of induration and cementation. Friable, moderately consolidated.					
	152						
	153						
	159						
	155						
	156						
	157						

HTW DRILLING LOG

PROJECT: CAFB LF 3/4 RFI Ph II

INSPECTOR: Brian [illegible]

HOLE NO.: MW-N

SHEET 19 OF 32 SHEETS

ELEV. a.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
	157	Silty SAND (SM) same as above					Alluvium
	158						
	159	Core					
		159-160 Poorly graded sand (SP). Very clean, fine, rounded qtz w/ occasional blebs of $CaCO_3$. Generally non-calcic & unconsolidated. Lt. reddish yellow (7.5 YR 7/6) Dry.	BZ = 0.1 HS = 0.1			19 50	Alluvium Sample @ 895 N = 50 Rec. = 1.0/1.0
	160						
	161						
	162						
	163						
	164						
	165						
	166						

HTW DRILLING LOG

HOLE NO. MW-N

PROJECT CAFB LF 3/4 RFI Ph II

INSPECTOR [illegible]

SHEET 19 OF 32 SHEETS

LEV. a.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
		SAND (SP) same as above					Alluvium
	167						
	168						
	169						
	170	Core: 170-171.5: SP: well sorted fine sand, qtz, subang to sub rd, very clean, soft and unconsolidated. Damp. non-calcic Reddish yellow (7.5YR 7/6).	BE = 0.0 H.S. = 0.0			7 35 50	Sampled @ 910 N = 85 Rec. = 1.4/1.5'
	171						
	172						
	173						
	174						
	175						
	176						

HTW DRILLING LOG

PROJECT: CAFB LF 3/4 RFI Ph II

INSPECTOR: Brian [illegible]

HOLE NO.: MW-N

SHEET 20 OF 32 SHEETS

ELEV. a.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
	176	SAND (SP) same as above					Alluvium
	177						
	178						
	179						
	180						
		Core:					
	181	180.5 - 181.9; SP very clean, round-subround fine sand, Reddish yellow (7.5YR 7/6), non calcic, dry	BZ=0.1 H.S.=0.0			7 32 50/5"	Sample @ 9:45 N=82 Rec = 1.4/1.5
	182						
	183						
	184						
	185						

HTW DRILLING LOG

HOLE NO. MW-N

PROJECT CAFB LF-3/4 RFI Ph II

INSPECTOR [illegible]

SHEET 21 OF 32 SHEETS

EV. a.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
		SAND (SP) same as above					Alluvium
	186	Cuttings: 186-190: Sandstone					
		Well indurated, well sorted, fine grain ss. Very similar in all respects to unconsolidated sand					
	187	above, except strong $CaCO_3$ Cement. Recovered clasts have					
		poorly to well developed dissolution texture. Pink (5 YR 7/3) w/					
	188	trace matics (2%) & mn oxides.					
	189						
	190	Core 190.5					
		190-~~190.5~~ - Same well cemented				7	Sample @ 1205
		Sandston described above.	B.2. = 0.4			37	N = 87
			H.S. = 0.0			50	Rec = 1.2/1.5
		~~190.2~~					Alluvium
	191	190.5 - 191.2: Reddish Yellow					
		(7.5 YR 6/6), Very fine-fine,					
		silty sand (SM), Occ. clasts					
	192	of cemented sand as above.					
		Overall, soft and unconsolidated.					
		Noticeably finer sand than seen					
		from 160' → 190'.					
	193						1215: Rig leaking Hydraulic Oil, Shutdown to fix.
	194						1315: Restart Drilling
	195						

HTW DRILLING LOG

PROJECT: CAFB LF 3/4 RFI Ph II

INSPECTOR: [illegible]

HOLE NO.: MW-N

SHEET 22 OF 32 SHEETS

LEV. a.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
	195	silty SAND (Sm) same as above					Alluvium
	196						
	197						
	198	silty SAND with cobbles (Sm w/Gm)					Alluvium
	199						
	200	200-201.5 - Core: Sm/Gm Fine sand and silt as above w/ large (up to 1" diam) clasts & cobbles of calcic cemented fine sandstone. Damp, reddish yellow (5YR 6/6). Appearance of clasts suspended in sand/silt imply possible depositional origin of clasts, rather than weathering of more cemented units as digg drag metic effect.	BZ = 0.4 HS = 0.4			16 50 50 50/4"	sample @ 1350 N = 100 Rec. = 1.4/1.8
	201						
	202						
	203						
	204						

HTW DRILLING LOG

PROJECT: CAFB LF 3/4 RFI Ph II

INSPECTOR: [illegible]

HOLE NO. MW-N

SHEET 23 OF 32 SHEETS

LEV. a.	DEPTH b.	DESCRIPTION OF MATERIALS	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
		silty sand w/cobbles (Sm w/Gm) same as above					Alluvium
	205	Cuttings 201-210: Lrg gravels and cobbles to .3' diam. suspended in fine-v. fine silty sand. Sand is round-subangular qtzose. Cobbles are well cemented ($CaCO_3$), moderately friable fine sand to stone, w/ well developed dissolution structures and cavities. MnO_2 on weathered face as blebs. Some possible worm burrows (Gm)					Alluvium
	206		Recal. PID to 57 ppm w/ 100 ppm Isobutylene				Recal @ 1430
	207						
	208						
	209						
	210	Core 210-212: Gm as above, gravel content decreasing below 211'. Matrix is fine silty sand, unconsolidated and non-calcic, fine to very fine, round to subround qtz, v. well sorted.	BZ-0.0 H.S. = 0.0			15 38 46 50	Sample @ 1435 N=84 Rec = 1.8/2.0
	211						
	212						
	213						
	214						

HTW DRILLING LOG

PROJECT: CAFB LF 3/4 RFI Ph II

INSPECTOR: [illegible]

HOLE NO. MW-N

SHEET 24 OF 32 SHEETS

ELEV. a.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
		Silty GRAVEL (Gm) same as above					Alluvium
	215						
	216						
	217						
	218						
	219						
	220	Core: 220-221.5					
		Gm as above - Silty sand with gravel of calcic. SS, v. fine silt to fine grained sand matrix, Soft, unconsolidated, damp. Reddish Yellow, grains are slightly more angular - Subangular than previously seen	BZ = 0.0 H.S. = 0.0			12 36 50 50	Sample @ 1505 N = ~~88~~ 86 Rec = 1.5/2.0
	221						
	222						
	223						

HTW DRILLING LOG

PROJECT: CAFB LF 3/4 RFI Ph II

INSPECTOR: [illegible]

HOLE NO.: MW-N

SHEET 25 OF 32 SHEETS

ELEV. a.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
		silty GRAVEL (GM) same as above					Alluvium
	224	Cuttings 222-230: Same as above; fine sand and silt with gravel. GM					
	225						
	226						
	227						
	228	silty GRAVEL and sandy GRAVEL (GM and GP)					Alluvium
	229						
	230	Core 230 - 231.3:					
		Sand and gravel as above to 230.9', then hard, well indurated & cemented SS w/ calcic cement, Possibly a cobble Which was driven into ~~the~~ Split spoon. (GM/GP)	BZ = 0.0 H.S. = 0.0			3 29 50/4"	Sample @ 1540 N = 79 Rec. = 1.3/1.3
	231						
	232	sandy GRAVEL (GM) with very fine sand					Alluvium
	233						

PROJECT: CAFB LF 3/4 Ph II

HOLE NO.: MW-N

HTW DRILLING LOG

PROJECT: CAFO LF 3/4 RFI PH II

INSPECTOR: [illegible]

HOLE NO.: MW-N

SHEET 26 OF 32 SHEETS

ELEV. a.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
							Alluvium
		Cuttings 232-240:					
	234	Cobbly, fine sand with increasing moisture content. Round-subround qtz sand clasts as described in entries above.					
	235	(GM) same as above					
	236						
	237						
	238						
	239						
	240	Core 240-241.5:					
	241	Clean, poorly graded, fine qtz sand (SP), with appx 10% Silt. Yellow red (7.5YR, 6/8). With increasing moisture. No cobbles or gravel. Sand is well rounded to subround qtz, soft and unconsolidated.	BZ = 0.0 HS = 0.0			6 25 43 50/3"	Alluvium Sample @ 1620 N = 68 Rec = 1.5'/1.5'
	242						

HTW DRILLING LOG

PROJECT: CAFB LF 3/4 RFI Ph II

INSPECTOR: [illegible]

HOLE NO.: MW-N

SHEET 27 OF 32 SHEETS

ELEV. a.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
		SAND(SP) same as above					Alluvium
	243	Cuttings 242-250:					
		Cuttings are similar to sand described above, but cobbles upto 4" of calcic, well-indurated fine SS. Cobbles are slightly friable. Local blebs of white calcite in sand matrix. Drill action indicates a layer of these cobbles @ 246-247', which is then underlain by soft sand.					
	244						
	245						
	246						
	247						
	248						
	249						
	250	Core 250-251.5:					
		Probable sluff of fine silty sand with gravel cal clasts to 1" diameter.	BZ = 0.0 H.S = 0.0			4 2 2 2 33	N = 4 Rec = 1.5/2.5' Driller thinks boring caved some while lifting drill pipe in attempt to clean hole. Take extra 6" drive.
	251						
	252						

HTW DRILLING LOG

PROJECT: CAFB LF 3/4 RFI Ph II

INSPECTOR: [illegible]

HOLE NO. MW-N

SHEET 28 OF 32 SHEETS

ELEV. a.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
		SAND (SP) same as above					Alluvium SAMPLE CONTINUED FROM ABOVE
	253	Cuttings - 253-260: Clayey sand, Reddish brown (10YR, 4/4). Fine grained qtz, round - subround with Appx 20% Clay. Low plasticity, damp. SC					Alluvium
	254						
	255						
	256						
	257						
	258	Core: 258-260' Well sorted, yellow-red, fine grained sand as above. Soft Unconsolidated, damp.	BZ = 0.0 H.S. = 0.0			9 23 33 50/4"	Sample @ 1745 N = 56 Rec = 2/2, upper .7' = Stuff.
	259						
	260						
	261						

HTW DRILLING LOG

PROJECT: CAFB LF 3/4 RFI Ph II

INSPECTOR: Brian [illegible]

HOLE NO.: MW-N

SHEET 29 OF 32 SHEETS

ELEV. a.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
		clayey SAND (SC) same as above					Alluvium
	262	Cuttings 260-270- SC-					
		Wet interbedded fine sand as above, with thin layers of dark reddish brown sandy clay.					1805 - Ck water level @ 270'.
	263	Drill action gives no indication how thick the clay units are,					Not encountered.
		Only seen in cuttings.					
	264						
	265						
	266						
	267						
	268						
	269						
		Core 270-271.5					
	270	Poorly graded fine sand, round-Subround qtz, soft unconsolidated Reddish Yellow (5YR 6/8)	BZ = 0.0 HS = 0.0	MW-N 270		27 34 51	Alluvium Sampled @ 1830 N = 85 Rec = 2/2 (.5' sand)
	271	270.5-271: Sandy clay, yellow (SP)					

PROJECT: CAFB LF 3/4 Ph II

HOLE NO.: MW-N

HTW DRILLING LOG

PROJECT: CAFB LF 3/4 RFI Ph II

INSPECTOR: [signature]

HOLE NO.: MW-N

SHEET 30 OF 32 SHEETS

ELEV. a.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
		SAND (SP) Same as above. red (5 YR 5/6), moderate plasticity, wet, w/ MnOx dendrites.					Attn um 1835 - End of Shift.
	272	271-271.5: SP; poorly graded fine sand, round-subround, with occ. med size angular frags. Unconsolidated, wet.	Calib. PID to ~~Ep~~ 57ppm Benzene R.F w/ 100 ppm isobutylene				10/23/94 - Start Shift 7:15.
	273	Top of Water very close.					
	274	Cuttings 272-280: Fine, poorly graded sand, (SP), Brown (7.5 YR 5/4), wet, well rounded and sorted, with apparent thin interbeds of drk red (2.5 YR 3/6) claystone. Claystone is clean with a waxy luster, & MnOx on Fxs.	B.G = 0.0				
	275						
	276						
	277						
	278						
	279						
	280	Core: 280-282 Poorly graded sand (SP). Fine, well rounded qtz grains. Reddish	BZ = 0.0	MW-N-280		16	Sample @ 0800

HTW DRILLING LOG

PROJECT: CAFB LF 3/4 RFI Ph II

INSPECTOR: [illegible]

HOLE NO.: MW-N

SHEET 31 OF 32 SHEETS

ELEV. a.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS
	281	brown (5YR 5/4) w/ locally lighter zones of $CaCO_3$. Soft & unconsolidated. Occ. clasts of consolidated SS w/ calcic cement. Saturated SAND (SP) same as above	H.S. = 1.7			48 46 40	Alluvium BR N=94 Rec = 2.0/2.0 Start Rising Head test @ 820
	282						
	283	Cuttings 282-289: SP as above, w/ some clasts of dark, red claystone as at 272-280' and calcic cement SS cobbles up to .4' long.					1020 - Water @ 271.9' BGS 1040 - Continue Drilling.
	284						
	285						
	286						
	287						
	288						
	289	Core 289 - 290.5 Poorly graded fine sand (SP) Well rounded qtz, v. dense, wet but water appears to have drained from pore space. Brown (7.5YR 5/4)	Bz = 0.1 H = 1.3	MW-N-290		25 49	Sample @ 1150 N = 99 Rec = 2.0/1.5
	290						

HTW DRILLING LOG

PROJECT: CAFB LF 3/4 RFI

INSPECTOR: Brian G. Rich

HOLE NO.: MW-N

SHEET 32 OF 32 SHEETS

ELEV. a.	DEPTH b.	DESCRIPTION OF MATERIALS c.	FIELD SCREENING RESULTS d.	GEOTECH SAMPLE OR CORE BOX NO e.	ANALYTICAL SAMPLE NO. f.	BLOW COUNTS g.	REMARKS h.
		Local zones of weak $CaCO_3$ cementation. SAND (SP) same as above				50	Alluvium
	291						
	292						
	293						
	294						
	295	Cuttings 5-295: Dark red siltstone w/ mnOx. damp.					Alluvium
	296						
	297						
	298						Note: Monitoring well set 50 feet to north in new boring as this boring had to be abandoned.
	299	T.D. = 299'					Bottom of boring at 299.0 feet

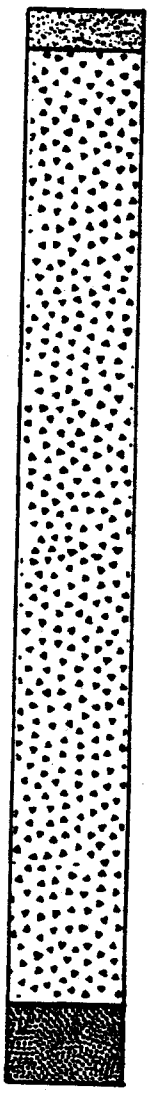
DRAFT

RADIAN CORPORATION

Log of Drilling Operations
Deep Soil Boring #SB-4A

Location Landfill #4 Borehole A
Log Recorded by D. Richmann
Type Drill Rig and Operator Mobile B-61 Hollow-Stem Auger - Winnek, Inc.

Project Cannon AFB - Phase II Stage I
Beginning 8 February 1985 and end 8 February 1985 of drilling operation
Sampling Interval (Estimated) 5 (ft)



Depth (ft)	Core Sample Interval/ID	Type of Sample Taken*	Lithologic Description
0-	SB-4A-1	ST	TOPSOIL; brown, fine to medium, loamy sand; moderately sorted.
5-	SB-4A-2	ST	CALICHE; pinkish tan, fine, poorly sorted sand with abundant well-cemented white calcareous nodules.
10-		G	CALICHE; pinkish tan, poorly sorted sand with 20% well-cemented, white calcareous nodules.
15		G	CALICHE; pinkish tan, fine to medium moderately sorted sand with 25% well-cemented white calcareous nodules.
20-		G	CALICHE; light pink, very fine sand, moderately sorted with minor well-cemented white calcareous nodules.
25-		G	CALICHE; same as above.
30-		G	CALICHE; same as above.
35-		G	SANDSTONE; light pink, with calcareous nodules; fine to medium, angular to subrounded sand; moderately sorted, very hard.
40-		G	CALICHE; pinkish tan, fine sand, moderately sorted with minor well-cemented white calcareous nodules.
45-		G	CALICHE; same as above
50-		G	CALICHE; same as above.
55-		G	SAND; transitional from caliche, pinkish tan fine to med. grained, subrounded, mod. well sorted with minor white calcareous nodules.
60-	SB-4A-3	ST	SAND; tan, medium grained, subrounded, well sorted, unconsolidated.

Borehole SB-4A was grouted from 63 ft (TD) to the surface using 7.5 bags of Portland Type I neat cement.

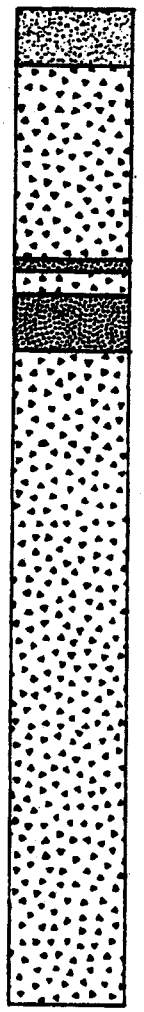
*ST = Shelby tube; SS = split-spoon; G = grab

RADIAN CORPORATION

Log of Drilling Operations
Deep Soil Boring #SB-4B

Location Landfill #4 Borehole B
Log Recorded by D. Richmann
Type Drill Rig and Operator Mobile B-61 Hollow-Stem Auger - Winnek, Inc.

Project Cannon AFB - Phase II Stage I
Beginning 8 February 1985 and end 8 February 1985 of drilling operation
Sampling Interval (Estimated) 5 (ft)



Depth (ft)	Graphic Log	Core Sample Interval/ID	Type of Sample Taken*	Lithologic Description
0-		SB-4B-1	ST	TOPSOIL; red-brown, medium loamy sand, moderately sorted.
5-		SB-4B-2	ST	CALICHE; pinkish tan, fine calcite cemented sand, friable with abundant calcite veins.
10-			G	SAND; pinkish tan, medium grained, well sorted, weakly cemented, with hard well-cemented white nodules.
15-			G	SAND; brown, medium grained, moderately sorted with abundant friable to well cemented calcareous nodules.
20-			G	CALICHE; pinkish-tan, fine, moderately sorted sand with 25% white calcareous nodules.
25-			G	CALICHE; light pink, very fine, well sorted sand with 20% well-cemented, white calcareous nodules.
30-			G	CALICHE; light gray, very fine sand to silt, well sorted, calcareous, very soft.
35-			G	CALICHE; pinkish tan, fine, moderately sorted sand with 20% white calcareous nodules.
40-			G	CALICHE; similar to above with more abundant calcareous nodules.
45-			G	CALICHE; same as above.
50-			G	CALICHE; same as above.
55-			G	CALICHE; same as above - no recovery.
60-				

Borehole SB-4B was grouted from 59.5 ft (TD) to the surface using 7.5 bags of Portland Type I neat cement.

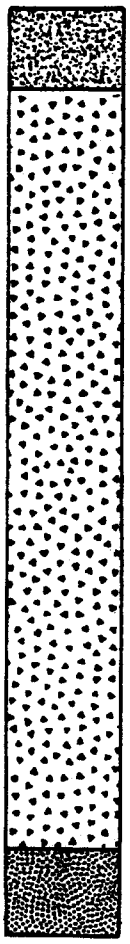
*ST = Shelby tube; SS = split-spoon; G = grab.

RADIAN CORPORATION

Log of Drilling Operations
Deep Soil Boring #SB-4C

Location Landfill #4 Borehole C
Log Recorded by D. Richmann
Type Drill Rig and Operator Mobile B-61 Hollow-Stem Auger - Winnek, Inc.

Project Cannon AFB - Phase II Stage I
Beginning 9 February 1985 and end 9 February 1985 of drilling operation
Sampling Interval (Estimated) 5 (ft)

Depth (ft)	Graphic Log	Core Sample Interval/ID	Type of Sample Taken*	Lithologic Description
0-		SB-4C-1	ST	TOPSOIL; dark red-brown, medium, sandy loam with minor caliche pore-fill.
5-		SB-4C-2	ST	CALICHE; light pink, fine sand, well cemented with calcite.
10-			G	CALICHE; pinkish tan, fine sand, moderately sorted, subrounded, abundant cement and minor calcareous nodules.
15-			G	CALICHE; pink, fine-very fine, sorted, sand w/abundant calcite cement, minor well-cemented white calcareous nodules.
20-			G	CALICHE; light pink, very fine sand w/ abundant calcite cement and minor white calcareous nodules.
25-			G	CALICHE; similar to above; slightly darker colored.
30-			G	CALICHE; same as above.
35-			G	CALICHE; simular to above, with some white, hard siliceous nodules.
40-			G	CALICHE; similar to above, lighter pink colored.
45-			G	CALICHE; similar to above, but with minor calcareous nodules.
50-			ST	SAND; tan, medium, moderately sorted quartz sand, unconsolidated.
55-		SB-4C-3		

Borehole SB-4C was grouted from 54 ft (TD) to the surface using 8 bags of Portland Type I neat cement.

*ST = Shelby tube; SS = split-spoon; G = grab.

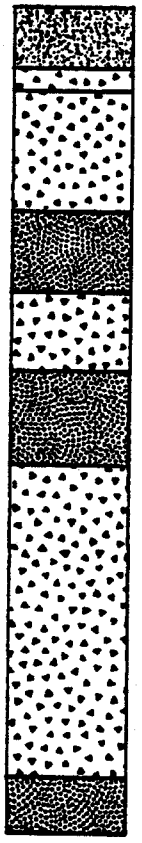
DRAFT

RADIAN CORPORATION

Log of Drilling Operations
Deep Soil Boring #SB-4D

Location Landfill #4 Borehole D
Log Recorded by D. Richmann
Type Drill Rig and Operator Mobile B-61 Hollow-Stem Auger - Winnek, Inc.

Project Cannon AFB - Phase II Stage I
Beginning 11 February 1985 and end 11 February 1985 of drilling operation
Sampling Interval (Estimated) 5 (ft)



Depth (ft)	Core Sample Interval/ID	Type of Sample Taken*	Lithologic Description
0-	SB-4D-1	ST	TOPSOIL; red-brown, poorly sorted loamy sand with caliche pore fill.
5-		G	CALICHE; (from 3'-4.5') is recent deposit.
10-		G	FILL; (from 4.5'-12.5') construction and/or domestic type waste (wood, paper, metal scrap) mixed with soil.
15-	SB-4D-2	ST	SAND; red-brown, medium, moderately sorted sand, weakly consolidated.
20-		G	CALICHE; pinkish-tan fine sand with abundant calcite cement.
25-	SB-4D-3	ST	SAND; red-brown, medium sand, mostly unconsolidated with minor calcareous nodules.
30-		G	CALICHE; light pink fine sand, well cemented; hard.
35-		G	CALICHE; pink-tan, fine sand, moderately sorted, weakly consolidated, minor calcareous nodules.
40-		G	CALICHE; same as above.
45-		G	SAND; tan, fine to medium sand with minor nodules; unconsolidated to weakly cemented in patches.
50-	SB-4D-4		

Borehole SB-4D was grouted from 49 ft (TD) to the surface using 8 bags of Portland Type I neat cement.

*ST = Shelby tuby; SS = split-spoon; G = grab.

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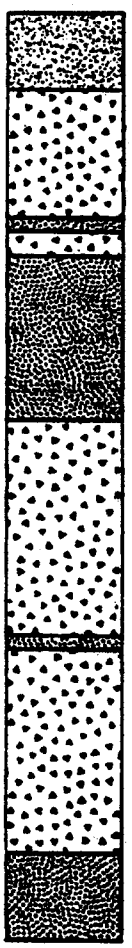
RADIAN CORPORATION

Log of Drilling Operations
Deep Soil Boring #SB-4E

Location Landfill #4 Borehole E
Log Recorded by D. Richmann
Type Drill Rig and Operator Mobile B-61 Hollow-Stem Auger - Winnek, Inc.

Project Cannon AFB - Phase II Stage I
Beginning 11 February 1985 and end 11 February 1985 of drilling operation
Sampling Interval (Estimated) 5 (ft)

Depth (ft)	Graphic Log	Core Sample Interval/ID	Type of Sample Taken*	Lithologic Description
0-		SB-4E-1	ST	TOPSOIL; red-brown, medium loamy sand with minor calcite fill.
5-		SB-4E-2	ST	CALICHE; pinkish-tan, fine sand with abundant calcite veins, above light pink caliche zone.
10-			G	SAND; tan, fine to medium, moderately sorted sand with minor calcareous nodules.
15-			G	SAND; weakly cemented sand, similar to above.
20-			G	CALICHE; light pink, fine sand; well cemented, partially silicified, very hard.
25-			G	CALICHE; tan, poorly-sorted sand; well sorted silt; weakly cemented and with numerous calcite veins.
30-			G	CALICHE; light pink, very fine sand with abundant calcite cement and some white cemented nodules; very soft.
35-			G	CALICHE; as above, interlayered with hard, partially silicified zones.
40-			G	CALICHE; similar to above with fewer cemented nodules.
45-			G	CALICHE; same as above.
50-		SB-4E-3	ST	SAND; tan, medium moderately sorted quartz sand, unconsolidated.
55-				

Borehole SB-4 E was grouted from 54 ft (TD) to the surface using 8 bags of Portland Type I neat cement.

*ST = Shelby tube; SS = split-spoon; G = grab.

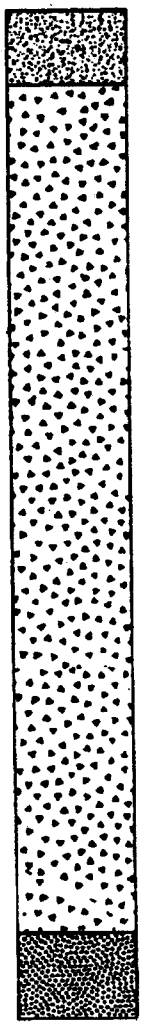
DRAFT

RADIAN CORPORATION

Log of Drilling Operations
Deep Soil Boring #SB-4F

Location Landfill #4 Borehole F
Log Recorded by D. Richmann
Type Drill Rig and Operator Mobile B-61 Hollow-Stem Auger - Winnek, Inc.

Project Cannon AFB - Phase II Stage I
Beginning 9 February 1985 and end 9 February 1985 of drilling operation
Sampling Interval (Estimated) 5 (ft)

Depth (ft)	Graphic Log	Core Sample Interval/ID	Type of Sample Taken*	Lithologic Description
0-		SB-4F-1	ST	TOPSOIL; red-brown, medium loamy sand; moderately sorted.
5-		SB-4F-2	ST	CALICHE; pinkish-tan, fine to medium sand, moderately sorted, friable with abundant well cemented nodules.
10-			G	CALICHE; tan, fine to very fine sand with abundant calcite cement, well sorted/rounded, soft and very friable.
15-			G	CALICHE; same as above.
20-			G	CALICHE; similar to above but with 10% large (up to 3 cm) well cemented white subangular calcareous nodules.
25-			G	CALICHE; same as above.
30-			G	CALICHE; similar to above; slightly lighter colored.
35-			G	CALICHE; same as above.
40-			G	CALICHE; light pink, very fine, well-sorted sand w/abundant calcite cement minor white cemented nodules.
45-			G	CALICHE; same as above.
50-			G	SAND; transitional from caliche; pinkish tan, fine to medium grained, subrounded, moderately sorted, calcrete nodules.
55-		SB-4F-3	SS	SAND; tan, fine to medium, moderately sorted quartz sand, unconsolidated.
60-				

Borehole SB-4F was grouted from 60.5 ft (TD) to the surface using 6 bags of Portland Type I neat cement.

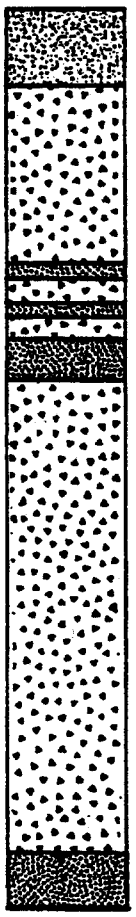
*ST = Shelby tube; SS = split-spoon; G = grab.

RADIAN CORPORATION

Log of Drilling Operations
Deep Soil Boring #SB-4G

Location Landfill #4 Borehole G
Log Recorded by D. Richmann
Type Drill Rig and Operator Mobile B-61 Hollow-Stem Auger - Winnek, Inc.

Project Cannon AFB - Phase II Stage I
Beginning 10 February 1985 and end 10 February 1985 of drilling operation
Sampling Interval (Estimated) 5 (ft)



Depth (ft)	Graphic Log	Core Sample Interval/ID	Type of Sample Taken*	Lithologic Description
0-		SB-4G-1	ST	TOPSOIL; red-brown, medium loamy sand with minor fines.
5-		SB-4G-2	ST	CALICHE; pink, fine sand with calcite cement; friable.
10-			G	SAND; orange-brown, unconsolidated sand; fine-grained, well sorted with trace small nodules in caliche.
15-			G	SAND; same as above.
20-			G	CALICHE; light pink, fine to very fine, moderately sorted w/abundant calcareous cement and 20% calcareous nodules.
25-			G	CALICHE; same as above.
30-			G	CALICHE; same as above.
35-			G	CALICHE; similar to above, but with no large calcareous nodules.
40-			G	CALICHE; similar to above, but w/very hard, partially silicified fragments.
45-			G	CALICHE; as above, but with fewer cemented nodules.
50-		SB-4G-3	ST	SAND; tan, fine to medium, well sorted quartz sand; unconsolidated.
55-				

Borehole SB-4G was grouted from 53 ft (TD) to the surface using 8 bags of Portland Type I neat cement.

*ST = Shelby tube; SS = split-spoon; G = grab.

HTW DRILLING LOG

HOLE NO.	4H
SHEET	1 OF 2 SHEETS
1. COMPANY NAME	Radian Corporation
2. DRILLING CONTRACTOR	SHB
3. PROJECT	Cannon AFB Landfill 4 RI
4. LOCATION	Clovis, N.M.
5. NAME OF DRILLER	Coke Elms
6. MANUFACTURER'S DESIGNATION OF DRILL	CME-75
7. SIZES & TYPES OF DRILLING & SAMPLING EQUIPMENT	6-5/8 Inch I.D. HSA; 3"x 24" Stainless Steel Split Spoon Sampler; Augers, spoons, and drilling equipment decontaminated before use.
8. HOLE LOCATION	1234844.4 North 812591.3 East
9. SURFACE ELEVATION	4273.2'
10. DATE STARTED	8/13/92
11. DATE COMPLETED	8/13/92
12. OVERBURDEN THICKNESS	N/A
15. DEPTH GROUNDWATER ENCOUNTERED	N/A
13. DEPTH DRILLED INTO ROCK	N/A
16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED	N/A
14. TOTAL DEPTH OF HOLE	64.0 Borehole
17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)	N/A

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
2	--	X	11

20. SAMPLES FOR CHEMICAL ANALYSIS	8240	METALS	8270	8080	418.1	21. TOTAL CORE REC %
15	X	X	X	X	X	73

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
Cuttings Drummed	X	--	Hole grouted	[signature]

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
4273.2	0	Red silt; dry; plastic trash bags					
4272.2							
4271.2			0 ppm				
4270.2							
4269.2							
4268.2	5						
4267.2		Red silt; dry; trash, glass, paper	3 ppm				
4266.2							
4265.2							
4264.2							
4263.2	10						
4262.2		Red silt; dry; plastic bags; electrical wire	1 ppm				
4261.2							
4260.2							
4259.2							
4258.2	15						
4257.2		Buff silt; lightly cemented; glass; wire at 16'8"	0 ppm		4H-01 4H-13	19-20- 15-13	4H-13 is DUP 20" recovery
4256.2							
4255.2							
4254.2							
4253.2	20						
4252.2		Red silt; very hard, lightly cemented; nodular	0 ppm		4H-02	20-17- 27-28	8" recovery
4251.2							
4250.2							
4249.2							
4248.2	25						

HTW DRILLING LOG

HOLE NO. 4H

PROJECT: Cannon AFB Landfill 4 RI, Clovis, N.M.

INSPECTOR: James R. Buice

SHEET 2 OF 2 SHEETS

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
4247.2		25-25'4" Red silt; unconsolidated; moist; 25'4"-27' buff calcareous silt; dry; friable	0 ppm		4H-03 4H-15	20-25-34-38	4H-15 is MRD Split Add 8015, 8150 24" recovery
4246.2							
4245.2							
4244.2							
4243.2	30						
4242.2		Buff calcareous silt; dry; friable	0 ppm	4H-30	4H-04	30-110-100	12" recovery
4241.2							
4240.2							
4239.2							
4238.2	35						
4237.2		Red/buff calcareous silt; dry; friable	0 ppm		4H-05 4H-14	27-46-73-150	4H-14 is DUP Add 8015, 8150 24" recovery
4236.2							
4235.2							
4234.2							
4233.2	40						
4232.2		Buff calcareous silt; dry friable	0 ppm		4H-06	15-125-270	12" recovery
4231.2							
4230.2							
4229.2							
4228.2	45						
4227.2		Sandy calcareous silt; tan; dry; friable	0 ppm		4H-07	110-250	12" recovery
4226.2							
4225.2							
4224.2							
4223.2	50						
4222.2		Sandy buff silt; dry; lightly cemented	0 ppm	4H-50	4H-08	26-200	15" recovery
4221.2							
4220.2		Buff silty sand; dry; fine grained; lightly cemented	0 ppm		4H-09	8-10-200	18" recovery
4219.2							
4218.2	55						
4217.2		Tan, fine grained, silty sand			4H-10 4H-16	25-20-25-30	4H-15 is CLP-MRD Split Add 8015, 8150 24" recovery
4216.2							
4215.2							
4214.2							
4213.2	60						
4212.2		Tan, fine grained, well sorted, silty sand; dry; unconsolidated	0 ppm		4H-11	23-24-32-47	24" recovery
4211.2							

HTW DRILLING LOG

HOLE NO.	4I
SHEET 1 OF 2 SHEETS	

1. COMPANY NAME	Radian Corporation
2. DRILLING CONTRACTOR	SHB
3. PROJECT	Cannon AFB Landfill 4 RI
4. LOCATION	Clovis, N.M.
5. NAME OF DRILLER	Coke Elms
6. MANUFACTURER'S DESIGNATION OF DRILL	CME-75
7. SIZES & TYPES OF DRILLING & SAMPLING EQUIPMENT	6-5/8 Inch I.D. HSA; 3"x 24" Stainless Steel Split Spoon Sampler; Augers, spoons, and drilling equipment decontaminated before use.
8. HOLE LOCATION	1234827.2 North 812724.7 East
9. SURFACE ELEVATION	4272.7'
10. DATE STARTED	8/12/92
11. DATE COMPLETED	8/12/92
12. OVERBURDEN THICKNESS	N/A
15. DEPTH GROUNDWATER ENCOUNTERED	N/A
13. DEPTH DRILLED INTO ROCK	N/A
16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED	N/A
14. TOTAL DEPTH OF HOLE	42 64.0 Borehole
17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)	N/A

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
2	--	X	13

20. SAMPLES FOR CHEMICAL ANALYSIS	8240	METALS	8270	8080	418.1	21. TOTAL CORE REC %
14	X	X	X	X	X	74

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
Cuttings Drummed	X	--	Hole grouted	[signature]

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
4272.7	0	Red silt; dry; no trash					
4271.7			0 ppm				
4270.7							
4269.7							
4268.7							
4267.7	5						
4266.7		Red silt; 2-3 mm calcareous nodules; plastic food carton	0 ppm				
4265.7							
4264.7		Red silt; dry; no trash	0 ppm				
4263.7							
4262.7	10						
4261.7		Buff calcareous silt; dry; unconsolidated	0 ppm				
4260.7							
4259.7							
4258.7							
4257.7	15						
4256.7		Red unconsolidated silt; lightly cemented; plastic bag at 15'	0 ppm		4I-01	18-20-20-20	Add 8015, 8150 24" recovery
4255.7							
4254.7							
4253.7							
4252.7	20						
4251.7		Buff calcareous silt; friable; dry; plastic at 20'	0 ppm	4I-20	4I-02	32-24-30-64	MS/MSD CLP 24" recovery
4250.7							
4249.7							
4248.7							
4247.7	25						

HTW DRILLING LOG

PROJECT	INSPECTOR	HOLE NO.
Cannon AFB Landfill 4 RI Clovis, N.M.	James R. Buice	4I
		SHEET 2 OF 2 SHEETS

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
4246.7		NO RECOVERY				300/3	0 recovery
4245.7							
4244.7							
4243.7							
4242.7	30						
4241.7		NO RECOVERY				250-100/3	0 recovery
4240.7							
4239.7		Buff calcareous silt; dry	3 ppm		4I-03	57-100/3	7" recovery
4238.7							
4237.7	35						
4236.7		Buff calcareous silt; sandy; dry; friable	1 ppm		4I-04	24-41-188-200	Add 8015, 8150 18" recovery
4235.7							
4234.7							
4233.7							
4232.7	40						
4231.7		Tan unconsolidated dry silt; 40.5-41':Buff calcareous silt; sandy; dry	0 ppm		4I-05	75-250/3	12" recovery
4230.7							
4229.7							
4228.7							
4227.7	45						
4226.7		Buff calcareous silt; dry; very hard;	0 ppm		4I-06	79-169-100	18" recovery
4225.7							
4224.7		Red silty sand; unconsolidated; fine grain	1 ppm		4I-07 4I-13	13-80-200-8	4I-13 is DUP 22" recovery
4223.7							
4222.7	50						
4221.7		Unconsolidated silty sand; 1" calcareous nodules; dry	0 ppm		4I-08 4I-15	Hammer 18 min.	4I-15 is MRD Split Add 8015, 8150 22" recovery
4220.7							
4219.7		Fine grained, silty sand; dry; unconsolidated	0 ppm	4I-52.5	4I-09 4I-14	50-100-57-82	4I-14 is DUP Add 8015, 8150 24" recovery
4218.7							
4217.7	55						
4216.7		Well sorted, fine grained sand; dry; unconsolidated	0 ppm		4I-10	25-35-96-100	24" recovery
4215.7							
4214.7							
4213.7							
4212.7	60						
4211.7		Red, well sorted, fine grained sand; dry; unconsolidated	0 ppm		4I-11	25-30-65-60	24" recovery
4210.7							

HTW DRILLING LOG

1. COMPANY NAME: Radian Corporation	2. DRILLING CONTRACTOR: SHB	HOLE NO. 4J; SHEET 1 OF 2 SHEETS
3. PROJECT: Cannon AFB Landfill 4 RI	4. LOCATION: Clovis, N.M.	
5. NAME OF DRILLER: Coke Elms	6. MANUFACTURER'S DESIGNATION OF DRILL: CME-75	
7. SIZES & TYPES OF DRILLING & SAMPLING EQUIPMENT: 6-5/8 Inch I.D. HSA; 3"x 24" Stainless Steel Split Spoon Sampler; Augers, spoons, and drilling equipment decontaminated before use.	8. HOLE LOCATION: 1234779.3 North 812503.5 East	
	9. SURFACE ELEVATION: 4272.9'	
	10. DATE STARTED: 8/14/92	11. DATE COMPLETED: 8/14/92
12. OVERBURDEN THICKNESS: N/A	15. DEPTH GROUNDWATER ENCOUNTERED: N/A	
13. DEPTH DRILLED INTO ROCK: N/A	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: N/A	
14. TOTAL DEPTH OF HOLE: ~~64~~ 62.0 Borehole	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): N/A	

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
2	--	X	12

20. SAMPLES FOR CHEMICAL ANALYSIS	8240	METALS	8270	8080	418.1	21. TOTAL CORE REC %
13	X	X	X	X	X	68

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
Cuttings Drummed	X	–	Hole grouted	[signature]

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
4272.9	0	Buff silt; dry; unconsolidated; no trash	0 ppm				
4271.9							
4270.9							
4269.9							
4268.9							
4267.9	5	As above	3 ppm				
4266.9							
4265.9							
4264.9							
4263.9							
4262.9	10	As above	1 ppm				
4261.9							
4260.9							
4259.9							
4258.9							
4257.9	15	Red unconsolidated silt; dry	0 ppm		4J-01 4J-13	12-13- 25-50	4J-13 is DUP Add 8015, 8150 24" recovery
4256.9							
4255.9							
4254.9							
4253.9							
4252.9	20	20-21': Light red silt; 21-22': Buff, calcareous silt; dry; friable	0 ppm		4J-02 4J-15	30-60- 110-150	4J-15 is MRD Split 24" recovery
4251.9							
4250.9							
4249.9							
4248.9							
4247.9	25						

HTW DRILLING LOG

PROJECT	INSPECTOR	HOLE NO.
Cannon AFB Landfill 4 RI Clovis, N.M.	James R. Buice	4J SHEET 2 OF 2 SHEETS

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
4246.9		Light red/buff silt; lightly cemented; dry	0 ppm		4J-03	25-35-25-21	24" recovery
4245.9							
4244.9		Light red sandy silt; unconsolidated; dry			4J-04	250/6	CLP 6" recovery
4243.9							
4242.9	30						
4241.9		Light red/buff silt; lightly cemented; dry; unconsolidated	0 ppm		4J-05 4J-16	37-60-110-150	4J-16 is MRD Split Add 8015, 8150 MS/MSD 24" recovery
4240.9							
4239.9							
4238.9							
4237.9	35						
4236.9		Buff/white calcareous silt; friable; moderately cemented; dry	0 ppm		4J-06	100-200	8" recovery
4235.9							
4234.9							
4233.9							
4232.9	40						
4231.9		NO RECOVERY	0 ppm			250/5	0 recovery
4230.9							
4229.9		NO RECOVERY				Not recorded	0 recovery
4228.9							
4227.9	45						
4226.9		Buff calcareous silt; lightly cemented; sandy silt 46-46'10"; dry	0 ppm	4J-45	4J-07	300-40-40	18" recovery
4225.9							
4224.9							
4223.9							
4222.9	50						
4221.9		Tan calcareous silty sand; 2-3 mm calcareous nodules; dry; unconsolidated	0 ppm		4J-08	35-200	10" recovery
4220.9							
4219.9							
4218.9							
4217.9	55						
4216.9		Light tan, fine grained, well sorted sand; dry; unconsolidated		4J-55	4J-09	10-16-35-25	Add 8015, 8150 24" recovery
4215.9							
4214.9							
4213.9							
4212.9	60						
4211.9		Tan fine grained sand; unconsolidated; well sorted; calcareous at 61.5-62';dry	0 ppm		4J-10	10-11-25-125	24" recovery
4210.9							

HTW DRILLING LOG

HOLE NO.	4K
SHEET	1 OF 2 SHEETS
1. COMPANY NAME	Radian Corporation
2. DRILLING CONTRACTOR	SHB
3. PROJECT	Cannon AFB Landfill 4 RI
4. LOCATION	Clovis, N.M.
5. NAME OF DRILLER	Coke Elms
6. MANUFACTURER'S DESIGNATION OF DRILL	CME-75
7. SIZES & TYPES OF DRILLING & SAMPLING EQUIPMENT	6-5/8 Inch I.D. HSA; 3"x 24" Stainless Steel Split Spoon Sampler; Augers, spoons, and drilling equipment decontaminated before use.
8. HOLE LOCATION	1234713.6 North 812643.8 East
9. SURFACE ELEVATION	4273.8'
10. DATE STARTED	8/12/92
11. DATE COMPLETED	8/13/92
12. OVERBURDEN THICKNESS	N/A
15. DEPTH GROUNDWATER ENCOUNTERED	N/A
13. DEPTH DRILLED INTO ROCK	N/A
16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED	N/A
14. TOTAL DEPTH OF HOLE	63.0 ~~64.0~~ Borehole
17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)	N/A

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
2	--	X	11

20. SAMPLES FOR CHEMICAL ANALYSIS	8240	METALS	8270	8080	418.1	21. TOTAL CORE REC %
13	X	X	X	X	X	86

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
Cuttings Drummed	X	--	Hole grouted	[signature]

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
4273.8 4272.8	0	Red silt; dry; no trash					
4271.8			0 ppm				
4270.8							
4269.8							
4268.8	5						
4267.8		Buff calcareous silt; dry; no trash	0 ppm				
4266.8							
4265.8							
4264.8							
4263.8	10						
4262.8		Buff calcareous silt; dry; no trash	0 ppm				
4261.8							
4260.8							
4259.8							
4258.8	15						
4257.8		Dry red silt; unconsolidated	0 ppm	4K-15	4K-01 4K-13	19-38-25-24	4K-13 is DUP Add 8015, 8150 24" recovery
4256.8							
4255.8							
4254.8							
4253.8	20						
4252.8		Red/buff mottled calcareous silt; very hard	0 ppm		4K-02	50-200	CLP 12" recovery
4251.8							
4250.8							
4249.8							
4248.8	25						

HTW DRILLING LOG

HOLE NO. 4K

PROJECT Cannon AFB Landfill 4 RI Clovis, N.M.

INSPECTOR James R. Buice

SHEET 2 OF 2 SHEETS

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
4247.8		Light buff dry silt; calcareous	0 ppm	4K-25	4K-03	25-50-100-90	MS/MSD 24" recovery
4246.8							
4245.8							
4244.8							
4243.8	30	Buff/white calcareous silt; moderately cemented	0 ppm		4K-04 4K-15	23-52-100-110	4K-15 is MRD Split Add 8015, 8150 24" recovery
4242.8							
4241.8							
4240.8							
4239.8							
4238.8	35	Buff sandy calcareous silt; dry; friable	0 ppm		4K-05	18-50-130-100	22" recovery
4237.8							
4236.8							
4235.8							
4234.8							
4233.8	40	Buff calcareous silt; dry; unconsolidated	0 ppm		4K-06	23-110-200	12" recovery
4232.8							
4231.8							
4230.8							
4229.8							
4228.8	45	Buff calcareous silt; dry	0 ppm		4K-07 4K-16	26-60-93-200	4K-16 is MRD Spl 24" recovery
4227.8							
4226.8							
4225.8							
4224.8							
4223.8	50	Tan sandy silt; unconsolidated; fine grained	0 ppm		4K-08	36-60-156	18" recovery
4222.8							
4221.8							
4220.8							
4219.8							
4218.8	55	NO RECOVERY				200/2	0 recovery
4217.8							
4216.8							
4215.8		Silty sand; tan lightly cemented; dry	0 ppm		4K-09	77-150-116-100	24" recovery
4214.8							
4213.8	60	Silty sand; fine grained; dry	0 ppm		4K-10	18-65-116-150	24" recovery
4212.8							
4211.8							

HTW DRILLING LOG

HOLE NO.	4L
SHEET	1 OF 2 SHEETS
1. COMPANY NAME	Radian Corporation
2. DRILLING CONTRACTOR	SHB
3. PROJECT	Cannon AFB Landfill 4 RI
4. LOCATION	Clovis, N.M.
5. NAME OF DRILLER	Coke Elms
6. MANUFACTURER'S DESIGNATION OF DRILL	CME-75
7. SIZES & TYPES OF DRILLING & SAMPLING EQUIPMENT	6-5/8 Inch I.D. HSA; 3"x 24" Stainless Steel Split Spoon Sampler; Augers, spoons, and drilling equipment decontaminated before use.
8. HOLE LOCATION	1234559.0 North 812604.8 East
9. SURFACE ELEVATION	4269.9'
10. DATE STARTED	8/17/92
11. DATE COMPLETED	8/18/92
12. OVERBURDEN THICKNESS	N/A
15. DEPTH GROUNDWATER ENCOUNTERED	N/A
13. DEPTH DRILLED INTO ROCK	N/A
16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED	N/A
14. TOTAL DEPTH OF HOLE	~~64~~ 62.0 Borehole
17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)	N/A

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
2	--	X	11

20. SAMPLES FOR CHEMICAL ANALYSIS	8240	METALS	8270	8080	418.1	21. TOTAL CORE REC %
14	X	X	X	X	X	93

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
Cuttings Drummed	X	--	Hole grouted	[signature]

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
4269.9	0	Red silt; dry; unconsolidated; no trash	0 ppm				
4268.9							
4267.9							
4266.9							
4265.9							
4264.9	5	Red silt; dry; unconsolidated; plastic bag; paper	0 ppm				
4263.9							
4262.9							
4261.9							
4260.9							
4259.9	10	Red silt; dry; unconsolidated; no trash	0 ppm				
4258.9							
4257.9							
4256.9							
4255.9							
4254.9	15	Red moist silt; unconsolidated; paper, plastic at 15'	0 ppm		4L-01 4L-13	16-16-10-13	4L-13 is DUP Add 8015, 8150 24" recovery
4253.9							
4252.9							
4251.9							
4250.9							
4249.9	20	Red silt; lightly cemented; dry; 2-3 mm calcareous nodules	0 ppm		4L-02	20-21-24-13	24" recovery
4248.9							
4247.9							
4246.9							
4245.9							
4244.9	25						

HTW DRILLING LOG

HOLE NO. 4L

PROJECT: Cannon AFB Landfill 4 RI, Clovis, N.M.

INSPECTOR: James R. Buice

SHEET 2 OF 2 SHEETS

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
4243.9		Red silty sand; unconsolidated; dry	0 ppm		4L-03 4L-15	3-4-3-4	4L-15 is MRD Split Add 8015, 8150 24" recovery
4242.9							
4241.9							
4240.9							
4239.9	30	Buff calcareous silt; dry; very hard	0 ppm		4L-04	200/5	5" recovery
4238.9							
4237.9							
4236.9							
4235.9							
4234.9	35	Sandy silt; buff; d[illegible]; lightly cemented	0 ppm	4L-30	4L-05	19-100-127-80	24" recovery
4233.9							
4232.9							
4231.9		Tan sandy silt; lightly cemented; dry	0 ppm	4L-37.5	4L-06	18-23-37-46	MS/MSD 24" recovery
4230.9							
4229.9	40	Tan sandy silt; unconsolidated; dry; 41-42': calcareous silt; friable; moderately cemented	0 ppm		4L-07	25-30-100-150	24" recovery
4228.9							
4227.9							
4226.9							
4225.9							
4224.9	45	Add 5 gal potable water to hole; silty red sand; unconsolidated; dry	0 ppm		4L-08	44-53-70-90	24" recovery
4223.9							
4222.9							
4221.9							
4220.9							
4219.9	50	Red silty sand; unconsolidated; dry	0 ppm		4L-09	11/72/200/6	CLP 24" recovery
4218.9							
4217.9							
4216.9							
4215.9							
4214.9	55	Fine grained, well sorted, unconsolidated sand; mica flakes; dry	0 ppm		4L-10 4L-14	15-29-70-110	4L-14 is DUP Add 8015, 8150 24" recovery
4213.9							
4212.9							
4211.9							
4210.9							
4209.9	60	Well sorted, fine-med grained, red sand; dry; unconsolidated; mica flakes	0 ppm		4L-11	35-38-45-120	24" recovery
4208.9							
4207.9							

HTW DRILLING LOG

HOLE NO.	4M
SHEET	1 OF 2 SHEETS
1. COMPANY NAME	Radian Corporation
2. DRILLING CONTRACTOR	SHB
3. PROJECT	Cannon AFB Landfill 4 RI
4. LOCATION	Clovis, N.M.
5. NAME OF DRILLER	Coke Elms
6. MANUFACTURER'S DESIGNATION OF DRILL	CME-75
7. SIZES & TYPES OF DRILLING & SAMPLING EQUIPMENT	6-5/8 Inch I.D. HSA; 3"x 24" Stainless Steel Split Spoon Sampler; Augers, spoons, and drilling equipment decontaminated before use.
8. HOLE LOCATION	1234569.5 North 812723.4 East
9. SURFACE ELEVATION	4270.4'
10. DATE STARTED	8/18/92
11. DATE COMPLETED	8/18/92
12. OVERBURDEN THICKNESS	N/A
13. DEPTH DRILLED INTO ROCK	N/A
14. TOTAL DEPTH OF HOLE	62 64.0 Borehole
15. DEPTH GROUNDWATER ENCOUNTERED	N/A
16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED	N/A
17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)	N/A

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
2	--	X	11

20. SAMPLES FOR CHEMICAL ANALYSIS	8240	METALS	8270	8080	418.1	21. TOTAL CORE REC %
13	X	X	X	X	X	81

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
Cuttings Drummed	X	--	Hole grouted	[signature]

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
4270.4	0	Tan silt; dry; unconsolidated; no trash	0 ppm				
4269.4							
4268.4							
4267.4							
4266.4							
4265.4	5	Red silt; dry; unconsolidated; paper	0 ppm				
4264.4							
4263.4							
4262.4							
4261.4							
4260.4	10	Red silt; dry; unconsolidated; no trash	0 ppm				
4259.4							
4258.4							
4257.4							
4256.4							
4255.4	15	Red silt; roots; trash; 15'11"-16'3": calcareous buff silt; moderately cemented; dry	0 ppm		4M-01	11-200	CLP 15" recovery
4254.4							
4253.4							
4252.4							
4251.4							
4250.4	20	Buff/white dry; 2-3 mm calcareous nodules; calcareous silt; friable; moderately cemented; dry	0 ppm		4M-02 4M-15	44-110- 105-130	4M-15 is MRD Split Add 8015, 8150 24" recovery
4249.4							
4248.4							
4247.4		Buff calcareous silt; friable; dry	0 ppm	4M-22'11"	4M-03	200/6	8" recovery
4246.4							
4245.4	25						

HTW DRILLING LOG

HOLE NO. 4M

PROJECT: Cannon AFB Landfill 4 RI, Clovis, N.M.

INSPECTOR: James R. Buice

SHEET 2 OF 2 SHEETS

ELEV a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
4244.4		Buff calcareous silt; dry; moderately cemented	0 ppm		4M-04	12-60-100-81	24" recovery
4243.4							
4242.4							
4241.4							
4240.4	30	Buff calcareous silt; moderately cemented; dry	0 ppm		4M-05	20-38-17-18	Add 8015, 8150 12" recovery
4239.4							
4238.4							
4237.4							
4236.4							
4235.4	35	Very hard calcareous silt; dry; friable	0 ppm		4M-06	Not recorded	24" recovery
4234.4							
4233.4							
4232.4							
4231.4							
4230.4	40	White calcareous silt; dry; friable; moderately cemented	0 ppm		4M-07	35-88-200/6	24" recovery
4229.4							
4228.4							
4227.4							
4226.4							
4225.4	45	Very hard calcareous silt; friable; dry	0 ppm		4M-08	Not recorded	24" recovery
4224.4							
4223.4							
4222.4							
4221.4							
4220.4	50	Calcareous silt; dry; moderately cemented; added 5 gal potable water to hole	0 ppm		4M-09 4M-13	Not recorded	4M-13 is DUP Add 8015, 8150 18" recovery
4219.4							
4218.4							
4217.4							
4216.4							
4215.4	55	Fine grained, well sorted sand; wet; unconsolidated; mica flakes	0 ppm		4M-10	7/5/10/11	24" recovery
4214.4							
4213.4							
4212.4							
4211.4							
4210.4	60	Well sorted, fine grained sand; dry; unconsolidated; mica flakes	0 ppm	4M-60	4M-11	19-29-30-42	24" recovery
4209.4							
4208.4							

HTW DRILLING LOG

HOLE NO.	4N
SHEET	1 OF 2 SHEETS
1. COMPANY NAME	Radian Corporation
2. DRILLING CONTRACTOR	SHB
3. PROJECT	Cannon AFB Landfill 4 RI
4. LOCATION	Clovis, N.M.
5. NAME OF DRILLER	Coke Elms
6. MANUFACTURER'S DESIGNATION OF DRILL	CME-75
7. SIZES & TYPES OF DRILLING & SAMPLING EQUIPMENT	6-5/8 Inch I.D. HSA; 3"x 24" Stainless Steel Split Spoon Sampler; Augers, spoons, and drilling equipment decontaminated before use.
8. HOLE LOCATION	1234541.0 North 812498.4 East
9. SURFACE ELEVATION	4270.7'
10. DATE STARTED	8/15/92
11. DATE COMPLETED	8/15/92
12. OVERBURDEN THICKNESS	N/A
13. DEPTH DRILLED INTO ROCK	N/A
14. TOTAL DEPTH OF HOLE	64.0 Borehole
15. DEPTH GROUNDWATER ENCOUNTERED	N/A
16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED	N/A
17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)	N/A

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED
2	--	X

19. TOTAL NUMBER OF CORE BOXES: 11

20. SAMPLES FOR CHEMICAL ANALYSIS	8240	METALS	8270	8080	418.1	21. TOTAL CORE REC %
15	X	X	X	X	X	85

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
Cuttings Drummed	X	--	Hole grouted	[signature]

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
4270.7	0	Red silt; moist; unconsolidated; no trash					
4269.7							
4268.7			0 ppm				
4267.7							
4266.7							
4265.7	5						
4264.7		Buff silt; dry; no trash	0 ppm				
4263.7							
4262.7							
4261.7							
4260.7	10						
4259.7		As above	0 ppm				
4258.7							
4257.7							
4256.7							
4255.7	15						
4254.7		15-15.5': Rd lightly unconsol. silt; dry; 15.5'-17': Bf calc. silt; red mottling;dry	0 ppm		4N-01 4N-15	108-52-43-48	4N-15 is MRD Split Add 8015, 8150 24" recovery
4253.7							
4252.7		Light red/buff calcareous silt; moderately cemented; dry	0 ppm	4N-17.5	4N-02	17-35-86-85	24" recovery
4251.7							
4250.7	20						
4249.7		Light red/buff silt; lightly cemented; dry	0 ppm		4N-03 4N-13	35-40-100	4N-13 is DUP Add 8015, 8150 18" recovery
4248.7							
4247.7							
4246.7							
4245.7	25						

HTW DRILLING LOG

HOLE NO. 4N

PROJECT: Cannon AFB Landfill 4 RI, Clovis, N.M.

INSPECTOR: James R. Buice

SHEET 2 OF 2 SHEETS

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
4244.7		Buff calcareous silt; dry	0 ppm		4N-04	70-100	12" recovery
4243.7							
4242.7							
4241.7							
4240.7	30	Buff calcareous silt; lightly cemented; dry	0 ppm		4N-05	Not recorded	18" recovery
4239.7							
4238.7							
4237.7							
4236.7							
4235.7	35	Light red silt; lightly cemented; dry; slightly sandy	0 ppm	4N-35	4N-06	75-102-88-88	24" recovery
4234.7							
4233.7							
4232.7							
4231.7							
4230.7	40	Buff calcareous silt; very hard; dry; friable	0 ppm		4N-07	200/6	6" recovery
4229.7							
4228.7							
4227.7							
4226.7							
4225.7	45	Light red sandy silt; unconsolidated; dry	0 ppm		4N-08 4N-16	26-40-45-119	4N-16 is MRD Split Add 8015, 8150 24" recovery
4224.7							
4223.7							
4222.7							
4221.7							
4220.7	50	Red/buff sandy silt; dry; unconsolidated	0 ppm		4N-09	25-77-105-90	24" recovery
4219.7							
4218.7							
4217.7							
4216.7							
4215.7	55	Red, silty grained sand; unconsolidated; dry	0 ppm		4N-10 4N-14	20-50-76-43	4N-14 is CLP DUP Add 8015, 8150 24" recovery
4214.7							
4213.7							
4212.7							
4211.7							
4210.7	60	Red, fine grained, well sorted sand; flakes; dry; unconsolidated	1 ppm		4N-11	10-22-46-107	24" recovery
4209.7							
4208.7							

HTW DRILLING LOG

HOLE NO.	4P
SHEET	1 OF 2 SHEETS
1. COMPANY NAME	Radian Corporation
2. DRILLING CONTRACTOR	SHB
3. PROJECT	Cannon AFB Landfill 4 RI
4. LOCATION	Clovis, N.M.
5. NAME OF DRILLER	Coke Elms
6. MANUFACTURER'S DESIGNATION OF DRILL	CME-75
7. SIZES & TYPES OF DRILLING & SAMPLING EQUIPMENT	6-5/8 Inch I.D. HSA; 3"x 24" Stainless Steel Split Spoon Sampler; Augers, spoons, and drilling equipment decontaminated before use.
8. HOLE LOCATION	1234467.6 North 812647.4 East
9. SURFACE ELEVATION	4268.6'
10. DATE STARTED	8/17/92
11. DATE COMPLETED	8/17/92
12. OVERBURDEN THICKNESS	N/A
13. DEPTH DRILLED INTO ROCK	N/A
14. TOTAL DEPTH OF HOLE	62~~64~~.0 Borehole
15. DEPTH GROUNDWATER ENCOUNTERED	N/A
16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED	N/A
17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)	N/A

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
2	--	X	12

20. SAMPLES FOR CHEMICAL ANALYSIS	8240	METALS	8270	8080	418.1	21. TOTAL CORE REC %
15	X	X	X	X	X	86

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
Cuttings Drummed	X	--	Hole grouted	[signature]

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
4268.6	0	Red silt; moist; unconsolidated; no trash	0 ppm				
4267.6							
4266.6							
4265.6							
4264.6							
4263.6	5	Red silt; moist; no trash; unconsolidated	0 ppm				
4262.6							
4261.6							
4260.6							
4259.6							
4258.6	10	Red silt; dry; unconsolidated, no trash	0 ppm				
4257.6							
4256.6							
4255.6							
4254.6							
4253.6	15	Red moist silt; lightly cemented	0 ppm		4P-01 4P-13	Not recorded	4P-13 is DUP Add 8015, 8150 24" recovery
4252.6							
4251.6							
4250.6		Red/buff calcareous silt; dry; very hard	0 ppm		4P-02	170-100/2	8" recovery
4249.6							
4248.6	20	Calcareous silt; very hard; friable; dry	0 ppm		4P-03 4P-14	40-56-100-100	4P-14 is CLP DUP Add 8015, 8150 24" recovery
4247.6							
4246.6							
4245.6							
4244.6							
4243.6	25						

HTW DRILLING LOG

PROJECT	INSPECTOR	HOLE NO.
Cannon AFB Landfill 4 RI Clovis, N.M.	James R. Buice	4P SHEET 2 OF 2 SHEETS

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
4242.6		Red/tan silt; lightly cemented; dry	0 ppm		4P-04	40-60-40-60	24" recovery
4241.6							
4240.6							
4239.6							
4238.6	30	Lightly cemented sandy silt; dry	0 ppm		4P-05 4P-15	35-30-75-100	4P-15 is MRD Split 24" recovery
4237.6							
4236.6							
4235.6		Red sandy silt; unconsolidated; dry	0 ppm	4P-32.5	4P-06	24-45-40-63	24" recovery
4234.6							
4233.6	35	Red/buff calcareous silt; very hard; dry	0 ppm		4P-07	70-200	12" recovery
4232.6							
4231.6							
4230.6							
4229.6							
4228.6	40	Silty clay; lightly cemented	0 ppm		4P-08	Not recorded	12" recovery
4227.6							
4226.6							
4225.6							
4224.6							
4223.6	45	Added 5 gal potable water to hole; tan calcareous silty clay; moderately cemented	0 ppm		4P-09	Not recorded	24" recovery
4222.6							
4221.6							
4220.6							
4219.6							
4218.6	50	Buff silty sand; moist; mica flakes	0 ppm	4P-50	4P-10	10-26-45-75	24" recovery
4217.6							
4216.6							
4215.6							
4214.6							
4213.6	55	Red silty sand; unconsolidated; dry; fine grained	0 ppm		4P-11	10-22-46-30	24" recovery
4212.6							
4211.6							
4210.6							
4209.6							
4208.6	60	Fine grained, well sorted sand; dry; unconsolidated	0 ppm		4P-12	27-35-60-100	24" recovery
4207.6							
4206.6							

HTW DRILLING LOG

HOLE NO.	4Q
SHEET 1 OF 2 SHEETS	
1. COMPANY NAME	Radian Corporation
2. DRILLING CONTRACTOR	SHB
3. PROJECT	Cannon AFB Landfill 4 RI
4. LOCATION	Clovis, N.M.
5. NAME OF DRILLER	Coke Elms
6. MANUFACTURER'S DESIGNATION OF DRILL	CME-75
7. SIZES & TYPES OF DRILLING & SAMPLING EQUIPMENT	6-5/8 Inch I.D. HSA; 3"x 24" Stainless Steel Split Spoon Sampler; Augers, spoons, and drilling equipment decontaminated before use.
8. HOLE LOCATION	1234316.5 North 812536.4 East
9. SURFACE ELEVATION	4266.6'
10. DATE STARTED	8/15/92
11. DATE COMPLETED	8/16/92
12. OVERBURDEN THICKNESS	N/A
13. DEPTH DRILLED INTO ROCK	N/A
14. TOTAL DEPTH OF HOLE	264.0 Borehole
15. DEPTH GROUNDWATER ENCOUNTERED	N/A
16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED	N/A
17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)	N/A

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
2	--	X	14

20. SAMPLES FOR CHEMICAL ANALYSIS	8240	METALS	8270	8080	418.1	21. TOTAL CORE REC %
13	X	X	X	X	X	56

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
Cuttings Drummed	X	--	Hole grouted	[signature]

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
4266.6	0	Red silt; dry; unconsolidated; no trash					
4265.6							
4264.6			0 ppm				
4263.6							
4262.6							
4261.6	5						
4260.6		Buff silt; dry; unconsolidated; no trash	0 ppm				
4259.6							
4258.6							
4257.6							
4256.6	10						
4255.6		Red silt; dry; unconsolidated; no trash	0 ppm				
4254.6							
4253.6		Buff silt; dry; no trash; unconsolidated;	0 ppm lightly				
4252.6							
4251.6	15						
4250.6		Red silt; dry; unconsolidated	0 ppm		4Q-01	11-29-50-100	24" recovery
4249.6							
4248.6							
4247.6							
4246.6	20						
4245.6		Red/buff calcareous silt; lightly cemented	0 ppm		4Q-02	13-19-30-90	24" recovery
4244.6							
4243.6							
4242.6							
4241.6	25						

HTW DRILLING LOG

HOLE NO. 4Q

PROJECT: Cannon AFB Landfill 4 RI, Clovis, N.M.

INSPECTOR: James R. Buice

SHEET 2 OF 2 SHEETS

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
4240.6		Very hard calcareous silt; nodular; white	0 ppm		4Q-03	45-100	8" recovery
4239.6							
4238.6							
4237.6							
4236.6	30	Lightly cemented buff calcareous silt; dry	0 ppm		4Q-04 4Q-13	25-30- 21-27	4Q-13 is DUP Add 8015, 8150 24' recovery
4235.6							
4234.6							
4233.6							
4232.6							
4231.6	35	NO RECOVERY				Not recorded	0 recovery
4230.6							
4229.6							
4228.6		NO RECOVERY				200/5	0 recovery
4227.6							
4226.6	40	Very hard buff calcareous silt; dry	0 ppm		4Q-05	150-200	CLP 6" recovery
4225.6							
4224.6							
4223.6							
4222.6							
4221.6	45	Recover three, 3" dia. calc. rocks; No sample collected				Hammer 20 min.	0 recovery
4220.6							
4219.6							
4218.6		NO RECOVERY				Not recorded	0 recovery
4217.6							
4216.6	50	Very hard buff calcareous silt; dry; nodular	0 ppm		4Q-06	Hammer 18 min.	5" recovery
4215.6							
4214.6							
4213.6		Buff silty sand; dry lightly cemented; unconsolidated	0 ppm		4Q-07 4Q-15	18-47- 52-77	4Q-15 is MRD Split Add 8015, 8150 18" recovery
4212.6							
4211.6	55	Red/tan, fine grained, well sorted sand; dry; unconsolidated	0 ppm		4Q-08 4Q-14	45-36- 65-65	4Q-14 is DUP 24" recovery
4210.6							
4209.6							
4208.6		Red, unconsolidated, well sorted, fine grained sand; dry	0 ppm	4Q-57.5	4Q-09	35-34- 35-40	24" recovery
4207.6							
4206.6	60	Fine grained, well sorted, red sand; mica flakes; dry; unconsolidated	0 ppm	4Q-60	4Q-10	23-24- 63-68	Add 8015, 8150 24" recovery
4205.6							
4204.6							

HTW DRILLING LOG

HOLE NO.	4R
SHEET	1 OF 2 SHEETS
1. COMPANY NAME	Radian Corporation
2. DRILLING CONTRACTOR	SHB
3. PROJECT	Cannon AFB Landfill 4 RI
4. LOCATION	Clovis, N.M.
5. NAME OF DRILLER	Coke Elms
6. MANUFACTURER'S DESIGNATION OF DRILL	CME-75
7. SIZES & TYPES OF DRILLING & SAMPLING EQUIPMENT	6-5/8 Inch I.D. HSA; 3"x 24" Stainless Steel Split Spoon Sampler; Augers, spoons, and drilling equipment decontaminated before use.
8. HOLE LOCATION	1234332.9 North 812712.5 East
9. SURFACE ELEVATION	4266.7'
10. DATE STARTED	8/16/92
11. DATE COMPLETED	8/16/92
12. OVERBURDEN THICKNESS	N/A
13. DEPTH DRILLED INTO ROCK	N/A
14. TOTAL DEPTH OF HOLE	62.0 Borehole
15. DEPTH GROUNDWATER ENCOUNTERED	N/A
16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED	N/A
17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)	N/A

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
2	--	X	12

20. SAMPLES FOR CHEMICAL ANALYSIS	8240	METALS	8270	8080	418.1	21. TOTAL CORE REC %
14	X	X	X	X	X	74

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
Cuttings Drummed	X	--	Hole grouted	[signature]

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
4266.7	0	Red silt; dry; unconsolidated; no trash					
4265.7							
4264.7			0 ppm				
4263.7							
4262.7							
4261.7	5						
4260.7		Red silt; moist; no trash; unconsolidated	0 ppm				
4259.7							
4258.7							
4257.7							
4256.7	10						
4255.7		As above	0 ppm				
4254.7							
4253.7		Buff calcareous silt; dry; no trash; very hard; friable	0 ppm				
4252.7							
4251.7	15						
4250.7		Red silt; dry; moderately cemented; friable	0 ppm		4R-01 4R-13	13-13- 30-25	4R-13 is DUP Add 8015, 8150 24" recovery
4249.7							
4248.7		Buff calcareous silt; lightly cemented; friable; dry	0 ppm		4R-02 4R-15	18-48- 58-100	4R-15 is MRD Split Add 8015, 8150 18" recovery
4247.7							
4246.7	20						
4245.7		Buff calcareous silt; friable; dry	0 ppm		4R-03	100/100/3	CLP 6" recovery
4244.7							
4243.7							
4242.7							
4241.7	25						

HTW DRILLING LOG

HOLE NO. 4R

PROJECT: Cannon AFB Landfill 4 RI, Clovis, N.M.

INSPECTOR: James R. Buice

SHEET 2 OF 2 SHEETS

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
4240.7		Buff calcareous silt; friable; dry	0 ppm		4R-04	28-35-45-20	24" recovery
4239.7							
4238.7		Buff/red lightly cemented dry silt	0 ppm	4R-27.5	4R-05	Not recorded	24" recovery
4237.7							
4236.7	30	Buff calcareous silt; lightly cemented; dry	0 ppm		4R-06	25-30-17-9	24" recovery
4235.7							
4234.7							
4233.7							
4232.7							
4231.7	35	Buff lightly cemented silt; dry	0 ppm		4R-07	100-38-150	18" recovery
4230.7							
4229.7							
4228.7							
4227.7							
4226.7	40	Buff sandy silt; friable; calcareous; dry	0 ppm	4R-40	4R-08	110-140-200/3	15" recovery
4225.7							
4224.7							
4223.7							
4222.7							
4221.7	45	NO RECOVERY				Hammer 20 min.	0 recovery
4220.7							
4219.7							
4218.7							
4217.7							
4216.7	50	Buff sandy calcareous silt; moderately cemented	0 ppm		4R-09	30-95-105	12" recovery
4215.7							
4214.7							
4213.7							
4212.7							
4211.7	55	Tan, fine grained, silty sand; dry; unconsolidated	0 ppm		4R-10 4R-16	27-44-53-70	4R-16 is MRD Split Add 8015, 8150 24" recovery
4210.7							
4209.7							
4208.7							
4207.7							
4206.7	60	Red, fine grained, well sorted sand; unconsolidated; mica flakes; dry	0 ppm		4R-11	27-32-47-60	12" recovery
4205.7							
4204.7							

LANDFILL No.25
(LF-25/SWMU 97)

PSI / NATIONAL SOIL SERVICES DIVISION

LOG OF BORING NO. B- 2 CANNON AFB
PROJECT NO. 342-65219

TYPE BORING: Wash/Rotary

DATE OF BORING: 12/2 to 12/3-86

DEPTH, FT.	SAMPLE	SOIL DESCRIPTION ELEVATION: +4278'	MOISTURE CONTENT, %	UNIT DRY WT. PCF	UNCONFINED COMPRESSIVE STRENGTH, TSF OR SPT BLOWS/6IN.	REMARKS
	■	Red brown clayey SAND, slightly moist				(fill)
5	■	(SC)				
10	■	Red brown clayey SAND w/sandstone seams, cemented, slightly moist				
15		(SC)				
		-clay content decreasing				
20	■					
		Red brown SAND, cemented, slightly moist				
25		(SP)				
30	■					

PSI / NATIONAL SOIL SERVICES DIVISION

LOG OF BORING NO. B-2 CANNON AFB CONT.

PROJECT NO. 342-65219

TYPE BORING: Wash/Rotary

DATE OF BORING: 12/2 to 12/3-86

DEPTH, FT.	SAMPLE	SOIL DESCRIPTION	MOISTURE CONTENT, %	UNIT DRY WT PCF	UNCONFINED COMPRESSIVE STRENGTH, TSF OR SPT BLOWS/6 IN.	REMARKS
		Red brown SAND, cemented, slightly moist				
35						
		(SP)				
40	■					
45						
50	⊠				100 for 6"	
55						
60	⊠				100 for 6"	

PSI / NATIONAL SOIL SERVICES DIVISION

LOG OF BORING NO. B-2 CANNON AFB CONT.

PROJECT NO. 342-65219

TYPE BORING: Wash/Rotary

DATE OF BORING: 12/2 to 12/3-86

DEPTH, FT.	SAMPLE	SOIL DESCRIPTION	MOISTURE CONTENT, %	UNIT DRY WT. PCF	UNCONFINED COMPRESSIVE STRENGTH, TSF OR SPT BLOWS/6IN.	REMARKS
65		Red brown SAND, cemented, slightly moist				
70	☒	(SP)			100 for 7"	
75		Red brown & tan SAND, cemented, slightly moist				
80	☒	(SP)			100 for 3"	
85						
90	☒				100 for 3"	

PSI / NATIONAL SOIL SERVICES DIVISION

LOG OF BORING NO. B-2 CANNON AFB CONT.
PROJECT NO. 342-65219

TYPE BORING: Wash/Rotary

DATE OF BORING: 12/2 to 12/3-86

DEPTH, FT.	SAMPLE	SOIL DESCRIPTION	MOISTURE CONTENT, %	UNIT DRY WT PCF	UNCONFINED COMPRESSIVE STRENGTH, TSF OR SPT BLOWS/6 IN.	REMARKS
		Red brown & tan SAND, cemented, slightly moist				
95		(SP)				
100	X				100 for 3"	
		Total Depth Of Boring= 100'				
105						
110						
115						
120						

Boring backfilled with cement grout at completion of drilling.

PSI / NATIONAL SOIL SERVICES DIVISION

LOG OF BORING NO. B-3 CANNON AFB

PROJECT NO. 342-65219

TYPE BORING: Wash/Rotary

DATE OF BORING: 12/4 to 12/5-86

DEPTH, FT.	SAMPLE	SOIL DESCRIPTION ELEVATION: +4277'	MOISTURE CONTENT,%	UNIT DRY WT. PCF	UNCONFINED COMPRESSIVE STRENGTH, TSF OR SPT BLOWS/6 IN.	REMARKS
		Red brown sandy CLAY, slightly moist -soil cement encountered 2'-2.5' (CL)				(fill)
5 10 15		Red brown & tan clayey SAND, slightly moist (SC)				
20 25 30	X	Red brown SAND, cemented, slightly moist (SP)			100 for 12"	

PSI / NATIONAL SOIL SERVICES DIVISION

LOG OF BORING NO. B-3 CANNON AFB CONT.

PROJECT NO. 342-65219

TYPE BORING: Wash/Rotary

DATE OF BORING: 12/4 to 12/5-86

DEPTH, FT.	SAMPLE	SOIL DESCRIPTION	MOISTURE CONTENT, %	UNIT DRY WT PCF	UNCONFINED COMPRESSIVE STRENGTH, TSF OR SPT BLOWS/6 IN.	REMARKS
		Red brown SAND, cemented, slightly moist				
35		(SP)				
40	■					
45						
50	■					
55						
60	■					

PSI / NATIONAL SOIL SERVICES DIVISION

LOG OF BORING NO. B-3 CANNON AFB CONT.

PROJECT NO. 342-65219

TYPE BORING: Wash/Rotary

DATE OF BORING: 12/4 to 12/5-86

DEPTH, FT.	SAMPLE	SOIL DESCRIPTION	MOISTURE CONTENT, %	UNIT DRY WT. PCF	UNCONFINED COMPRESSIVE STRENGTH, TSF OR SPT BLOWS/6 IN.	REMARKS
		Red brown SAND, cemented, slightly moist				
65		(SP)				
70	☒				100 for 6"	
75						
80	☒				100 for 5"	
85						
90	☒				100 for 3"	

PSI / NATIONAL SOIL SERVICES DIVISION

LOG OF BORING NO. B-3 CANNON AFB CONT.
PROJECT NO. 342-65219

TYPE BORING: Wash/Rotary

DATE OF BORING: 12/4 to 12/5-86

DEPTH, FT.	SAMPLE	SOIL DESCRIPTION	MOISTURE CONTENT, %	UNIT DRY WT PCF	UNCONFINED COMPRESSIVE STRENGTH, TSF OR SPT BLOWS/6 IN.	REMARKS
		Red brown SAND, cemented, slightly moist				
95		(SP)				
100	X				100 for 3"	
		Total Depth Of Boring= 100'				
105						
110						
115						
120						

Boring filled with cement grout at completion of drilling.

PSI / NATIONAL SOIL SERVICES DIVISION

LOG OF BORING NO. MONITOR WELL (CANNON A.F.B.)
PROJECT NO. 342-65219

TYPE BORING: Wash/Rotary

DATE OF BORING: 11/18/86-11/24/86

DEPTH, FT.	SAMPLE	SOIL DESCRIPTION	MOISTURE CONTENT, %	UNIT DRY WT. PCF	UNCONFINED COMPRESSIVE STRENGTH, TSF OR SPT BLOWS/6 IN.	REMARKS
		Brown to dark gray clayey SAND				
5		-Light brown				
10						
		-Hard layer at 12.5' approx. 10" thick				
15		-Becoming tan to brown				
20		-Brown gravelly clay w/calcareous material				
		-Numerous thin hard seams				
25		-Hard seam @ 25' possibly cemented sand				
		Light brown sandy gravelly CLAY w/ calcareous nodules, cemented				
30						

PSI / NATIONAL SOIL SERVICES DIVISION

LOG OF BORING NO. MONITOR WELL (CANNON A.F.B)
PROJECT NO. 342-65219

TYPE BORING: Wash/Rotary

DATE OF BORING: 11/18/86-11/24/86

DEPTH, FT.	SAMPLE	SOIL DESCRIPTION	MOISTURE CONTENT, %	UNIT DRY WT PCF	UNCONFINED COMPRESSIVE STRENGTH, TSF OR SPT BLOWS/6 IN.	REMARKS
		Light brown sandy gravelly CLAY w/calcareous nodules, cemented -Hard seam at 33'				
35						
		Red SANDSTONE				
40						
		Tan gravelly clayey SAND w/sandstone seams				
45						
		Alternating layers of tan to brown clayey SAND to sandy CLAY				
50						
		-w/occasional gravel -Hard layer from 54' to 56', cemented				
55						
60						

PSI / NATIONAL SOIL SERVICES DIVISION

LOG OF BORING NO. MONITOR WELL (CANNON A.F.B.)
PROJECT NO. 342-65219

TYPE BORING: Wash/Rotary

DATE OF BORING: 11/18/86-11/24/86

DEPTH, FT.	SAMPLE	SOIL DESCRIPTION	MOISTURE CONTENT, %	UNIT DRY WT. PCF	UNCONFINED COMPRESSIVE STRENGTH, TSF OR SPT BLOWS/6 IN.	REMARKS
		Alternating layers of tan to brown clayey SAND to sandy CLAY				
65		Tan to brown clayey silty SAND w/ cemented calcareous material -Hard layer at 67'				
70						
75		-Hard layer at 75'				
		-sandy clay layer approximately 2' thick				
80		-becoming clayey SAND w/gravel				
		-Hard seam at 82.5'				
85						
90						

PSI / NATIONAL SOIL SERVICES DIVISION

LOG OF BORING NO. MONITOR WELL (CANNON A.F.B.)

PROJECT NO. 342-65219

TYPE BORING: Wash/Rotary

DATE OF BORING: 11/18/86-11/24/86

DEPTH, FT.	SAMPLE	SOIL DESCRIPTION	MOISTURE CONTENT, %	UNIT DRY WT. PCF	UNCONFINED COMPRESSIVE STRENGTH, TSF OR SPT BLOWS/6 IN.	REMARKS
		-Very hard layer from 92' to 97'				
95						
		-Clayey SAND w/occasional gravel				
100						
		-Medium hard layer from 101.5' to 103'				
105						
		Tan to brown sandy CLAY w/occasional gravel & calcareous material, cemented				
110		Sand content decreasing				
115						
120						

PSI / NATIONAL SOIL SERVICES DIVISION

LOG OF BORING NO. MONITOR WELL (CANNON A.F.B.)

PROJECT NO. 342-65219

TYPE BORING: Wash/Rotary

DATE OF BORING: 11/18/86-11/24/86

DEPTH, FT.	SAMPLE	SOIL DESCRIPTION	MOISTURE CONTENT, %	UNIT DRY WT. PCF	UNCONFINED COMPRESSIVE STRENGTH, TSF OR SPT BLOWS/6 IN.	REMARKS
125		-Hard seam @ 125' less than 6" thick				
130		-sand increasing				
135		Red brown clayey fine SAND, cemented				
140		-w/calcareous nodules				
145		-becoming tan & brown				
150						

PSI / NATIONAL SOIL SERVICES DIVISION

LOG OF BORING NO. MONITOR WELL (CANNON A.F.B.)

PROJECT NO. 342-65219

TYPE BORING: Wash/Rotary

DATE OF BORING: 11/18/86-11/24/86

DEPTH, FT.	SAMPLE	SOIL DESCRIPTION	MOISTURE CONTENT, %	UNIT DRY WT. PCF	UNCONFINED COMPRESSIVE STRENGTH, TSF OR SPT BLOWS/6 IN.	REMARKS
		Tan & brown clayey fine SAND, cemented				
155						
160		-Very hard layer @ 161' less than 6" thick				
165		-Hard seam at 166'				
170						
175		-Hard layer at 175' less than 4" thick				
180						

PSI / NATIONAL SOIL SERVICES DIVISION

LOG OF BORING NO. MONITOR WELL (CANNON A.F.B.)

PROJECT NO. 342-65219

TYPE BORING: Wash/Rotary

DATE OF BORING: 11/18/86-11/24/86

DEPTH, FT.	SAMPLE	SOIL DESCRIPTION	MOISTURE CONTENT, %	UNIT DRY WT. PCF	UNCONFINED COMPRESSIVE STRENGTH, TSF OR SPT BLOWS/6 IN.	REMARKS
		Tan & brown clayey fine SAND, cemented				
185						
190						
195						
200		-Hard seam				
205						
210		Tan to brown silty fine SAND w/ occasional calcareous material				

PSI / NATIONAL SOIL SERVICES DIVISION

LOG OF BORING NO. MONITOR WELL (CANNON A.F.B.)

PROJECT NO. 342-65219

TYPE BORING: Wash/Rotary

DATE OF BORING: 11/18/86-11/24/86

DEPTH, FT.	SAMPLE	SOIL DESCRIPTION	MOISTURE CONTENT, %	UNIT DRY WT. PCF	UNCONFINED COMPRESSIVE STRENGTH, TSF OR SPT BLOWS / 6 IN.	REMARKS
		Tan to brown silty fine SAND w/ occasional calcareous material, cemented				
215						
220						
225						
230						
235		-Hard layer @ 235' approx. 6" thick				
240						

PSI / NATIONAL SOIL SERVICES DIVISION

LOG OF BORING NO. MONITOR WELL (CANNON A.F.B.)

PROJECT NO. 342-65219

TYPE BORING: Wash/Rotary

DATE OF BORING: 11/18/86-11/24/86

DEPTH, FT.	SAMPLE	SOIL DESCRIPTION	MOISTURE CONTENT, %	UNIT DRY WT PCF	UNCONFINED COMPRESSIVE STRENGTH, TSF OR SPT BLOWS/6 IN.	REMARKS
		Tan to brown silty fine SAND w/ occasional calcareous material, cemented				
245						
250		-Hard lense @ 251.5' less than 4" thick				
255						
260						
265						
270						

PSI / NATIONAL SOIL SERVICES DIVISION

LOG OF BORING NO. MONITOR WELL (CANNON A.F.B.)

PROJECT NO. 342-65219

TYPE BORING: Wash/Rotary

DATE OF BORING: 11/18/86-11/24/86

DEPTH, FT.	SAMPLE	SOIL DESCRIPTION	MOISTURE CONTENT, %	UNIT DRY WT PCF	UNCONFINED COMPRESSIVE STRENGTH, TSF OR SPT BLOWS/6 IN.	REMARKS
		Tan to brown silty fine SAND w/occasional calcareous material, cemented				
275						
280						
285						
290						
295						
300						

PSI / NATIONAL SOIL SERVICES DIVISION

LOG OF BORING NO. MONITOR WELL (CANNON A.F.B.)

PROJECT NO. 342-65219

TYPE BORING: Wash/Rotary

DATE OF BORING: 11/18/86-11/24/86

DEPTH, FT.	SAMPLE	SOIL DESCRIPTION	MOISTURE CONTENT, %	UNIT DRY WT. PCF	UNCONFINED COMPRESSIVE STRENGTH, TSF OR SPT BLOWS/6 IN.	REMARKS
		Harder past 300'				
305		Tan to brown fine SAND w/hard layers, cemented				
310						
315						
320						
325						
330						

PSI / NATIONAL SOIL SERVICES DIVISION

LOG OF BORING NO. MONITOR WELL (CANNON A.F.B.)
PROJECT NO. 342-65219

TYPE BORING: Wash/Rotary

DATE OF BORING: 11/18/86-11/24/86

DEPTH, FT.	SAMPLE	SOIL DESCRIPTION	MOISTURE CONTENT, %	UNIT DRY WT. PCF	UNCONFINED COMPRESSIVE STRENGTH, TSF OR SPT BLOWS/6 IN.	REMARKS
335		-Very hard @ 336' sand becoming coarser, well graded, cemented				
340						
345						
350						
355		-Bit refusal @ 356'				
		Total Depth Of Boring= 356'				
360						

HOLE NO. TRENCH 1

DRILLING LOG

DIVISION	SOUTHWEST
INSTALLATION	CANNON AFB
SHEET	1 of 1 SHEETS
1. PROJECT	Rubble Pile (SWMU-97) Investigat
2. LOCATION (Coordinates or Station)	0.00 0.00
3. DRILLING AGENCY	COE - TULSA
4. HOLE NO. (As shown on drawing title and file number)	TRENCH 1
5. NAME OF DRILLER	Bill Bowen
6. DIRECTION OF HOLE	☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	7.0
8. DEPTH DRILLED INTO ROCK	1.0
9. TOTAL DEPTH OF HOLE	8.0
10. SIZE AND TYPE OF BIT	Backhoe
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	MSL
12. MANUFACTURER'S DESIGNATION OF DRILL	
13. OVERBURDEN SAMPLES	DISTURBED 2 / UNDISTURBED
14. TOTAL NUMBER CORE BOXES	0
15. ELEVATION GROUND WATER	Not encountered
16. DATE HOLE	STARTED 12/04/1990 / COMPLETED 12/04/1990
17. ELEVATION TOP OF HOLE	0.0
18. TOTAL CORE RECOVERY FOR BORING	0.0 %
INSPECTOR	Bill Bowen

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	1		Gravel (GM) (0.0 - 1.2) Gravel, sandy, loose, damp to dry, minor silt, brown. 1.1-1.2' Sand, silty, red-brown.			Excavated trench with a backhoe. Dug approximatel 1foot below rubble into undisturbed soil. Sample taken from concret blocks and cement. SAMPLE DEPTH T101 5.0- 5.5 T102 5.0- 5.5
	2		Gravel (GM) (1.2 - 2.4) Gravel (fill), rounded, sandy, minor silt, loose, gray-brown, dry.			
	3		Asphalt (2.4 - 4.0) Asphalt paving chunks mixed with gravel, sandy, loose, dry, gray-brown. (pavement with subgrade).			
	4 5		Gravel (4.0 - 5.5) Gravel (fill), rounded with sand, minor silt, loose, gray-brown. Dry pocket of concrete block debris with cement 4.5-5.0'.		T101 T102	
	6 7		Sand(SM) (5.5 - 7.0) Tarry soil (fill) with soil. Tar 6.9-7.0.			
	8		Sand (SM) (7.0 - 8.0) Sand, silty, moderate dense, damp to dry, red-brown. BOTTOM OF TRENCH			
	9 10					

PROJECT: Rubble Pile (SWMU-97) Investigat

HOLE NO. TRENCH 1

HOLE NO. TRENCH 2

DRILLING LOG

DIVISION	SOUTHWEST
INSTALLATION	CANNON AFB
SHEET	1 OF 1 SHEETS
1. PROJECT	Rubble Pile (SWMU-97) Investigat
2. LOCATION (Coordinates or Station)	0.00 0.00
3. DRILLING AGENCY	COE - TULSA
4. HOLE NO. (As shown on drawing title and file number)	TRENCH 2
5. NAME OF DRILLER	Bill Bowen
6. DIRECTION OF HOLE	☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	4.2
8. DEPTH DRILLED INTO ROCK	5.0
9. TOTAL DEPTH OF HOLE	9.2
10. SIZE AND TYPE OF BIT	Backhoe
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	MSL
12. MANUFACTURER'S DESIGNATION OF DRILL	
13. OVERBURDEN SAMPLES	DISTURBED 3 / UNDISTURBED
14. TOTAL NUMBER CORE BOXES	0
15. ELEVATION GROUND WATER	Not encountered
16. DATE HOLE	STARTED 12/05/1990 / COMPLETED 12/05/1990
17. ELEVATION TOP OF HOLE	0.0
18. TOTAL CORE RECOVERY FOR BORING	0.0 %
INSPECTOR	Bill Bowen

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	1		Sand (SP) (0.0 - 1.7) Sand (fill), gravelly, loose, some concrete and asphalt, dry tan.			Excavated trench with a trackhoe. Collected sampl from light pink gravelly sand. Asphaltic layer appears to be on old parking lot. SAMPLE DEPTH T201 2.8- 3.2 T202 2.8- 3.2 T203 2.8- 3.2 T204 4.2- 5.2 T205 4.2- 5.2 T206 8.2- 9.2 T207 8.2- 9.2
	2		Gravel (GM) (1.7 - 2.5) Gravel (fill), sandy, minor clay, dense, gray-brown.			
	3		Sand (SP) (2.5 - 3.3) Sand (fill), gravelly, minor clay and silt, dense, caliche, light tan to pink.		T201 T202 T203	
	4		Sand (SP) (3.3 - 4.2) Sand (fill), fine grained, red brown, dense, minor caliche. Asphaltic layer loose, regular flat, 4.0-4.2'.			
	5		Sand (SM) (4.2 - 6.0) Sand, silty, damp to dry, dense, red-brown.		T204 T205	
	6					
	7		Sand, (SM) (6.0 - 9.2) Sand, very dense, with caliche cement and nodules, dry, light tan to pink.			
	8					
	9		BOTTOM OF TRENCH		T206 T207	
	10					

PROJECT: Rubble Pile (SWMU-97) Investigat

HOLE NO.: TRENCH 2

DRILLING LOG

DIVISION	SOUTHWEST
INSTALLATION	CANNON AFB
SHEET	1 OF 2 SHEETS
1. PROJECT	Rubble Pile (SWMU-97) Investigat
2. LOCATION (Coordinates or Station)	0.00 0.00
3. DRILLING AGENCY	COE - TULSA
4. HOLE NO. (As shown on drawing title and file number)	TRENCH 3
5. NAME OF DRILLER	Bill Bowen
6. DIRECTION OF HOLE	☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	8.0
8. DEPTH DRILLED INTO ROCK	5.0
9. TOTAL DEPTH OF HOLE	13.0
10. SIZE AND TYPE OF BIT	Backhoe
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	MSL
12. MANUFACTURER'S DESIGNATION OF DRILL	
13. OVERBURDEN SAMPLES	DISTURBED 3 / UNDISTURBED
14. TOTAL NUMBER CORE BOXES	0
15. ELEVATION GROUND WATER	Not encountered
16. DATE HOLE	STARTED 12/04/1990 / COMPLETED 12/04/1990
17. ELEVATION TOP OF HOLE	0.0
18. TOTAL CORE RECOVERY FOR BORING	0.0 %
INSPECTOR	Bill Bowen

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	1, 2		Gravel (GM) (0.0 - 2.8) Gravel (fill), sandy, loose, dry, dark gray-brown, with some asphalt.			Excavated trench with a trackhoe. No building rubble. SAMPLE / DEPTH: T301 5.8- 6.3; T302 5.8- 6.3; T303 5.8- 6.3; T304 8.0- 9.0; T305 8.0- 9.0; T306 12.0- 13.0; T307 12.0- 13.0
	3, 4		Sand (SP) (2.8 - 4.8) Sand (fill), gravelly, dense, dry, gray-brown.			
	5, 6, 7, 8		Asphalt (4.8 - 8.0) Asphalt(fill), with sub-grade, dense, dark gray brown.		T301 T302 T303	
	9, 10		Sand (SM) (8.0 - 10.5) Sand, silty, moderate dense, damp to dry, red-brown.		T304 T305	

HOLE NO. TRENCH 3

DRILLING LOG	DIVISION SOUTHWEST	INSTALLATION CANNON AFB	SHEET 2 OF 2 SHEETS

1. PROJECT	Rubble Pile (SWMU-97) Investigat
2. LOCATION (Coordinates or Station)	0.00 0.00
3. DRILLING AGENCY	COE - TULSA
4. HOLE NO. (As shown on drawing title and file number)	TRENCH 3
5. NAME OF DRILLER	Bill Bowen
6. DIRECTION OF HOLE	☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	8.0
8. DEPTH DRILLED INTO ROCK	5.0
9. TOTAL DEPTH OF HOLE	13.0
10. SIZE AND TYPE OF BIT	Backhoe
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	MSL
12. MANUFACTURER'S DESIGNATION OF DRILL	
13. OVERBURDEN SAMPLES	DISTURBED 3 / UNDISTURBED
14. TOTAL NUMBER CORE BOXES	0
15. ELEVATION GROUND WATER	Not encountered
16. DATE HOLE	STARTED 12/04/1990 / COMPLETED 12/04/1990
17. ELEVATION TOP OF HOLE	0.0
18. TOTAL CORE RECOVERY FOR BORING	0.0 %
INSPECTOR	Bill Bowen T308

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			Sand (SM) (8.0 - 10.5) Sand, silty, moderate dense, damp to dry, red-brown.			
	11		Sand (SM) (10.5 - 13.0) Sand, minor silt, dense, damp to dry, caliche nodules and cement, light pink.			
	12				T306 T307	
	13		BOTTOM OF TRENCH			
	14					
	15					
	16					
	17					
	18					
	19					
	20					

HOLE NO. TRENCH 4

DRILLING LOG

DIVISION	SOUTHWEST
INSTALLATION	CANNON AFB
SHEET	1 of 2 SHEETS
1. PROJECT	Rubble Pile (SWMU-97) Investigat
2. LOCATION (Coordinates or Station)	0.00 0.00
3. DRILLING AGENCY	COE - TULSA
4. HOLE NO. (As shown on drawing title and file number)	TRENCH 4
5. NAME OF DRILLER	Bill Bowen
6. DIRECTION OF HOLE	☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	15.5
8. DEPTH DRILLED INTO ROCK	1.0
9. TOTAL DEPTH OF HOLE	16.5
10. SIZE AND TYPE OF BIT	Backhoe
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	MSL
12. MANUFACTURER'S DESIGNATION OF DRILL	
13. OVERBURDEN SAMPLES	DISTURBED 2 / UNDISTURBED
14. TOTAL NUMBER CORE BOXES	0
15. ELEVATION GROUND WATER	Not encountered
16. DATE HOLE	STARTED 12/04/1990 / COMPLETED 12/05/1990
17. ELEVATION TOP OF HOLE	0.0
18. TOTAL CORE RECOVERY FOR BORING	0.0 %
	Bill Bowen — INSPECTOR

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	1		Asphalt (0.0 – 1.0) Asphalt (fill), gravelly, dry, minor sand and silt, tan to gray.			Excavated trench with a backhoe. T401 was taken from plaster board, T402 was taken from the ash. SAMPLE DEPTH T 401 9.9–10.0 T 402 9.0–9.5
	2 3 4 5 6 7 8		Sand (SP) (1.0 – 8.5) Sand (fill), with some asphalt and gravel, dry, caliche, tan to pink.			
	9 10		ASH (8.5 – 10.0) Ash and cinders from coal fire bottles, minor metal, some asbestos building tile. White plaster board material 9.9–10.0'.		T 402 T 401	

HOLE NO. TRENCH 4

DRILLING LOG	DIVISION SOUTHWEST	INSTALLATION CANNON AFB	SHEET 2 OF 2 SHEETS

1. PROJECT	Rubble Pile (SWMU-97) Investigat
2. LOCATION (Coordinates or Station)	0.00 0.00
3. DRILLING AGENCY	COE – TULSA
4. HOLE NO. (As shown on drawing title and file number)	TRENCH 4
5. NAME OF DRILLER	Bill Bowen
6. DIRECTION OF HOLE	☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	15.5
8. DEPTH DRILLED INTO ROCK	1.0
9. TOTAL DEPTH OF HOLE	16.5
10. SIZE AND TYPE OF BIT	Backhoe
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	MSL
12. MANUFACTURER'S DESIGNATION OF DRILL	
13. OVERBURDEN SAMPLES	DISTURBED 2 / UNDISTURBED
14. TOTAL NUMBER CORE BOXES	0
15. ELEVATION GROUND WATER	Not encountered
16. DATE HOLE	STARTED 12/04/1990 / COMPLETED 12/05/1990
17. ELEVATION TOP OF HOLE	0.0
18. TOTAL CORE RECOVERY FOR BORING	0.0 %
INSPECTOR	Bill Bowen

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	11, 12, 13		Sand (SM) (10.0 – 13.5) Sand (fill), silty, moderate dense, damp to dry, red-brown.			
	14, 15		ASH (13.5 – 15.5) Ash and cinders from what appears to be coal, bottles, and some metal.			
	16		Sand (SM) (15.5 – 16.5) Sand, silty, moderately dense, damp to dry, red-brown, with pink caliche in bottom of hole BOTTOM OF TRENCH			
	17, 18, 19, 20					

HOLE NO. TRENCH 5

DRILLING LOG	DIVISION SOUTHWEST	INSTALLATION CANNON AFB	SHEET 1 OF 1 SHEETS
1. PROJECT	Rubble Pile (SWMU-97) Investigat	10. SIZE AND TYPE OF BIT	Backhoe
2. LOCATION (Coordinates or Station)	0.00 0.00	11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	MSL
3. DRILLING AGENCY	COE - TULSA	12. MANUFACTURER'S DESIGNATION OF DRILL	
4. HOLE NO. (As shown on drawing title and file number)	TRENCH 5	13. OVERBURDEN SAMPLES	DISTURBED 3 / UNDISTURBED
5. NAME OF DRILLER	Bill Bowen	14. TOTAL NUMBER CORE BOXES	0
6. DIRECTION OF HOLE	☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER	Not encountered
		16. DATE HOLE	STARTED 12/05/1990 / COMPLETED 12/05/1990
7. THICKNESS OF OVERBURDEN	2.0	17. ELEVATION TOP OF HOLE	0.0
8. DEPTH DRILLED INTO ROCK	5.0	18. TOTAL CORE RECOVERY FOR BORING	0.0 %
9. TOTAL DEPTH OF HOLE	7.0	Bill Bowen	INSPECTOR

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–2		GRAVEL (GP) (0.0 – 2.0) Gravel (fill), sandy, loose, dry, with asphalt chunks.		T501 T502 T503	Excavated trench with a trackhoe. T501 was taken from under an asbestos tile.
	2–4.4		SAND (SM) (2.0 – 4.4) Sand, silty, clayey, moderate dense, damp to dry, red-brown. Grades from dark red-brown at surface.		T504 T505 T504QC T505QC	
	4.4–7.0		SAND (SM) (4.4 – 7.0) Sand, silty, with caliche nodules, dense, damp to dry, pink to tan.		T506 T507	
	7		BOTTOM OF TRENCH			

SAMPLE	DEPTH
T501	0.4– 0.9
T502	0.4– 0.9
T503	0.4– 0.9
T504	2.0– 3.0
T505	2.0– 3.0
T504QC	2.0– 3.0
T505QC	2.0– 3.0
T506	6.0– 7.0
T507	6.0– 7.0

HOLE NO. TRENCH 6

DRILLING LOG

DIVISION	SOUTHWEST
INSTALLATION	CANNON AFB
SHEET	1 OF 1 SHEETS
1. PROJECT	Rubble Pile (SWMU-97) Investigat
2. LOCATION (Coordinates or Station)	0.00 0.00
3. DRILLING AGENCY	COE - TULSA
4. HOLE NO. (As shown on drawing title and file number)	TRENCH 6
5. NAME OF DRILLER	Bill Bowen
6. DIRECTION OF HOLE	☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	3.6
8. DEPTH DRILLED INTO ROCK	2.0
9. TOTAL DEPTH OF HOLE	5.6
10. SIZE AND TYPE OF BIT	Backhoe
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	MSL
12. MANUFACTURER'S DESIGNATION OF DRILL	
13. OVERBURDEN SAMPLES	DISTURBED 2 / UNDISTURBED
14. TOTAL NUMBER CORE BOXES	0
15. ELEVATION GROUND WATER	Not encountered
16. DATE HOLE	STARTED 12/05/1990 / COMPLETED 12/05/1990
17. ELEVATION TOP OF HOLE	0.0
18. TOTAL CORE RECOVERY FOR BORING	0.0 %
INSPECTOR	Bill Bowen

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	1		SAND (SM) (0.0 - 1.5) Sand (fill) gravelly, loose, dry, tan with concrete rubble.		T601 T602	Excavated trench with a trackhoe. 2.1 feet of fill dirt that appears almost like natural soil. SAMPLE DEPTH T601 0.5- 1.0 T602 0.5- 1.0
	2, 3		SAND (SM) (1.5 - 3.6) Sand (fill), silty, minor caliche, some coal, dense, dry red-brown. Distinct boundry with the underlying soil.			
	4, 5		SAND (SM) (3.6 - 5.6) Sand, silty, minor clay, very dense, damp to dry, red-brown.			
			BOTTOM OF TRENCH			
	6, 7, 8, 9, 10					

PROJECT: Rubble Pile (SWMU-97) Investigat

HOLE NO. TRENCH 6

HOLE NO. TRENCH 7

DRILLING LOG	DIVISION SOUTHWEST	INSTALLATION CANNON AFB	SHEET 1 OF 1 SHEETS

1. PROJECT	Rubble Pile (SWMU-97) Investigat
2. LOCATION (Coordinates or Station)	0.00 0.00
3. DRILLING AGENCY	COE - TULSA
4. HOLE NO. (As shown on drawing title and file number)	TRENCH 7
5. NAME OF DRILLER	Bill Bowen
6. DIRECTION OF HOLE	☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	0.0
8. DEPTH DRILLED INTO ROCK	5.0
9. TOTAL DEPTH OF HOLE	5.0
10. SIZE AND TYPE OF BIT	Backhoe
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	MSL
12. MANUFACTURER'S DESIGNATION OF DRILL	
13. OVERBURDEN SAMPLES	DISTURBED 2 / UNDISTURBED
14. TOTAL NUMBER CORE BOXES	0
15. ELEVATION GROUND WATER	Not encountered
16. DATE HOLE	STARTED 12/05/1990 / COMPLETED 12/05/1990
17. ELEVATION TOP OF HOLE	0.0
18. TOTAL CORE RECOVERY FOR BORING	0.0 %
INSPECTOR	Bill Bowen

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	1		SAND (SM) (0.0 - 1.8) Sand, silty, moderate dense, dry, blocky, brown.		T701 T702 T704 T705	Excavated trench with a trackhoe. No rubble at location for rubble sampl TCLP sample moved to Trench 8. Asbestos and PCB sample collected from surface material 0-1 inch
	2		SAND (SM) (1.8 - 3.0) Sand, silty, very dense, dry, red-brown.			
	3		SAND (SM) (3.0 - 5.0) Sand, silty, with caliche, very dense, damp to dry, light ton to pink.			
	4				T706 T707	
	5		BOTTOM OF TRENCH			
	6					
	7					
	8					
	9					
	10					

SAMPLE	DEPTH
T701	0.0- 0.1
T702	0.0- 0.1
T704	0.0- 1.0
T705	0.0- 1.0
T706	4.0- 5.0
T707	4.0- 5.0

HOLE NO. TRENCH 8

DRILLING LOG

DIVISION	SOUTHWEST
INSTALLATION	CANNON AFB
SHEET	1 of 1 SHEETS
1. PROJECT	Rubble Pile (SWMU-97) Investigat
10. SIZE AND TYPE OF BIT	Backhoe
2. LOCATION (Coordinates or Station)	0.00 0.00
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	MSL
3. DRILLING AGENCY	COE - TULSA
12. MANUFACTURER'S DESIGNATION OF DRILL	
4. HOLE NO. (As shown on drawing title and file number)	TRENCH 8
13. OVERBURDEN SAMPLES	DISTURBED 3 / UNDISTURBED
14. TOTAL NUMBER CORE BOXES	0
5. NAME OF DRILLER	Bill Bowen
15. ELEVATION GROUND WATER	Not Encountered
6. DIRECTION OF HOLE	☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.
16. DATE HOLE	STARTED 12/05/1990 / COMPLETED 12/05/1990
17. ELEVATION TOP OF HOLE	0.0
7. THICKNESS OF OVERBURDEN	8.5
18. TOTAL CORE RECOVERY FOR BORING	0.0 %
8. DEPTH DRILLED INTO ROCK	1.0
9. TOTAL DEPTH OF HOLE	9.5
	Bill Bowen — INSPECTOR

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	1, 2, 3, 4		Sand (SM) (0.0 – 4.0) Sand (fill) with caliche one layer of ash in middle from what appears to be ash from adjacent trench.			Excavated trench with a trackhoe. Collected TCLP sample in ash and cinders in lieu of Trench 7. Estimated top of ground approximately 6 feet below surface. SAMPLE / DEPTH: TB01 4.5– 4.6; TB02 6.0– 6.3; TB03 6.0– 6.3
	5, 6, 7, 8		Ash (4.0 – 8.5) Ash and cinders (residue from coal) other burned material, bottles, some partially burned newspaper. Residential trash. Some evidence of burning in wall of trench.		TB01; TB02, TB03	
	9		Sand (SM) (8.5 – 9.5) Sand with caliche nodules and cement, dense, dry, lt. tan to pink. BOTTOM OF TRENCH			
	10					

PROJECT: Rubble Pile (SWMU-97) Investigat — HOLE NO. TRENCH 8

HOLE NO. BG TRENCH

DRILLING LOG	DIVISION SOUTHWEST	INSTALLATION CANNON AFB	SHEET 1 OF 1 SHEETS

1. PROJECT	Rubble Pile (SWMU-97) Investigat
2. LOCATION (Coordinates or Station)	0.00 0.00
3. DRILLING AGENCY	COE - TULSA
4. HOLE NO. (As shown on drawing title and file number)	BG TRENCH
5. NAME OF DRILLER	Bill Bowen
6. DIRECTION OF HOLE	☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	0.0
8. DEPTH DRILLED INTO ROCK	5.0
9. TOTAL DEPTH OF HOLE	5.0
10. SIZE AND TYPE OF BIT	Backhoe
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	MSL
12. MANUFACTURER'S DESIGNATION OF DRILL	
13. OVERBURDEN SAMPLES	DISTURBED / UNDISTURBED
14. TOTAL NUMBER CORE BOXES	0
15. ELEVATION GROUND WATER	Not encountered
16. DATE HOLE	STARTED 12/05/1990 COMPLETED 12/05/1990
17. ELEVATION TOP OF HOLE	0.0
18. TOTAL CORE RECOVERY FOR BORING	0.0 %
	Bill Bowen — INSPECTOR

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	1, 2, 3		SAND (SM) (0.0 – 3.7) Sand, silty, moderately dense, damp, red-brown. (Good soil layer development.) Distinct boundry with caliche layer below.		BG04 BG05	Excavated trench with a trackhoe. Hole location is in field 400 feet due north of site. SAMPLE DEPTH BG04 0.0– 1.0 BG05 0.0– 1.0 BG06 4.0– 5.0 BG07 4.0– 5.0
-3.7	4		SAND (SM) (3.7 – 5.0) Sand, silty, with caliche nodules, very dense, damp to dry, light tan to pink.		BG06	
-5.0	5		BOTTOM OF TRENCH		BG07	
	6, 7, 8, 9, 10					

PROJECT: Rubble Pile (SWMU-97) Investigat | HOLE NO. BG TRENCH

HTW DRILLING LOG

HOLE NO.	2A
SHEET	1 OF 2 SHEETS
1. COMPANY NAME	Radian Corporation
2. DRILLING CONTRACTOR	Southwest Engineer'g
3. PROJECT	Cannon AFB Landfill 25 RI
4. LOCATION	Clovis, N.M.
5. NAME OF DRILLER	Alex Sanchez
6. MANUFACTURER'S DESIGNATION OF DRILL	CME-55
7. SIZES & TYPES OF DRILLING & SAMPLING EQUIPMENT	4-1/4 Inch I.D. HSA; 3 Inch Stainless Steel Split Spoon Sampler; Augers, spoons, and drilling equipment decontaminated before use.
8. HOLE LOCATION	1235671.3 North 811048.5 East
9. SURFACE ELEVATION	4279.6'
10. DATE STARTED	10/7/92
11. DATE COMPLETED	10/7/92
12. OVERBURDEN THICKNESS	N/A
13. DEPTH DRILLED INTO ROCK	N/A
14. TOTAL DEPTH OF HOLE	10.0 Borehole
15. DEPTH GROUNDWATER ENCOUNTERED	N/A
16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED	N/A
17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)	N/A

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
2	X		2

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	8270 8080 & 418.1	8015	8150	21. TOTAL CORE REC %
3	4	4	4	2	2	100

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
Cuttings Drummed	X	–	Hole grouted	Eric P. Kovach

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
4279.6	0	Sand with low percentage of clay; very fine to medium grained sand; 0-4'; debris (concrete, asphalt, etc.) in top 6"	0 ppm	2A-S	2A-S		Surface sample
4278.6	1						
4277.6	2						
4276.6	3						
4275.6	4						
4274.6	5						

MRK FORM JUN 89 55

PROJECT Cannon AFB Landfill 25 RI
Clovis, N.M.

HOLE NO. 2A

HTW DRILLING LOG

PROJECT	INSPECTOR	HOLE NO.
Cannon AFB Landfill 25 RI Clovis, N.M.	Eric P. Kovatch	2A SHEET 2 OF 2 SHEETS

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
		White to buff-red, sandy silt; compact; friable; very fine sands; 4-7	0 ppm		2A-I	6/7/6/4	24" Recovery Interval 5-7'
4273.6	6						
4272.6	7						
4271.6	8	Same as above except color is buff-red; 7-10'	0 ppm	2A-06	2A-06	4/6/6/8	24" Recovery Interval 8-10'
4270.6	9						
		Bottom of hole.					
4269.6	10						

MRK FORM JUN 89 55

PROJECT Cannon AFB Landfill 25 RI
Clovis, N.M.

HOLE NO. 2A

HTW DRILLING LOG

1. COMPANY NAME: Radian Corporation	2. DRILLING CONTRACTOR: Southwest Engineer'g	HOLE NO. 2B; SHEET 1 OF 2 SHEETS
3. PROJECT: Cannon AFB Landfill 25 RI	4. LOCATION: Clovis, N.M.	
5. NAME OF DRILLER: Alex Sanchez	6. MANUFACTURER'S DESIGNATION OF DRILL: CME-55	
7. SIZES & TYPES OF DRILLING & SAMPLING EQUIPMENT: 4-1/4 Inch I.D. HSA; 3 Inch Stainless Steel Split Spoon Sampler; Augers, spoons, and drilling equipment decontaminated before use.	8. HOLE LOCATION: 1235681.2 North 811055.4 East	
	9. SURFACE ELEVATION: 4279.6'	
	10. DATE STARTED: 10/7/92	11. DATE COMPLETED: 10/7/92
12. OVERBURDEN THICKNESS: N/A	15. DEPTH GROUNDWATER ENCOUNTERED: N/A	
13. DEPTH DRILLED INTO ROCK: N/A	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: N/A	
14. TOTAL DEPTH OF HOLE: 10.0 Borehole	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): N/A	

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
2	X--		2

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	8270 8080 & 418.1	8015	8150	21. TOTAL CORE REC %
3	4	4	4	1	1	100

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
Cuttings Drummed	X	--	Hole grouted	Eric P. Kourath

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
4279.6	0	Red sand; fine; dry to moist; loose with some clay; debris present (concrete); 0-4'	0 ppm		2B-S		Surface sample
4278.6	1						
4277.6	2						
4276.6	3						
4275.6	4						
4274.6	5						

MRK FORM JUN 89 55

PROJECT: Cannon AFB Landfill 25 RI, Clovis, N.M.

HOLE NO. 2B

HTW DRILLING LOG

HOLE NO.	
2B	
SHEET 2 OF 2 SHEETS	

PROJECT	INSPECTOR
Cannon AFB Landfill 25 RI Clovis, N.M.	Eric P. Kovatch

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
		Sandy silt; buff-red to red; compact; friable; very fine to fine sand; 4-10'	0 ppm	2B-I	2B-I	5/9/9/8	24" recovery Interval 5-7'
4273.6	6						
4272.6	7						
4271.6	8	Same as above	0 ppm	2B-06	2B-06	15/10/ 10/11	24" recovery Interval 8-10'
4270.6	9						
4269.6	10	Bottom of hole.					

PROJECT	HOLE NO.
Cannon AFB Landfill 25 RI Clovis, N.M.	2B

MRK FORM JUN 89 55

HTW DRILLING LOG

HOLE NO.	3A
SHEET	1 OF 4 SHEETS
1. COMPANY NAME	Radian Corporation
2. DRILLING CONTRACTOR	Southwest Engineer'g
3. PROJECT	Cannon AFB Landfill 25 RI
4. LOCATION	Clovis, N.M.
5. NAME OF DRILLER	Alex Sanchez
6. MANUFACTURER'S DESIGNATION OF DRILL	CME-55
7. SIZES & TYPES OF DRILLING & SAMPLING EQUIPMENT	4-1/4 Inch I.D. HSA; 3 Inch Stainless Steel Split Spoon Sampler; Augers, spoons, and drilling equipment decontaminated before use.
8. HOLE LOCATION	1235634.5 North 810790.4 East
9. SURFACE ELEVATION	4290.0'
10. DATE STARTED	10/1/92
11. DATE COMPLETED	10/4/92
12. OVERBURDEN THICKNESS	N/A
13. DEPTH DRILLED INTO ROCK	N/A
14. TOTAL DEPTH OF HOLE	25.0 Borehole
15. DEPTH GROUNDWATER ENCOUNTERED	N/A
16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED	N/A
17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)	N/A

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
2	X		3

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	8270 8080 & 418.1	8015	8150	21. TOTAL CORE REC %
4	4	4	4	2	2	100

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
Cuttings Drummed	X	--	Hole grouted	Eric P. Kourtis

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
4290.0	0	Dirt, pebbles, clay balls, very little debris; 0-5'					
4289.0	1						
4288.0	2						
4287.0	3						
4286.0	4						
4285.0	5						

HTW DRILLING LOG

PROJECT	INSPECTOR	HOLE NO.
Cannon AFB Landfill 25 RI Clovis, N.M.	Eric P. Kovatch	3A
		SHEET 2 OF 4 SHEETS

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
		Clay balls, burnt charcoal, glass, no debris; 5-10'					
4284.0	6						
4283.0	7						
4282.0	8						
4281.0	9						
4280.0	10	Burnt layer at 10'; wire, metal, glass; chunks of brick at 15'; 10-15'					
4279.0	11						
4278.0	12						
4277.0	13						
4276.0	14						

HTW DRILLING LOG

PROJECT	INSPECTOR	HOLE NO.
Cannon AFB Landfill 25 RI Clovis, N.M.	Eric P. Kovatch	3A
		SHEET 3 OF 4 SHEETS

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
4275.0	15	Burnt soft fill material above red to white, loose caliche; 15-19'	0 ppm		3A-S 3A-95	Not recorded	3A-95 MRD Split 24" recovery Interval 15-17'
4274.0	16						
4273.0	17						
4272.0	18						
4271.0	19						
4270.0	20	Sand with silt and clay; loose chunks of caliche present; clay content higher than other samples; red to buff-white caliche nodules 10%; 19-25'	0 ppm	3A-I	3A-I	Not recorded	24" recovery Interval 20-22'
4269.0	21						
4268.0	22						
4267.0	23						

HTW DRILLING LOG

PROJECT	INSPECTOR	HOLE NO.
Cannon AFB Landfill 25 RI Clovis, N.M.	Eric P. Kovatch	3A
		SHEET 4 OF 4 SHEETS

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
4266.0	24		0 ppm	3A-06	3A-06	Not recorded	24" recovery Interval 24-26'
4265.0	25	Bottom of hole.					

HTW DRILLING LOG

HOLE NO.	3AA
SHEET	1 OF 4 SHEETS
1. COMPANY NAME	Radian Corporation
2. DRILLING CONTRACTOR	Southwest Engineer'g
3. PROJECT	Cannon AFB Landfill 25 RI
4. LOCATION	Clovis, N.M.
5. NAME OF DRILLER	Alex Sanchez
6. MANUFACTURER'S DESIGNATION OF DRILL	CME-55
7. SIZES & TYPES OF DRILLING & SAMPLING EQUIPMENT	4-1/4 Inch I.D. HSA; 3 Inch Stainless Steel Split Spoon Sampler; Augers, spoons, and drilling equipment decontaminated before use.
8. HOLE LOCATION	1235636.0 North 810794.2 East
9. SURFACE ELEVATION	4289.8'
10. DATE STARTED	10/4/92
11. DATE COMPLETED	10/4/92
12. OVERBURDEN THICKNESS	N/A
13. DEPTH DRILLED INTO ROCK	N/A
14. TOTAL DEPTH OF HOLE	25.0 Borehole
15. DEPTH GROUNDWATER ENCOUNTERED	N/A
16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED	N/A
17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)	N/A

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
2	X		3

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	8270 8080 & 418.1	8015	8150	21. TOTAL CORE REC %
4	4	4	4	2	2	100 %

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
Cuttings Drummed	X	–	Hole grouted	Eric P. Kovatt

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
4289.8	0	Dirt, pebbles, clay balls, very little debris; 0-5'					
4288.8	1						
4287.8	2						
4286.8	3						
4285.8	4						
4284.8	5						

HTW DRILLING LOG

PROJECT	INSPECTOR	HOLE NO.
Cannon AFB Landfill 25 RI Clovis, N.M.	Eric P. Kovatch	3AA
		SHEET 2 OF 4 SHEETS

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
		Clay balls, burnt charcoal material, glass, no significant debris yet; 5-10'					
4283.8	6						
4282.8	7						
4281.8	8						
4280.8	9						
4279.8	10	Burnt layer at 10'; wire, glass, pieces of metal, chunks of brick. At 15' red layer under black appes in soil; 10-15'					
4278.8	11						
4277.8	12						
4276.8	13						
4275.8	14						

HTW DRILLING LOG

PROJECT	INSPECTOR	HOLE NO.
Cannon AFB Landfill 25 RI Clovis, N.M.	Eric P. Kovatch	3AA
		SHEET 3 OF 4 SHEETS

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
4274.8	15						
		Native soil, burnt soft fill material on top of unconsolidated caliche, red to white; 15-19'	0 ppm		3A-S 3A-95	9/14/ 13/13	3A-95 is DUP 24" recovery Interval 15-17'
4273.8	16						
4272.8	17						
4271.8	18						
4270.8	19						
		Unconsolidated sand with silts & clays. Chunks of caliche are present. Higher clay content than other samples; buff white to red; 19-25'	0 ppm	3A-I	3A-I	10/5/ 6/8	24" recovery Interval 19-21'
4269.8	20						
4268.8	21						
4267.8	22						
4266.8	23						

HTW DRILLING LOG

PROJECT	INSPECTOR	HOLE NO.
Cannon AFB Landfill 25 RI Clovis, N.M.	Eric P. Kovatch	3AA
		SHEET 4 OF 4 SHEETS

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
		23'; same as above	0 ppm	3A-06	3A-06 CLP	29/25/ 19/18	24" recovery Interval 23-25'
4265.8	24						
4264.8	25	Bottom of hole.					

HTW DRILLING LOG

HOLE NO.	3AAA
SHEET 1 OF 3 SHEETS	
1. COMPANY NAME	Radian Corporation
2. DRILLING CONTRACTOR	Southwest Engineer'g
3. PROJECT	Cannon AFB Landfill 25 RI
4. LOCATION	Clovis, N.M.
5. NAME OF DRILLER	Alex Sanchez
6. MANUFACTURER'S DESIGNATION OF DRILL	CME-55
7. SIZES & TYPES OF DRILLING & SAMPLING EQUIPMENT	4-1/4 Inch I.D. HSA; 3 Inch Stainless Steel Split Spoon Sampler; Augers, spoons, and drilling equipment decontaminated before use.
8. HOLE LOCATION	1235638.5 North 810796.4 East
9. SURFACE ELEVATION	4289.7'
10. DATE STARTED	10/13/92
11. DATE COMPLETED	10/13/92
12. OVERBURDEN THICKNESS	N/A
15. DEPTH GROUNDWATER ENCOUNTERED	N/A
13. DEPTH DRILLED INTO ROCK	N/A
16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED	N/A
14. TOTAL DEPTH OF HOLE	20.0 Borehole
17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)	N/A

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
0	X		1

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	8270 8080 & 418.1	8015	8150	21. TOTAL CORE REC %
1	1	--	--	--	--	100

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
Cuttings Drummed	X	--	Hole grouted	Eric P. Krouse

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
4289.7	0	Dirt, pebbles, clay balls, very little debris; 0-5'					
4288.7	1						
4287.7	2						
4286.7	3						
4285.7	4						
4284.7	5						

MRK FORM JUN 89 55

PROJECT Cannon AFB Landfill 25 RI Clovis, N.M.

HOLE NO. 3AAA

HTW DRILLING LOG

PROJECT	INSPECTOR	HOLE NO.
Cannon AFB Landfill 25 RI Clovis, N.M.	Eric P. Kovatch	3AAA SHEET 2 OF 3 SHEETS

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
		Clay balls, burnt charcoal, glass, no debris; 5-10'					
4283.7	6						
4282.7	7						
4281.7	8						
4280.7	9						
4279.7	10	Fill material; soft, burnt layer at 10', wire, metal, glass, chunks of brick at 15'; 10-15'					
4278.7	11						
4277.7	12						
4276.7	13						
4275.7	14						

HTW DRILLING LOG

PROJECT	INSPECTOR	HOLE NO.
Cannon AFB Landfill 25 RI Clovis, N.M.	Eric P. Kovatch	3AAA SHEET 3 OF 3 SHEETS

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
4274.7	15	Burnt, soft, fill material, above red to white sand; 15-19'					
4273.7	16						
4272.7	17						
4271.7	18						
4270.7	19	Sand w/ silt & clay w/ caliche nodules, red to red-brown, higher clay content; 19-20'	0 ppm		3A-I	5/7/ 12/22	24" recovery Interval 19-21'
4269.7	20	Bottom of hole.					

HTW DRILLING LOG

HOLE NO.	3B
SHEET 1 OF 4 SHEETS	

1. COMPANY NAME: Radian Corporation	2. DRILLING CONTRACTOR: Southwest Engineer'g
3. PROJECT: Cannon AFB Landfill 25 RI	4. LOCATION: Clovis, N.M.
5. NAME OF DRILLER: Alex Sanchez	6. MANUFACTURER'S DESIGNATION OF DRILL: CME-55
7. SIZES & TYPES OF DRILLING & SAMPLING EQUIPMENT: 4-1/4 Inch I.D. HSA; 3 Inch Stainless Steel Split Spoon Sampler; Augers, spoons, and drilling equipment decontaminated before use.	8. HOLE LOCATION: 1235647.2 North 810785.4 East
	9. SURFACE ELEVATION: 4289.2'
	10. DATE STARTED: 10/3/92 — 11. DATE COMPLETED: 10/3/92
12. OVERBURDEN THICKNESS: N/A	15. DEPTH GROUNDWATER ENCOUNTERED: N/A
13. DEPTH DRILLED INTO ROCK: N/A	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: N/A
14. TOTAL DEPTH OF HOLE: 25.0 Borehole	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): N/A

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
2	X		3

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	8270 8080 & 418.1	8015	8150	21. TOTAL CORE REC %
3	4	4	4	2	2	100

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
Cuttings Drummed	X	--	Hole grouted	Eric P. Kovach

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
4289.2	0	Dirt, pebbles, some clay balls, cement-fill; 0-5'					
4288.2	1						
4287.2	2						
4286.2	3						
4285.2	4						
4284.2	5						

HTW DRILLING LOG

PROJECT	INSPECTOR	HOLE NO.
Cannon AFB Landfill 25 RI Clovis, N.M.	Eric P. Kovatch	3B
		SHEET 2 OF 4 SHEETS

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
		Clayey sand; 5-10'					
4283.2	6						
4282.2	7						
4281.2	8						
4280.2	9						
4279.2	10	Charred layer at 10-12' followed by burnt red clay (similar to soil beneath a basalt flow); 10-15'					
4278.2	11						
4277.2	12						
4276.2	13						
4275.2	14						

HTW DRILLING LOG

HOLE NO. 3B

PROJECT: Cannon AFB Landfill 25 RI, Clovis, N.M.

INSPECTOR: Eric P. Kovatch

SHEET 3 OF 4 SHEETS

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
4274.2	15	Native soil: silty sand with caliche material; 15-20'					
4273.2	16		0 ppm	3B-S	3B-S	9/12/ 11/10	24" recovery Interval 16-18'
4272.2	17						
4271.2	18						
4270.2	19						
4269.2	20	Clayey, silty sand; red with buff white caliche/sand interbeds; clay content in red sand higher than in other samples; 20-25'	0 ppm		3B-I	4/10/ 10/6	24" recovery Interval 20-22'
4268.2	21						
4267.2	22						
4266.2	23						

HTW DRILLING LOG

PROJECT	INSPECTOR	HOLE NO.
Cannon AFB Landfill 25 RI Clovis, N.M.	Eric P. Kovatch	3B
		SHEET 4 OF 4 SHEETS

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
		Alternating layers continue; insitu pebbles of well cemented sands	0 ppm	3B-06	3B-06	15/23/ 16/29	24" recovery Interval 23-25'
4265.2	24						
		Bottom of hole.					
4264.2	25						

HTW DRILLING LOG

PROJECT	INSPECTOR	HOLE NO.
Cannon AFB Landfill 25 RI Clovis, N.M.	Eric P. Kovatch	3C SHEET 2 OF 9 SHEETS

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
		Dark brown to brown sand; some clay; 2-7'					
4283.5	6						
4282.5	7	Pieces of coal and burnt material from 7 to 10'					
4281.5	8						
4280.5	9						
4279.5	10	10-11': cement; same fill material as above					
4278.5	11						
		Black ash material (sand, silt, clay, brick, gravel); 11.5-13'					
4277.5	12						
4276.5	13	Very fine to fine, red to buff red sand with silt; 13-27'	0 ppm		3C-01	7/8/ 8/11	MS/MSD 24" recovery Interval 13-15'
4275.5	14						

HTW DRILLING LOG

PROJECT	INSPECTOR	HOLE NO.
Cannon AFB Landfill 25 RI Clovis, N.M.	Eric P. Kovatch	3C
		SHEET 3 OF 9 SHEETS

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
4274.5	15						
4273.5	16						
4272.5	17						
4271.5	18						
4270.5	19	Small caliche nodules, 16-20' Caliche streaking and compact, friable, dry sand below 20'	0 ppm	3C-02	3C-02	8/3/4/8	24" recovery Interval 19-21'
4269.5	20						
4268.5	21						
4267.5	22						
4266.5	23						

HTW DRILLING LOG

PROJECT	INSPECTOR	HOLE NO.
Cannon AFB Landfill 25 RI Clovis, N.M.	Eric P. Kovatch	3C
		SHEET 4 OF 9 SHEETS

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
						10/11/ 14/15	
4265.5	24		0 ppm		3C-03		24" recovery Interval 24-26'
4264.5	25	Same as above					
4263.5	26						
4262.5	27	Clayey sand with thin caliche interbeds; 27-37'					
4261.5	28						
4260.5	29		0 ppm		3C-04 3C-95	10/25/ 45/45	3C-95 MRD Split 24" recovery Interval 29-31'
4259.5	30	Caliche nodules present below 30' (0.5-1" dia., 5-10%)					
4258.5	31						
4257.5	32						

HTW DRILLING LOG

PROJECT	INSPECTOR	HOLE NO.
Cannon AFB Landfill 25 RI Clovis, N.M.	Eric P. Kovatch	3C
		SHEET 5 OF 9 SHEETS

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
4256.5	33						
4255.5	34	Same as above	0 ppm		3C-05	45/100/ -/-	13" recovery Interval 34-35.5'
4254.5	35						
4253.5	36						
4252.5	37						
4251.5	38						
4250.5	39	Buff to red-buff, silty sand; caliche matrix & nodules present; compact; firm; friable; 37-44'	0 ppm		3C-06 3C-99	75/100/ -/-	3C-99 is DUP 16" recovery Interval 39-40.5'
4249.5	40						
4248.5	41						

HTW DRILLING LOG

PROJECT	INSPECTOR	HOLE NO.
Cannon AFB Landfill 25 RI Clovis, N.M.	Eric P. Kovatch	3C SHEET 6 OF 9 SHEETS

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
4247.5	42						
4246.5	43						
4245.5	44	Red sand; loose; very fine to fine sand; 44-48	0 ppm	3C-07	3C-07	11/17/ 12/12	24" recovery Interval 44-46'
4244.5	45						
4243.5	46						
4242.5	47						
4241.5	48	Well sorted sands;48-49'					
4240.5	49	Thin caliche/sandstone layers from 49-50', 60-61', and 69-70'	0 ppm		3C-08	45/75/ -/-	9" recovery Interval 49-50'
4239.5	50						

HTW DRILLING LOG

HOLE NO. 3C

PROJECT Cannon AFB Landfill 25 RI
Clovis, N.M.

INSPECTOR Eric P. Kovatch

SHEET 7 OF 9 SHEETS

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
4238.5	51						
4237.5	52						
4236.5	53						
4235.5	54	Same as at 44-48'	0 ppm		3C-09	Not recorded	Recovery not recorded assume 24" Interval 54-56'
4234.5	55						
4233.5	56						
4232.5	57						
4231.5	58						
4230.5	59						

HTW DRILLING LOG

HOLE NO. 3C

PROJECT Cannon AFB Landfill 25 RI
Clovis, N.M.

INSPECTOR Eric P. Kovatch

SHEET 8 OF 9 SHEETS

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
		Same as at 44-48'	0 ppm		3C-10	14/43/ 34/10	18" recovery Interval 59-60.5'
4229.5	60						
4228.5	61						
4227.5	62						
4226.5	63						
4225.5	64	Same as at 44-48'	0 ppm		3C-11	25/18/ 50/56	24" recovery Interval 64-66'
4224.5	65						
4223.5	66						
4222.5	67						
4221.5	68						

HTW DRILLING LOG

HOLE NO. 3C

PROJECT: Cannon AFB Landfill 25 RI, Clovis, N.M.

INSPECTOR: Eric P. Kovatch

SHEET 9 OF 9 SHEETS

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
						20/16/ 19/-	
4220.5	69	Same as at 44-48'	0 ppm		3C-12		20" recovery Interval 69-71'
4219.5	70						
4218.5	71	Same as at 44-48'	0 ppm		3C-13	25/22/ 21/12	24" recovery Interval 71-73'
4217.5	72						
4216.5	73	Bottom of hole.					

HTW DRILLING LOG

HOLE NO.	4A
SHEET	1 OF 2 SHEETS
1. COMPANY NAME	Radian Corporation
2. DRILLING CONTRACTOR	Southwest Engineer'g
3. PROJECT	Cannon AFB Landfill 25 RI
4. LOCATION	Clovis, N.M.
5. NAME OF DRILLER	Alex Sanchez
6. MANUFACTURER'S DESIGNATION OF DRILL	CME-55
7. SIZES & TYPES OF DRILLING & SAMPLING EQUIPMENT	4-1/4 Inch I.D. HSA; 3 Inch Stainless Steel Split Spoon Sampler; Augers, spoons, and drilling equipment decontaminated before use.
8. HOLE LOCATION	1235387.1 North 810816.6 East
9. SURFACE ELEVATION	4278.0'
10. DATE STARTED	10/6/92
11. DATE COMPLETED	10/6/92
12. OVERBURDEN THICKNESS	N/A
13. DEPTH DRILLED INTO ROCK	N/A
14. TOTAL DEPTH OF HOLE	10.0 Borehole
15. DEPTH GROUNDWATER ENCOUNTERED	N/A
16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED	N/A
17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)	N/A

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
2	X		2

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	8270 8080 & 418.1	8015	8150	21. TOTAL CORE REC %
4	4	4	4	1	1	100

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
Cuttings Drummed	X	--	Hole grouted	Eric P. Kroeth

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
4278.0	0	Red clayey sand; dry to moist; fine sands, well sorted; 0-3'	0 ppm		4A-S 4A-99		Surface sample 4A-99 is DUP
4277.0	1						
4276.0	2						
4275.0	3						
4274.0	4						
4273.0	5						

MRK FORM JUN 89 55

PROJECT Cannon AFB Landfill 25 RI
Clovis, N.M.

HOLE NO. 4A

HTW DRILLING LOG

PROJECT	INSPECTOR	HOLE NO.
Cannon AFB Landfill 25 RI Clovis, N.M.	Eric P. Kovatch	4A SHEET 2 OF 2 SHEETS

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
		Buff to buff-red, sandy silt; compact; friable; small caliche nodules (<1" dia.) present; 3-10'	0 ppm	4A-I	4A-I	10/15/ 16/12	24" recovery Interval 5-7'
4272.0	6						
4271.0	7						
4270.0	8	Same as above	0 ppm	4A-06	4A-06	21/19/ 19/12	24" recovery Interval 8-10'
4269.0	9						
4268.0	10	Bottom of hole.					

HTW DRILLING LOG

HOLE NO.	4AA
SHEET	1 OF 1 SHEETS
1. COMPANY NAME	Radian Corporation
2. DRILLING CONTRACTOR	Southwest Engineer'g
3. PROJECT	Cannon AFB Landfill 25 RI
4. LOCATION	Clovis, N.M.
5. NAME OF DRILLER	Alex Sanchez
6. MANUFACTURER'S DESIGNATION OF DRILL	CME-55
7. SIZES & TYPES OF DRILLING & SAMPLING EQUIPMENT	4-1/4 Inch I.D. HSA; 3 Inch Stainless Steel Split Spoon Sampler; Augers, spoons, and drilling equipment decontaminated before use.
8. HOLE LOCATION	1235386.4 North 810819.0 East
9. SURFACE ELEVATION	4277.7'
10. DATE STARTED	
11. DATE COMPLETED	
12. OVERBURDEN THICKNESS	N/A
13. DEPTH DRILLED INTO ROCK	N/A
14. TOTAL DEPTH OF HOLE	5.0 Borehole
15. DEPTH GROUNDWATER ENCOUNTERED	N/A
16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED	N/A
17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)	N/A

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
0	X		1

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	8270 8080 & 418.1	8015	8150	21. TOTAL CORE REC %
1	1	–	–	1	–	75

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
Cuttings Drummed	X	–	Hole grouted	Eric P. Kraft

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
4277.7	0	Red clayey sand; dry to moist, fine sands, well sorted; 0-3'					
4276.7	1						
4275.7	2						
4274.7	3	Sdy silt; rd-bf to bf, very fn snds, compact, firm, friable; 3-5'				17/29/ 29/-	
4273.7	4		0 ppm		4A-I		18" recovery Interval 4-5.5'
4272.7	5	Bottom of hole.					

MRK FORM JUN 89 55

PROJECT Cannon AFB Landfill 25 RI
Clovis, N.M.

HOLE NO. 4AA

HTW DRILLING LOG

HOLE NO.	4B
SHEET 1 OF 2 SHEETS	

1. COMPANY NAME	Radian Corporation
2. DRILLING CONTRACTOR	Southwest Engineer'g
3. PROJECT	Cannon AFB Landfill 25 RI
4. LOCATION	Clovis, N.M.
5. NAME OF DRILLER	Alex Sanchez
6. MANUFACTURER'S DESIGNATION OF DRILL	CME-55
7. SIZES & TYPES OF DRILLING & SAMPLING EQUIPMENT	4-1/4 Inch I.D. HSA; 3 Inch Stainless Steel Split Spoon Sampler; Augers, spoons, and drilling equipment decontaminated before use.
8. HOLE LOCATION	1235370.0 North 810807.4 East
9. SURFACE ELEVATION	4277.8'
10. DATE STARTED	10/3/92
11. DATE COMPLETED	10/3/92
12. OVERBURDEN THICKNESS	N/A
13. DEPTH DRILLED INTO ROCK	N/A
14. TOTAL DEPTH OF HOLE	10.0 Borehole
15. DEPTH GROUNDWATER ENCOUNTERED	N/A
16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED	N/A
17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)	N/A

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
2	X		2

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	8270 8080 & 418.1	8015	8150	21. TOTAL CORE REC %
3	4	4	4	2	2	100

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
Cuttings Drummed	X	–	Hole grouted	Eric P. Kowalski

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
4277.8	0	Red sand with organic detritus; fine; loose; dry; 0-5'	0 ppm	4B-S	4B-S		Surface sample
4276.8	1						
4275.8	2						
4274.8	3						
4273.8	4						
4272.8	5						

HTW DRILLING LOG

PROJECT	INSPECTOR	HOLE NO.
Cannon AFB Landfill 25 RI Clovis, N.M.	Eric P. Kovatch	4B SHEET 2 OF 2 SHEETS

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
		Buff to white, sand with silt; friable; compact with caliche chunks; moderately sorted; 5-10'	0 ppm		4B-I	18/18/ 15/13	24" recovery Interval 5-7'
4271.8	6						
4270.8	7						
4269.8	8	Same as above	0 ppm	4B-06	4B-06	18/18/ 20/17	24" recovery Interval 8-10'
4268.8	9						
4267.8	10	Bottom of hole.					

HTW DRILLING LOG

HOLE NO.	8A
SHEET	1 OF 2 SHEETS
1. COMPANY NAME	Radian Corporation
2. DRILLING CONTRACTOR	Southwest Engineer'g
3. PROJECT	Cannon AFB Landfill 25 RI
4. LOCATION	Clovis, N.M.
5. NAME OF DRILLER	Alex Sanchez
6. MANUFACTURER'S DESIGNATION OF DRILL	CME-55
7. SIZES & TYPES OF DRILLING & SAMPLING EQUIPMENT	4-1/4 Inch I.D. HSA; 3 Inch Stainless Steel Split Spoon Sampler; Augers, spoons, and drilling equipment decontaminated before use.
8. HOLE LOCATION	1234906.9 North 810963.3 East
9. SURFACE ELEVATION	4275.0'
10. DATE STARTED	10/5/92
11. DATE COMPLETED	10/5/92
12. OVERBURDEN THICKNESS	N/A
13. DEPTH DRILLED INTO ROCK	N/A
14. TOTAL DEPTH OF HOLE	10.0 Borehole
15. DEPTH GROUNDWATER ENCOUNTERED	N/A
16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED	N/A
17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)	N/A

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
2	X		2

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	8270 8080 & 418.1	8015	8150	21. TOTAL CORE REC %
3	3	3	3	1	1	100

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
Cuttings Drummed	X	–	Hole grouted	Eric P. Kenneth

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
4275.0	0	Red sand; very fine to fine; well sorted; small amount of clay; no debris; root at 3'; 0-4'	0 ppm		8A-S		Surface sample
4274.0	1						
4273.0	2						
4272.0	3						
4271.0	4						
4270.0	5						

HTW DRILLING LOG

PROJECT	INSPECTOR	HOLE NO.
Cannon AFB Landfill 25 RI Clovis, N.M.	Eric P. Kovatch	8A SHEET 2 OF 2 SHEETS

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
		White-red to buff red sand with silt; friable; compact; dry (powdery caliche/silt); 4-10'	0 ppm	8A-I	8A-I	12/13/ 18/13	24" recovery Interval 5-7'
4269.0	6						
4268.0	7						
4267.0	8	Same as above	0 ppm	8A-06	8A-06	10/14/ 20/15	24" recovery Interval 8-10'
4266.0	9						
4265.0	10	Bottom of hole.					

HTW DRILLING LOG

HOLE NO.	8AA
SHEET	1 OF 1 SHEETS
1. COMPANY NAME	Radian Corporation
2. DRILLING CONTRACTOR	Southwest Engineer'g
3. PROJECT	Cannon AFB Landfill 25 RI
4. LOCATION	Clovis, N.M.
5. NAME OF DRILLER	Alex Sanchez
6. MANUFACTURER'S DESIGNATION OF DRILL	CME-55
7. SIZES & TYPES OF DRILLING & SAMPLING EQUIPMENT	4-1/4 Inch I.D. HSA; 3 Inch Stainless Steel Split Spoon Sampler; Augers, spoons, and drilling equipment decontaminated before use.
8. HOLE LOCATION	1234903.7 North 810960.7 East
9. SURFACE ELEVATION	4274.9'
10. DATE STARTED	10/7/92
11. DATE COMPLETED	10/7/92
12. OVERBURDEN THICKNESS	N/A
13. DEPTH DRILLED INTO ROCK	N/A
14. TOTAL DEPTH OF HOLE	5.0 Borehole
15. DEPTH GROUNDWATER ENCOUNTERED	N/A
16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED	N/A
17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)	N/A

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
0	X		1

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	8270 8080 & 418.1	8015	8150	21. TOTAL CORE REC %
1	--	1	1	--	--	100

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
Cuttings Drummed	X	--	Hole grouted	Eric P. Kovatch

ELEV. a	DEPTH b	DESCRIPTION OF MATERIALS c	Field Screening Results d	Geotech Sample or Core Box No. e	Analytical Sample No. f	Blow Counts g	REMARKS h
4274.9	0	Red sand; very fine to fine sands, well sorted, small amount of clay, no debris, roots at 3'; 0-4'					
4273.9	1						
4272.9	2						
4271.9	3						
4270.9	4	White-red to buff-red sand w/ silt, friable, compact; 4-5'	0 ppm		8A-I	19/21/ 15/16	24" recovery Interval 4-6'
		Bottom of hole.					
4269.9	5						

PROJECT Cannon AFB Landfill 25 RI
Clovis, N.M.

HOLE NO. 8AA

MRK FORM JUN 89 55

APPENDIX B

LF-03 (SWMU 105) SPECIFIC REPORT INFORMATION

HAZARDOUS ASSESSMENT RATING FORM

NAME OF SITE: Site No. 3 - Landfill No. 3

LOCATION: Cannon AFB

DATE OF OPERATION OR OCCURRENCE: 1959-1967

OWNER/OPERATOR: Cannon AFB

COMMENTS/DESCRIPTION: Landfill No. 3

SITE RATED BY: D. Moccia, G. McIntyre

I. RECEPTORS

	Rating Factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
A.	Population within 1,000 feet of site	0	4	0	12
B.	Distance to nearest well	2	10	20	30
C.	Land use/zoning within 1 mile radius	1	3	3	9
D.	Distance to reservation boundary	3	6	18	18
E.	Critical environments within 1 mile radius of site	1	10	10	30
F.	Water quality of nearest surface-water body	0	6	0	18
G.	Ground-water use of uppermost aquifer	3	9	27	27
H.	Population served by surface-water supply within 3 miles downstream of site	0	6	0	18
I.	Population served by ground-water supply within 3 miles of site	3	6	18	18
			Subtotals	96	180

Receptors subscore (100 x factor score subtotal/maximum subtotal) 53

II. WASTE CHARACTERISTICS

A. Select the factor score based on the estimated quantity, the degree of hazard, and the confidence level of the information.

1. Waste quantity (S = small, M = medium, L = large) S
2. Confidence level (C = confirmed, S = suspected) C
3. Hazard rating (H = high, M = medium, L = low) H

Factor Subscore A (from 20 to 100 based on factor score matrix) 60

B. Apply persistence factor
Factor Subscore A x Persistence Factor = Subscore B

60 x 1.0 = 60

C. Apply physical state multiplier

Subscore B x Physical State Multiplier = Waste Characteristics Subscore

60 x 1.0 = 60

III. PATHWAYS

Rating Factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score

A. If there is evidence of migration of hazardous contaminants, assign maximum factor subscore of 100 points for direct evidence or 80 points for indirect evidence. If direct evidence exists then proceed to C. If no evidence or indirect evidence exists, proceed to B.

Subscore --

B. Rate the migration potential for three potential pathways: surface-water migration, flooding, and ground-water migration. Select the highest rating, and proceed to C.

1. Surface-water migration

Distance to nearest surface water	3	8	24	24
Net precipitation	0	6	0	18
Surface erosion	1	8	8	24
Surface permeability	1	6	6	18
Rainfall intensity	2	8	16	24
		Subtotals	54	108

Subscore (100 x factor score subtotal/maximum score subtotal) 50

2. Flooding	0	1	0	3
	Subscore (100 x factor score/3)			0

3. Ground-water migration

Depth to ground water	1	8	8	24
Net precipitation	0	6	0	18
Soil permeability	0	8	0	24
Subsurface flows	0	8	0	24
Direct access to ground water	NA	8	--	--
		Subtotals	8	90

Subscore (100 x factor score subtotal/maximum score subtotal) 9

C. Highest pathway subscore

Enter the highest subscore value from A, B-1, B-2, or B-3 above.

Pathways Subscore 50

IV. WASTE MANAGEMENT PRACTICES

A. Average the three subscores for receptors, waste characteristics, and pathways.

Receptors	53
Waste Characteristics	60
Pathways	50
Total 163 divided by 3 =	54.33
	Gross Total Score

B. Apply factor for waste containment from waste management practices

Gross Total Score x Waste Management Practices Factor = Final Score

54.33 x 1.0 = 54

105. **UNIT NAME:** Landfill No. 3

Unit Description: This unit is an unlined, inactive cut-and-fill landfill, long and narrow in dimension, and estimated to occupy about 9 acres. The unit is located in the Eastern Area of the Air Force Base. The distance to the boundary of the air force base is less than 100 feet, and the distance to the Playa Lake (SWMU No. 103) is 400 feet. The site is no longer active and appears as an open field covered with prairie grass (Ref. 6). Wastes were burned and buried in trenches the following day (Ref. 46). During the VSI, soil subsidence and numerous animal burrows were noted in the soil cover (Ref. 47). This unit was identified as Site No. 3 in the IRP Phase I study due to its proximity to the base boundary and to a disposal lake, the existence of base Well No. 5 in the vicinity and the known past disposal of hazardous wastes at this site (Ref. 6). From boring information, the site is covered by surficial loamy sand soil varying from 4 to 5 feet in thickness. Underlying the landfill material is a caliche subsoil ranging from soft, weakly consolidated, sparsely calcareous sand to extremely hard, completely indurated concrete. Texturally the caliche varies from massive and generally featureless from to laminated, honeycombed, and/or nodular varieties (Ref. 46).

The topography in the area of this unit is fairly flat with the exception of remnant trench depressions on the surface outlining areas of past excavation and subsequent backfilling. Generally drainage in the area is to the north toward Playa Lake (SWMU No. 103) (Ref. 46).

Date of Start-Up: Use of this unit began in 1959 (Ref. 6).

Date of Closure: Use of this unit ceased in 1967 (Ref. 6).

105. (Cont'd.) Landfill No. 3

Wastes Managed: The site received domestic and industrial solid waste, including waste oils and solvents, paints, paint strippers, paint thinners, pesticide containers, and empty cans and drums.

Release Controls: No release controls were noted during the VSI (Ref. 47).

Release History: During 1985, nine deep soil borings were placed within the landfill site to define the local hydrogeological setting and to evaluate the potential extent of contaminant migration. Results of the sampling are presented in Table 105 and Figure 105 following this page. No purgeable halocarbons or aromatic hydrocarbons were detected in soil borings. All metal concentrations fell within normal soil ranges except for Borehole 3E located in the northwest section of the landfill area which continued elevated levels of selenium and mercury.

105. UNIT NAME	Landfill No. 3 (Eastern Area of Base)
Soil/Groundwater:	The potential for release to soil is high due to the unlined nature of the unit and the results to date of soil testing. Potential release to the groundwater is lower. The caliche layers could possibly act as an acquitard and inhibit downward migration of hazardous constituents to the aquifer.
Surface Water:	The potential for release to surface water is low due to the presence of a soil cover.
Air:	The potential for release to air is low due to the presence of a soil cover.
Subsurface Gas:	The potential for generation of subsurface gas is moderate due to the nature of wastes disposed.
Suggested Further Actions:	Install groundwater monitoring wells and vadose zone monitoring to determine if contaminants have migrated from beneath the landfill.

6.0 RISK ASSESSMENT

The primary mission of CAFB to develop and maintain an F-111 Tactical Fighter Wing has resulted in operations dealing with toxic and hazardous materials. Hazardous wastes are stored on-site prior to off-site treatment, recycling, or disposal. The IRP was established in 1982 to evaluate waste disposal practices, to control migration of hazardous contaminants, and to control hazards that may result from these prior waste practices. Radian was contracted by the USACE in 1984 to perform a Phase II (Stage 1) field investigation. The investigation was conducted in 1985 and consisted of drilling nine borings at Landfill No. 3 and collecting samples from either the upper 12 feet or the lower 5 feet of the 60-foot borings. In 1986, Radian produced a report describing the findings and concluded that there was no evidence that past disposal practices at Landfill No. 3 have resulted in a threat to human health or the environment. Radian was requested to perform a second field investigation at Landfill No. 3 during 1992 to fill in the data gap for samples collected between 20 and 55 feet below the surface.

This section presents the risk assessment including receptor and pathway identification conducted in support of conclusions drawn by the RFI.

Section 6.1 presents a brief narrative description of Landfill No 3. Section 6.2 describes the process used to identify the chemicals of potential concern and presents those chemicals that are quantified for risk in this report. Section 6.3 presents an assessment of the exposure to these chemicals of potential concern, including a conceptual site model. A toxicity assessment of the chemicals of potential concern is presented in Section 6.4. Potential health risks are described in the risk characterization presented in Section 6.5. Section 6.6 presents a qualitative environmental evaluation. Section 6.7 presents conclusions of the baseline risk assessment.

6.1 Characterization of Exposure Setting

Landfill No. 3 is an inactive waste disposal site. The landfill is located on the east side of the base, south of the playa lake, and covers approximately 13.5 acres as shown in Figure 6-1. The landfill was operated from 1959 to 1967 during which time domestic solid wastes, waste oils, solvents, paints, paint thinners and strippers, pesticide containers, and various empty cans and drums were burned in trenches, and the ash and remaining debris were buried. The maximum excavated depth of the landfill during its operation was 20 feet. The inactive site currently appears as a rectangular open field covered by prairie grasses.

The topography at Landfill No. 3 is fairly flat and drainage in the area is generally to the north toward the playa lake. Landfill No. 3 is underlain by approximately 55 feet of caliche. The caliche may serve as a barrier between the landfill base and the underlying Ogallala aquifer. The potential for production of leachate to contaminate groundwater is low, because the amount of precipitation in the arid environment is not sufficient to saturate the vadose zone or recharge the Ogallala aquifer located 320 feet below ground level (BGL).

6.1.1 Population Demographics

CAFB had a resident population of approximately 3,800, including military personnel and their dependents in 1990. Currently, there are 1,841 housing units at CAFB. Base housing is located in the northwest quarter of the base and north of the base, west of New Mexico Highway 277. Base-related employment at CAFB includes approximately 4,900 positions (Woodward-Clyde, 1992). Clovis is located approximately seven miles to the east of the base. In 1990, the population of Clovis was 30,954 persons. Currently, the population potentially exposed to contaminants originating from Landfill No. 3 includes on-base residents and workers, off-base residents, and consumers of locally produced agricultural crops and beef and dairy products. Future on-base land

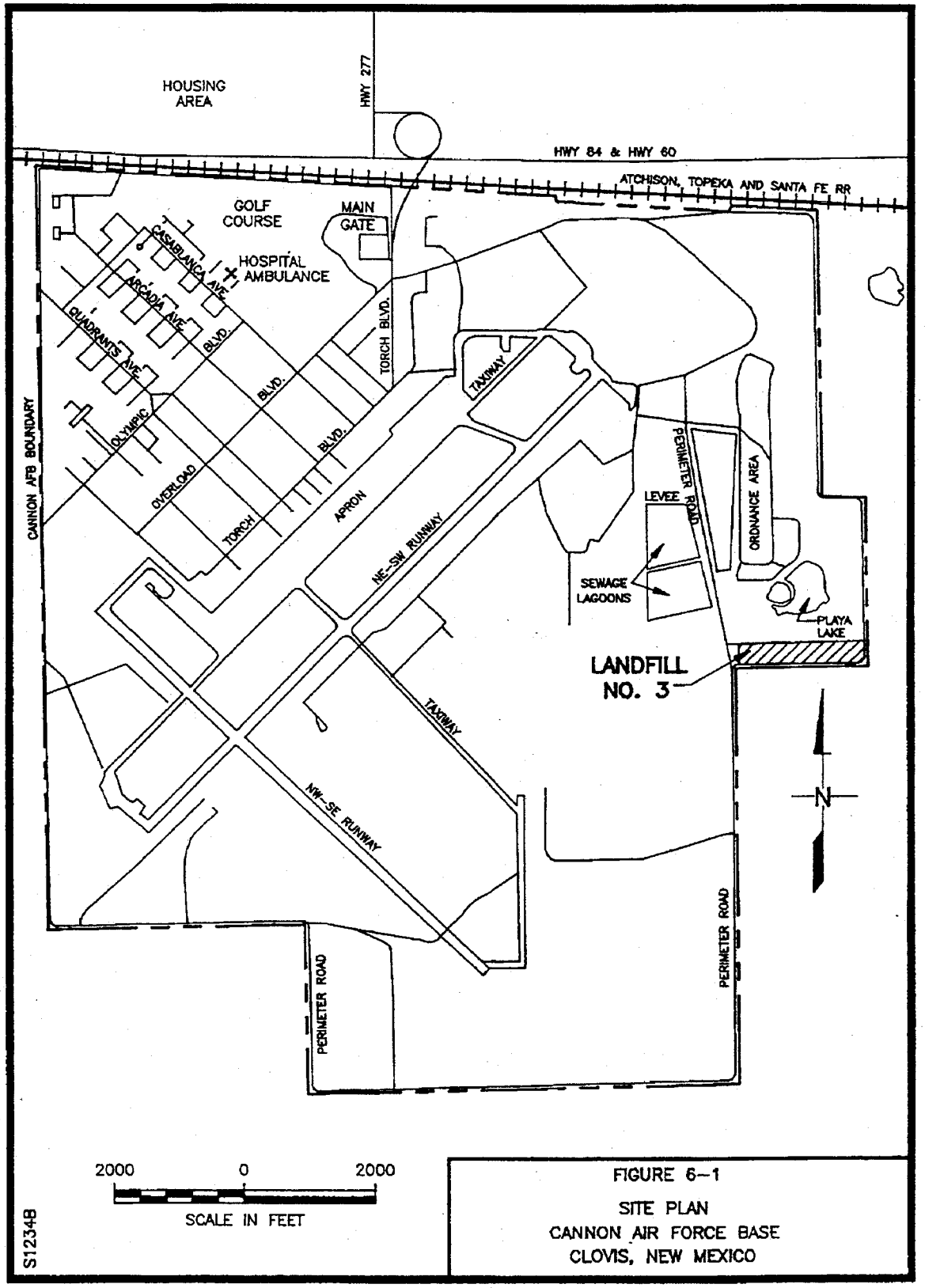


FIGURE 6-1
SITE PLAN
CANNON AIR FORCE BASE
CLOVIS, NEW MEXICO

use is not expected to change. The results of groundwater modeling indicate that future contamination of the groundwater is likely to be insignificant. Therefore, future scenarios were not evaluated in this risk assessment.

6.1.2 Current and Future Land Use

Land use is primarily agricultural within Curry County. As of 1992, total land area in the county is 897,000 acres with 837,200 acres designated as farm land. Lands surrounding CAFB are classified as irrigated farm land with principal crops including: corn, grain, sorghum, wheat, barley, oats, alfalfa, cotton and various vegetables. Cattle ranching and dairy farming occur throughout the county. Currently, no land use or zoning controls restrict the type and amount of construction in the proximity of CAFB. However, the U.S. Air Force has designated Air Installation Compatible Use Zones (AICUZs) around CAFB and provides recommendations for compatible uses in areas subject to noise and accident hazards (Woodward-Clyde, 1992).

CAFB is an active military installation and the home of the 27th Fighter Wing. There are no plans for closure of the facility in the foreseeable future. The use of CAFB as a military installation is highly specialized and land use cannot be significantly altered (i.e., converted to private, commercial, or residential use) without the approval of the U.S. Congress and the Secretary of Defense. For security and safety reasons, ingress and egress to the base is restricted (Landfill No. 3 is fenced on the South and East sides). Future land use is not expected to differ significantly from current land use practices.

6.1.3 Current Water Use

The lower portion of the Ogallala Formation is the primary regional aquifer in the vicinity of CAFB for potable and irrigation water. The dissolved solids in the aquifer range from 250 to 500 mg/L (Woodward-Clyde, 1992). The Ogallala aquifer

extends continuously from Wyoming and South Dakota into New Mexico and Texas. The Ogallala aquifer rests on Dockum Group redbeds, which serve as the basal confining layer in east central New Mexico. The aquifer has a southeasterly regional gradient of about 10 to 15 feet/mile. CAFB presently obtains water from a system of nine on-base water wells. All of the wells located on the base are completed in the Ogallala aquifer and range from 357 to 415 feet deep and have yields ranging from 50 to 820 gallons per minute (gpm). The wells incorporate multiple screens deriving water from interbedded sands of the Ogallala Formation (Radian, 1992).

The location and construction of all on-site wells and all off-site wells located within one mile of the landfill are presented in Section 2.3.2.

6.2 Identification of Chemicals of Potential Concern

Contaminants of potential concern for Landfill No. 3 were identified following guidance in Chapter 5 (Data Evaluation) of the *Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual (Part A)* (USEPA, 1989a). USEPA guidance stipulates the following nine steps to evaluate analytical data for a comprehensive risk assessment:

1. Gather all data available from the site investigation and sort by medium;
2. Evaluate the analytical methods used;
3. Evaluate the quality of data with respect to sample quantitation limits;
4. Evaluate the quality of data with respect to qualifiers and codes;
5. Evaluate the data with respect to blanks;
6. Evaluate tentatively identified compounds;

7. Compare potential site-related contamination with background;

8. Develop a set of data for use in the risk assessment; and

9. If appropriate, further limit the number of chemicals to be carried through the risk assessment.

This subsection summarizes the data review process and its results.

6.2.1 Step 1: Data Available from Site Investigation

Analytical data from two remedial investigations (RI) performed at Landfill No. 3 have been used in this risk assessment. The first RI was performed in February 1985 under the Installation Restoration Program (IRP) with results reported in September 1986 in a document titled *Installation Restoration Program, Phase II - Confirmation/Quantification Stage 1*. The second RI was performed between July and August 1992 and results are reported in this report which complies with both CERCLA and RCRA requirements.

During the 1986 RI, nine borings were drilled 60 feet deep. Soil samples were collected and analyzed for organic and inorganic constituents. All samples were collected between 0 and 15 feet BGL, which was within the landfill confines, and below the landfill between 55 and 60 feet BGL. Metal concentrations were within background levels, oil and grease detections were considered to be from natural sources, and no organic constituents were detected (Radian, 1986). Analytical methods used to determine metal concentrations in soil samples in 1986 were the same as the analytical methods performed in 1992. The 1986 organic analysis reported all concentrations as non-detects; however, the detection limit for the 1986 data was higher than for the 1992 data. Because the data were not comparable and QA/QC were not available, the 1986 organic analyses were not used in this risk assessment.

The purpose of the 1992 RFI was to supplement the 1986 RI data. In the 1992 investigation, 12 borings were drilled 62 feet deep and soil samples were collected from below the bottom of the landfill between 20 and 62 feet BGL. In addition, surface soil samples were collected at three boring locations. Both organic and inorganic data from the 1992 RFI were included in this risk assessment.

Appendix D presents analytical data used in the risk assessment.

6.2.2 Step 2: Analytical Methods

A detailed evaluation of the analytical methods used and a QA/QC evaluation of the data are presented under separate cover in the *Quality Control Summary Report* (QCSR) (Radian, October 1992). The QA/QC evaluation of the data was a factor in choosing the list of chemicals of potential concern. A summary of the QA/QC concerns and resolutions that pertain to this risk assessment are discussed below.

Total Recoverable Petroleum Hydrocarbons (TRPH)

- The low concentrations of TRPH (up to two times the detection limit of 25 mg/kg) in the field samples may be caused by laboratory contamination because TRPH was detected in the method blanks.

Metals

- Six antimony laboratory control samples (LCSs) and 40 matrix spike/matrix spike duplicate (MS/MSD) pairs were outside acceptance criteria. However, calcium may have interfered with the analysis. Low recovery for antimony across the landfill may not indicate a low bias. Ten percent of the samples were reanalyzed for antimony by graphite furnace atomic absorption (AA). Antimony was not detected in these samples at 0.50 mg/kg; however, matrix spikes associated with these samples indicate that the results may be

biased low by about 80% which could result in an actual detection limit of 2.5 mg/kg. Sample results corrected for this bias were not different from background.

- Ten percent of the samples were analyzed for thallium by graphite furnace AA to achieve a low detection limit. No thallium was detected in these samples at 0.4 mg/kg; however, matrix spikes associated with these samples indicate that the results may be biased low by about 30% which could result in an actual detection limit of 0.5 mg. Sample results corrected for this bias were not significantly different from background.

- At the time of sample analysis LCS recovery demonstrated that laboratory systems were in control. MS/MSD recoveries suggest that these soil matrices may bias selenium measurements low in field samples by about 30 %. Sample results corrected for this bias were not significantly different from background.

Method 8015 (Diesel and gasoline)

- A compound eluting within the diesel retention time, and reported as diesel, was detected in three of three equipment blanks and seven of nine method blanks. All reported blank results were within three times the reporting limit. The reporting limit ranged from 48 to 50 μg/L and 2,500 to 5,000 μg/kg. Although reported as diesel, the chromatographic pattern for the compound does not match the characteristic pattern for diesel. Since the chromatographic pattern for the field results match the pattern for the blank results, the contaminant listed as diesel in the report is probably due to laboratory contamination (See Appendix L for further detail). To provide the most conservative estimate of risk, the contaminant was included as diesel in this risk assessment.

Volatiles

- Tetrahydrofuran was tentatively identified in three method blanks analyzed during 20 through 23 July at concentrations of 5, 12, and 21 μg/kg. Tetrahydrofuran was tentatively identified in 19 field samples analyzed during 20 through 23 July at concentrations ranging from 5.5 to 32 μg/kg. Tetrahydrofuran is a solvent for

polyvinylchlorides (PVC), vinyl chloride copolymers and vinyldiene copolymers. Tetrahydrofuran has also been used in paints, varnishes, and oil and grease removers. These materials may have been used at CAFB. However, due to the presence of tetrahydrofuran in the method blanks, the detected tetrahydrofuran is probably due to laboratory contamination.

Method 8150 (Chlorinated Herbicides)

- Dinoseb control spikes and matrix spikes analyzed on 8 August 1992 had 0 to 18% recovery (8 of 12 spike samples had 0% recovery). Dinoseb appears to have not been extracted from these samples. Field samples from boring sites 3J, 3K, 3L, 3M, 3N, 3P, 3Q, and 3T were extracted with these spike samples. Therefore, dinoseb may have been present in the field samples from these eight sites and not extracted for analysis. Spike samples associated with samples from boring sites 3R, 3S, 3U, and 3V displayed acceptable recovery. Dinoseb was not detected in any field samples from the site. A review of historical records indicate dinoseb has not been used at the base. Dinoseb was not detected in duplicate split samples analyzed by USACE Missouri River Division for quality assurance.

6.2.3 Step 3: Quantitation Limits

RI data reports provide reporting limits (RLs) specific to each sample. The sample RLs take into account sample characteristics (e.g., matrix; dry weight), sample preparation (e.g., sample volume), and analytical dilutions. RLs represent the lower bound of reliable laboratory data using multiple instruments and are the equivalent of method quantitation limits (the minimum concentration that can be measured and reported). The RL reported for each sample is the lowest reliable concentration available and is used as the sample quantitation limit (QL) for this risk assessment. RLs are not available for tentatively identified compounds (TICs).

For the purposes of this risk assessment, a positive result included values at and below the RL. If a chemical was not detected in any sample, it was eliminated from

the list of chemicals of potential concern. If a chemical was detected in some but not all samples, one-half the RL was used as a proxy concentration for non-detects.

Analytical results associated with unusually high RLs were eliminated from the quantitative risk assessment. RLs were considered unusually high if the proxy concentration (one-half the RL) exceeded positive results for the same chemical in other samples.

Chemicals for which positive data are available in at least one sample are listed in Table 6-1. Data associated with the chemicals to which no uncertainties are attached concerning the assigned identity of the chemical or the significance of site-related concentrations compared to background concentrations (inorganic chemicals only), are appropriate for use in the quantitative risk assessment.

6.2.4 Step 4: Data Qualifiers or Codes

Data qualifiers or codes were presented with the analytical results so that uncertainties could be identified and evaluated. Data with qualifiers that indicate known identities, but uncertain concentrations, were used in this risk assessment. No constituents were eliminated as chemicals of potential concern based on laboratory qualifiers that indicated known identities, but uncertain concentrations. Laboratory qualifier codes associated with the 1992 analytical data are described below.

All Methods

B Blank subtraction was not performed for analytes detected in associated system, method, or field blank. Use of these data in the risk assessment is discussed in Section 6.2.5.

Table 6-1

Contaminants Positively Detected in Soil at Landfill No. 3, Cannon AFB, New Mexico

Analytes	Chemical of Potential Concern	Rationale for Assessment
ORGANICS		
Acetone	no	Less than 10 times the TB and EB
Acetonitrile	no	Tentatively Identified Compound
Aldrin	yes	Detected frequently
Benzene	no	Does not meet 5% frequency requirements
Bis(2-ethylhexyl)phthalate	yes	Detected frequently
Benzo(a)anthracene	no	Does not meet 5% frequency requirements
Benzo(a)pyrene	no	Does not meet 5% frequency requirements
Benzo(g,h,i)perylene	no	Does not meet 5% frequency requirements
Benzo(b)flouranthene	no	Does not meet 5% frequency requirements
Benzo(k)flouranthene	no	Does not meet 5% frequency requirements
beta-BHC	yes	Detected frequently
4-Chloro-3-methylphenol	no	Does not meet 5% frequency requirements
Chrysene	no	Does not meet 5% frequency requirements
Chloroform	no	Does not meet 5% frequency requirements
Chlorocyclohexene	no	Does not meet 5% frequency requirements
Cyclohexanediol	no	Tentatively Identified Compound
Cyclohexenone	no	Tentatively Identified Compound
Cyclohexenol	no	Tentatively Identified Compound
2-Chlorophenol	no	Does not meet 5% frequency requirements
Cyclohexane	no	Tentatively Identified Compound
delta-BHC	yes	Detected frequently
Di-n-octylphthalate	no	Does not meet 5% frequency requirements
Decanal	no	Tentatively Identified Compound
Dieldrin	no	Does not meet 5% frequency requirements

Table 6-1
(Continued)

Analytes	Chemical of Potential Concern	Rationale for Assessment
4,4'-DDD	yes	Detected frequently
4,4'-DDE	yes	Detected frequently
4,4'-DDT	yes	Detected frequently
1,1-Dichloroethene	no	Does not meet 5% frequency requirements
Diesel *	yes	Detected frequently
Ethylbenzene	no	Does not meet 5% frequency requirements
Ethylacetate	no	Tentatively Identified Compound
Ethyl ester acetic acid	no	Tentatively Identified Compound
Endosulfan II	no	Does not meet 5% frequency requirements
Endrin	no	Does not meet 5% frequency requirements
Endrin ketone	no	Does not meet 5% frequency requirements
Endrin aldehyde	no	Does not meet 5% frequency requirements
Flouranthene	no	Does not meet 5% frequency requirements
gamma-BHC	yes	Detected frequently
2-Hexanone	no	Does not meet 5% frequency requirements
Heptachlor epoxide	yes	Detected frequently
Heptane	no	Tentatively Identified Compound
Hydrocarbons	yes	Detected frequently
Hydroxymethyl pentanone	no	Tentatively Identified Compound
Heptachlor	no	Does not meet 5% frequency requirements
Indeno(1,2,3-cd)pyrene	no	Does not meet 5% frequency requirements
4-Methyl-2-pentanone	no	Less than 5 times the TB and MB
Methyl acetate	no	Tentatively Identified Compound
Methyl ethyl ketone	no	Less than 10 times the TB and MB
3-Methylpentane	no	Tentatively Identified Compound
Methoxychlor	no	Does not meet 5% frequency requirements

Table 6-1
(Continued)

Analytes	Chemical of Potential Concern	Rationale for Assessment
Methylene chloride	no	Less than 10 times the TB and MB
Methylcyclohexane	no	Tentatively Identified Compound
2,4-Pentanedione	no	Tentatively Identified Compound
2-Pentanol	no	Tentatively Identified Compound
PCB-1254	no	Does not meet 5% frequency requirements
PCB-1260	no	Does not meet 5% frequency requirements
Pinene	no	Tentatively Identified Compound
2-Propanol	no	Tentatively Identified Compound
Phenanthrene	no	Does not meet 5% frequency requirements
Pyrene	no	Does not meet 5% frequency requirements
2-Propylfuran	no	Tentatively Identified Compound
2,4,5-T	no	Does not meet 5% frequency requirements
Tetrahydrofuran	yes	Detected frequently
1,1,1-Trichloroethane	no	Does not meet 5% frequency requirements
Trichloropropene	yes	Detected frequently
Toluene	yes	Detected frequently
Trimethylcyclohexane	no	Tentatively Identified Compound
Unknown	no	Tentatively Identified Compound
Unknown 1	no	Tentatively Identified Compound
Unknown 2	no	Tentatively Identified Compound
Unknown 3	no	Tentatively Identified Compound
Unknown 4	no	Tentatively Identified Compound
Unknown 5	no	Tentatively Identified Compound
Unknown 6	no	Tentatively Identified Compound
Unknown 7	no	Tentatively Identified Compound
Unknown 8	no	Tentatively Identified Compound

Table 6-1
(Continued)

Analytes	Chemical of Potential Concern	Rationale for Assessment
Unknown 9	no	Tentatively Identified Compound
Unknown alchol	no	Tentatively Identified Compound
Unknown aldehyde	no	Tentatively Identified Compound
Unknown aldehyde 1	no	Tentatively Identified Compound
Unknown aldehyde 2	no	Tentatively Identified Compound
Unknown aldehyde 3	no	Tentatively Identified Compound
Unknown aldehyde 4	no	Tentatively Identified Compound
Unknown alkane	no	Tentatively Identified Compound
Unknown alkane 1	no	Tentatively Identified Compound
Unknown alkane 2	no	Tentatively Identified Compound
Unknown alkane 3	no	Tentatively Identified Compound
Unknown alkane 4	no	Tentatively Identified Compound
Unknown alkane 5	no	Tentatively Identified Compound
Unknown C6 alkane	no	Tentatively Identified Compound
Unknown C8 alkane	no	Tentatively Identified Compound
Unknown C9 alkane	no	Tentatively Identified Compound
Unknown C10 alkane	no	Tentatively Identified Compound
Unknown alkene	no	Tentatively Identified Compound
Unknown alkene 1	no	Tentatively Identified Compound
Unknown carboxylic acid	no	Tentatively Identified Compound
Unknown cyclic ether	no	Tentatively Identified Compound
Unknown cyclohexanone	no	Tentatively Identified Compound
Unknown cyclohexediol	no	Tentatively Identified Compound
Unknown cyclohexene	no	Tentatively Identified Compound
Unknown cyclohexene 1	no	Tentatively Identified Compound
Unknown cyclopentane	no	Tentatively Identified Compound

Table 6-1
(Continued)

Analytes	Chemical of Potential Concern	Rationale for Assessment
Unknown ester	no	Tentatively Identified Compound
Unknown heptane	no	Tentatively Identified Compound
Unknown hydrocarbon	no	Tentatively Identified Compound
Unknown hydrocarbon 1	no	Tentatively Identified Compound
Unknown hydrocarbon 2	no	Tentatively Identified Compound
Unknown hydrocarbon 3	no	Tentatively Identified Compound
Unknown hydrocarbon 4	no	Tentatively Identified Compound
Unknown hydrocarbon 5	no	Tentatively Identified Compound
Unknown hydrocarbon 6	no	Tentatively Identified Compound
Unknown hydrocarbon 7	no	Tentatively Identified Compound
Unknown hydrocarbon 8	no	Tentatively Identified Compound
Unknown hydrocarbon 9	no	Tentatively Identified Compound
Unknown hydrocarbon 10	no	Tentatively Identified Compound
Unknown hydrocarbon 11	no	Tentatively Identified Compound
Unknown hydrocarbon 12	no	Tentatively Identified Compound
Unknown hydrocarbon 13	no	Tentatively Identified Compound
Unknown hydrocarbon 14	no	Tentatively Identified Compound
Unknown hydrocarbon 15	no	Tentatively Identified Compound
Unknown hydrocarbon 16	no	Tentatively Identified Compound
Unknown hydrocarbon 17	no	Tentatively Identified Compound
Unknown hydrocarbon 18	no	Tentatively Identified Compound
Unknown ketone	no	Tentatively Identified Compound
Unknown ketone 1	no	Tentatively Identified Compound
Unknown phenol	no	Tentatively Identified Compound
Unknown terpene	no	Tentatively Identified Compound
Xylenes	no	Does not meet 5% frequency requirements

Table 6-1
(Continued)

Analytes	Chemical of Potential Concern	Rationale for Assessment
INORGANICS		
Aluminum	no	Within background concentrations
Antimony	no	Within background concentrations
Arsenic	no	Within background concentrations
Barium	no	Within background concentrations
Beryllium	no	Within background concentrations
Cadmium	no	Within background concentrations
Calcium	no	Necessary nutrient
Chromium	no	Within background concentrations
Cobalt	no	Within background concentrations
Copper	no	Within background concentrations
Iron	no	Necessary nutrient
Lead	no	Within background concentrations
Magnesium	no	Necessary nutrient
Manganese	no	Within background concentrations
Mercury	no	Within background concentrations
Nickel	no	Within background concentrations
Potassium	no	Necessary nutrient
Selenium	no	Within background concentrations
Sodium	no	Necessary nutrients
Vanadium	no	Within background concentrations
Zinc	no	Within background concentrations

TB - Trip Blank
EB - Equipment Blank
MB - Method Blank
* - Result did not match characteristic diesel pattern, but elutes in the assigned retention time window. To provide the most conservative estimate of risk, the contaminant was quantitated as diesel.

@ Reported result was less than five times the QL. The reported value was used in the risk assessment.

J The RL is higher than the reported result. The value was used in the risk assessment.

Methods 8080/8150

G Presence of analyte confirmed by second column analyses but concentration is uncertain.

Method 8015M (Diesel)

G Result does not match the characteristic diesel pattern, but elutes in the retention time window, so was quantitated as diesel (See Appendix L).

6.2.5 Step 5: Blanks

Field and laboratory blanks were included in the analytical program to provide an indication of the introduction of constituents into samples during collection or analysis. Positive results qualified by the presence of the analyte in associated blanks were evaluated according to USEPA guidance (USEPA, 1989a). Sample results for common laboratory contaminants (acetone, methyl ethyl ketone, methylene chloride, toluene, and the phthalate esters) were considered positive only if the concentration in a sample exceeded ten times the maximum amount detected in any associated blank. If the concentration of a common laboratory contaminant was less than or equal to ten times the blank concentration, the constituent was considered a laboratory contaminant; the blank concentration was considered to be the RL. Chemicals that are not common laboratory contaminants were evaluated in the same way, but five times the maximum blank-related concentration was used to distinguish between non-detects and contamination.

If all results for a chemical were considered to be non-detects or the number of results were below the allowable frequency of 5%, that chemical was eliminated from the list of chemicals of potential concern. Table 6-1 identifies those analytes eliminated for these reasons. Appendix D presents analytical data and blank data for the list of positive chemicals.

6.2.6 Step 6: Tentatively Identified Compounds (TICs)

The mass spectral analyses of samples for VOCs and SVOCs result in the identification and quantitation of compounds given in the Target Compound List (TCL). Sometimes the mass spectra indicate the presence of additional organic compounds that are not on the TCL. These spectra are compared to spectra in the mass spectral data library, and the compounds are tentatively identified based on similarities to the library spectra. These compounds are called tentatively identified compounds (TICs), and the assigned identity and quantitation of the compound is, in most cases, highly uncertain. If a compound cannot be identified by the mass spectral data library, then the compound is listed as an unknown compound or an unknown of a specific organic group (e.g., ester, carboxylic acid, alkane, etc.). TICs listed as unknowns cannot be identified. TICs that are assigned a tentative name could be quantified relative to compound. However, this would require recollecting a sample and obtaining a standard containing the TIC. This is not typically done. TICs may be intermediate breakdown or degradation products of larger organic compounds.

Compounds which are unknowns are not included in the list of concern since risk assessments can only be conducted on an identified or tentatively identified compound (a named TIC). The risk associated with a TIC is always uncertain since the actual identity and concentration of the compound is uncertain. SW-846 provides procedures to estimate the concentration of TICs. These estimates, however, are highly uncertain and could be orders of magnitude higher or lower than the actual concentration. When evaluating TIC data, it is important to note that the assigned

identity may be incorrect and that the quantitation is likely to be inaccurate. For the Landfill No. 3 evaluation, many TICs were eliminated from the risk assessment, as per EPA risk assessment guidance, after reviewing frequencies of detection and estimated concentration ranges. Tetrahydrofuran and trichloropropene(s) were TICs included in the risk assessment because there were many detects at relatively high estimated concentrations. However, cyclohexanone and ethyl ester acetic acid were not included in the risk assessment because although the compounds were detected many times, the data were associated with multiple cases of blank contamination.

6.2.7 Step 7: Background Concentration Comparison

Background concentrations for metals at CAFB were collected in December of 1991. Soil samples were taken from two on-base sites outside landfill areas. Analytical results from these two sites were compiled and a range for background concentrations was developed for each metal analyzed. Appendix F presents background information for metals, and Table 5-2 presents the upper tolerance limits (UTLs) calculated from these data. Averages of analytical results and the highest detected concentrations for metals collected at Landfill No. 3 in 1992 and 1985 were compared to these background ranges. Those metals for which the average and highest concentration reported were within background ranges included aluminum, arsenic, beryllium, cadmium, cobalt, manganese, mercury and vanadium. Antimony, barium, chromium, copper, lead, nickel, selenium, and zinc had averages within background ranges, but one or more values were reported above the upper limit of the background range. An evaluation of background and landfill concentrations for these metals indicated no differences between background and site samples.

The Wilcoxon rank sum test was performed on landfill and background results for barium, chromium, lead, and nickel. There were not enough detects in the background data for antimony, copper, selenium, and zinc to run a statistical analysis. For these metals, sample and background concentrations were compared using reporting

limit ranges, maximum concentrations detected, and averages that included half the reporting limit as a proxy result for all non-detects. These comparisons provided a valid method to determine if site samples differed from naturally occurring background concentrations. A discussion of statistical methods and background concentrations is presented in Appendix E.

6.2.8 Steps 8 and 9: Data Set Used in the Risk Assessment

USEPA guidance (USEPA, 1989a) stipulates that the list of chemicals of potential concern include chemicals that were:

1) Positively detected in at least one sample in a given medium, including: a) chemicals with no qualifiers attached (excluding samples with unusually high RLs); and b) Chemicals with qualifiers attached that indicate known identities but unknown concentrations (e.g.; J-qualified data);

2) Detected at levels significantly above levels of the same chemicals detected in associated blank samples; and

3) Detected at levels significantly above naturally occurring levels of the same chemicals.

Appendix D presents all analytical data used in this risk assessment for chemicals of potential concern.

USEPA's stated preference is to include all chemicals that meet the three criteria described above. However, evaluation of detection frequency is one procedure for reducing the number of chemicals included in the quantitative risk assessment. Chemicals that are infrequently detected may be artifacts in the data resulting from sampling, analytical, or other problems, and therefore may not be related to site operations or disposal practices. For this assessment, a chemical was eliminated from the list of chemicals of potential concern if:

1) It was detected infrequently (less than 5%) or not at all in samples;

2) It was not detected at high concentrations (greater than or equal to five times the sample RL) in any sample; and

3) There is no reason to believe that the chemical may be present.

Chemicals eliminated from the list of chemicals of potential concern by these criteria are identified in Table 6-1.

Several pesticides, their metabolites, and hydrocarbons were eliminated from the list of chemicals of concern and from the quantitative risk assessment based on detection frequency and detection below QLs. Chemicals that fall into this category are listed below:

- Benzene ;
- Benzo(a)anthracene;
- Benzo(a)pyrene;
- Benzo(g,h,i)perylene;
- Benzo(b)fluoranthene;
- Benzo(k)fluoranthene;
- Chrysene;
- Dieldrin;
- Endosulfan II;
- Endrin;
- Endrin aldehyde;
- Endrin ketone;
- Fluoranthene;
- Heptachlor;
- Indeno(1,2,3-cd)pyrene;
- Methoxychlor;
- Phenanthrene;
- Pyrene; and
- 2,4,5-trichlorophenol.

However, these chemicals may have historical importance because pesticide containers were burned in trenches and the remaining debris and ash were buried during the operation of Landfill No. 3. A qualitative discussion of the potential impact of these chemicals on the risk assessment is presented in Sections 6.5.7. The uncertainties associated with deleting these chemicals from the quantitative risk assessment are addressed in Section 6.5.8. This approach was also taken for di-n-octylphthalate, 1,1-dichloroethene, ethylbenzene, 2-hexanone, and polychlorinated biphenyls (PCBs) because these chemicals could be associated with wastes previously deposited at the site.

6.2.9 Data Limitations/Data Gaps

During this investigation only soil samples were collected and analyzed, no groundwater and air samples were taken. This limits the assessment of chemicals of concern to contaminants found in the soil on or beneath Landfill No. 3. Because only three surface soil samples were collected, the surface data was not as inclusive as subsurface data which included 12 borings and 8 to 12 samples per boring. Limitations of analytical methods in detection of chemicals below the instrument detection limit, use of estimated values below the reporting limit, and values that were close to the reporting limit further limit the data used in this risk assessment. Limitations of analytical methods tend to result in underestimation of risks. Use of estimated values tend to result in overestimation of concentrations and the use of values close to the reporting limit could either over- or under-estimate contaminant concentrations. The elimination of chemicals from the list of chemicals of concern may have historical importance and, therefore, the quantitative risk assessment could potentially result in an underestimation of risk. However, the potential risks associated with these chemicals were assessed qualitatively and are considered to be insignificant (refer to Section 6.5.7).

6.3 Exposure Assessment

Exposure assessment is the determination or estimation (qualitative or quantitative) of the magnitude, frequency, duration, and route of human exposure to the chemicals of potential concern that are present at, or may have migrated from a site. The following subsections discuss the conceptual site model, including the source of contamination, potential migration pathways, and potentially exposed populations. A discussion of exposure pathways, exposure scenarios, quantification of exposure, and uncertainties associated with the exposure assessment are also included. Sections 2 and 3 provide detailed descriptions of the physical characteristics of the base and the surrounding area. A brief description of the exposure setting is presented in Section 6.1.

6.3.1 Exposure Assessment Methodology

Human exposure to the chemicals of potential concern were evaluated by performing the following tasks:

1. Identification of releases into various media;
2. Determination of fate and transport in release media;
3. Evaluation of exposure points and exposure routes;
4. Determination of exposure scenarios;
5. Quantification of estimated exposure concentrations; and
6. Estimation of chemical intakes.

Air impacts were estimated using predictive equations recommended by the USEPA. Emission rates of chemical compounds derived from volatilization and wind entrainment of contaminated dust from Landfill No. 3 were estimated and input into the USEPA-approved Industrial Source Complex Short-Term (ISCST2) dispersion model to estimate worst-case maximum short-term (hourly) and average annual chemical concentrations in the atmosphere at the periphery of the landfill. The predicted

concentrations were then used to estimate health risks to the exposed populations. The methodology used to calculate air emissions is presented in Appendix G-1. Groundwater flow and contaminant transport were modeled using analytical solutions for estimating the time of travel of soil moisture through unsaturated soil from the bottom of the landfill to the Ogallala aquifer, assuming steady-state conditions in the soil column. Appendix G-2 contains a discussion of the methodology used to calculate groundwater concentrations.

6.3.2 Conceptual Site Model

Based on available information, a conceptual site model was developed to provide an understanding of the sources of contaminants, potential migration pathways of contaminants, and potential receptors considering geologic and hydrologic information. The conceptual site model is presented schematically in Figure 6-2 and provides the basis for the human health and ecological risk assessment. Chemicals of potential concern identified for use in this risk assessment include:

- Aldrin;
- beta-BHC;
- delta-BHC;
- gamma-BHC (lindane);
- Bis(2-ethylhexyl)phthalate;
- 4,4'-DDD;
- 4,4'-DDE;
- 4,4'-DDT;
- Diesel Fuel;
- Heptachlor Epoxide;
- Hydrocarbons;
- Tetrahydrofuran;
- Toluene; and
- Trichloropropene.

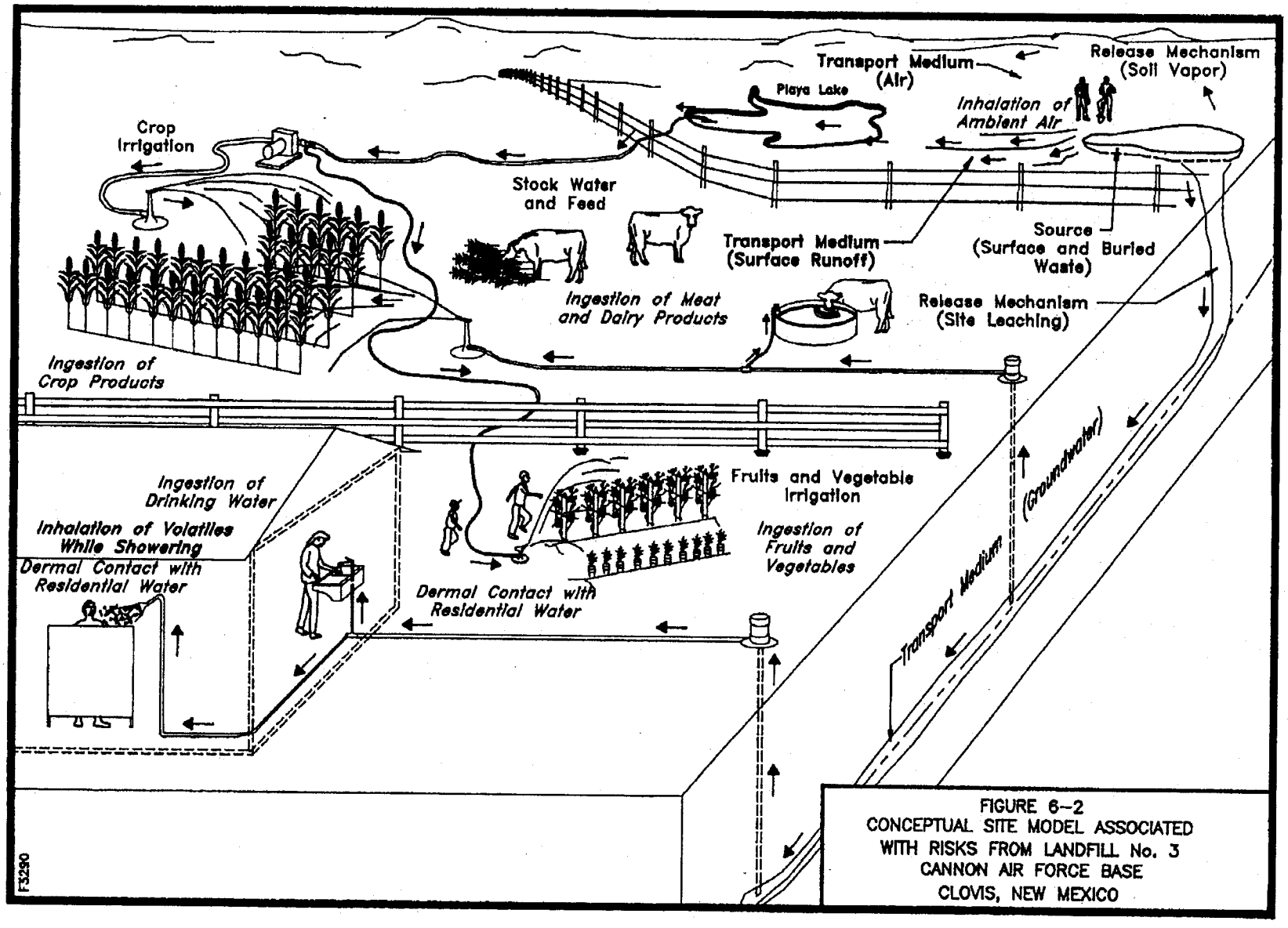


FIGURE 6–2
CONCEPTUAL SITE MODEL ASSOCIATED
WITH RISKS FROM LANDFILL No. 3
CANNON AIR FORCE BASE
CLOVIS, NEW MEXICO

Potentially sensitive members of the population who may be exposed to chemicals originating from Landfill No. 3 include: children, the elderly, and those with preexisting conditions that may be aggravated by exposure to chemicals of potential concern. Locations where sensitive members of the population might reside include hospitals, retirement/nursing homes, schools, nurseries, and day care centers. Medical services for CAFB personnel and their dependents are provided by two general hospitals in the surrounding communities and by the base hospital. The High Plains Hospital is located several miles east of the base, toward Clovis, New Mexico. On-base support facilities, including schools and day care centers are located primarily northwest of the airfield area upgradient and generally upwind of Landfill No. 3. Nearby off-base facilities include a dairy, a barber shop, and a convenience store (Allsups); however, these facilities represent the general population and not the sensitive subpopulations.

6.3.3 Identification of Exposure Pathways

An exposure pathway describes the course a chemical or physical agent takes from the source to the exposed individual. A complete pathway is generally comprised of the following: 1) a source and mechanism of chemical release; 2) a retention or transport medium; 3) a point of potential human contact with the contaminated medium; and 4) an exposure route (i.e., ingestion, inhalation, dermal contact). The following subsections contain information about contaminant sources and receiving media at the site, the fate and transport of chemicals of concern, and exposure points and routes.

6.3.3.1 Sources and Receiving Media

For the purposes of this risk assessment, the source of contamination is represented by the wastes that have been applied to Landfill No. 3 in the past. No further waste application to Landfill No. 3 is projected in the future. These wastes are the sole source of soil, and potential groundwater, surface water, and air contamination

from the landfill. The potential releases to media from contaminants originating at Landfill No. 3 addressed in this risk assessment are those to (1) surface water (playa lake) via runoff from the landfill; and (2) ambient air. Releases to the groundwater have not been included because the time required for the constituents to travel to the groundwater and the assumed attenuation factor indicate that the concentrations of chemicals in the groundwater will be insignificant.

Results of chemical analyses of soil samples collected during the RI indicated that contaminants are present in the soil beneath Landfill No. 3 to depths of 62 feet BGL. Sections 5.1 through 5.3 summarize the analytical data characterizing contamination at the site. Chemicals detected in soil samples that are above reporting limits and the selection of contaminants of potential concern are discussed in Section 6.2. Secondary sources of contamination considered in this risk assessment are surface water and ambient air contaminated with the chemicals of potential concern.

The original release sources (e.g., buried waste and contaminated soil) were considered only indirectly in this risk assessment. Therefore, the results of the risk assessment were based solely on modeled contaminant concentrations.

Releases to Air--To evaluate potential releases to air at Landfill No. 3, volatilization of organic compounds from surface soil contamination, volatilization of organic compounds from buried wastes, and wind entrainment of contaminated dust were considered.

Volatile compounds entrained in the soil may volatilize and eventually disperse into the atmosphere above the ground surface by simple diffusion. The only chemical detected at the site with the potential to volatilize was toluene. No purgeable halocarbons or aromatic compounds were detected in the surficial soil (ranging between 0 to 11 feet) covering the landfill (Radian, 1986). There is a potential for volatile chemicals to migrate through the soil pores and eventually volatilize to the atmosphere.

In order to assume a worst-case scenario that would further support a no-action decision, release of volatile organics from surface and subsurface soils is considered to occur for purposes of this risk assessment. Metals were also detected in surficial soils, but concentrations were not significantly different from background soil concentrations (Radian, 1986). Volatilization of metals is not considered a dominant environmental fate mechanism.

Non-volatile chemicals and metals can potentially enter the atmosphere as a result of wind entrainment of contaminated surface soil. Waste must be present in surface soil and not covered by impervious materials or vegetation to be subject to fugitive dust generation. The generation of fugitive emissions in the form of dust/particulates is effectively prevented, because Landfill No. 3 is currently vegetated. However, to assume a worst-case scenario further supporting a no-action decision, fugitive dust generation was evaluated in this risk assessment.

Organic materials in the waste are subject to microbial decomposition and will generate a variety of gases that may vent to the atmosphere. Low soil moisture content inhibits waste decomposition resulting in a decreased rate of gas formation. Negligible amounts of organic materials were detected at the site; therefore, soil gases generated at Landfill No. 3 were considered to be negligible and are not evaluated for human health risks.

The playa lake north of Landfill No. 3 is recharged primarily by treated effluent from the sewage lagoon and by storm water runoff from the site. Without recharge, playa lakes persist for only a few days or weeks. Water is lost from playa lakes by infiltration to the soil and by evaporation (Radian, 1986). Volatilization of organic compounds from the surface water is possible; however, volatilization of organics from the playa lake is not expected to be significant because contamination of the playa lake with volatile organic compounds is predicted to be minimal. Only toluene has been detected on or near the surface of the landfill. Surface water modeling indicates that the

concentration of toluene should be quite low in the playa lake. Therefore, this scenario was not evaluated in the risk assessment.

Releases to Groundwater--A secondary release mechanism from the soil includes the potential for leaching of chemicals into groundwater. Leachate is composed of liquid present in the waste, liquid entering the unit from precipitation, and chemical compounds that are dissolved or suspended in this liquid. Many factors affect the potential for contaminant migration including: 1) chemical characteristics; 2) waste application practices; and 3) soil characteristics. The maximum excavated depth of the landfill during operation was 20 feet. The landfill is underlain by approximately 55 feet of caliche which may serve as a barrier between the landfill and the underlying Ogallala aquifer. However, additional soil samples collected during the 1992 RI indicated that contaminants have migrated beyond the maximal excavation depth of the landfill and suggests that contaminants may potentially leach to the underlying Ogallala aquifer.

A series of mathematical models were used to estimate the transport and fate of groundwater contaminants migrating from Landfill No. 3 at CAFB. The objective of the analysis was to provide conservative estimates of the maximum concentrations of chemicals of potential concern that would be expected at targeted receptor sites (refer to Appendix G-2 for a detailed discussion of calculations). Fate and transport data were obtained from the Soil Transport and Fate Database, Version 2.0. (Sims et al., 1991).

Migration of soil water and contaminants in the vadose zone beneath Landfill No. 3 was analyzed using an analytical solution for steady state, unsaturated flow. Groundwater flow and contaminant transport in the unconfined aquifer were analyzed with a separate analytical model.

Hydraulically active receptors are defined as those that impact the nature of the groundwater flow field and consequently the contaminant concentrations at the receptor. A hypothetical agricultural well placed at the southeast corner of Landfill No.

3 for modeling purposes, as well as the nine potable water wells located on-base fall into this category. Hydraulically, the wells draw groundwater towards them by creating a cone of depression that does not exist naturally. The hypothetical well was positioned to capture groundwater and contaminants migrating from the site.

Initially, the time of travel of unsaturated soil moisture from the bottom of the landfill to the water table was estimated. The time of travel was estimated to be 173 years. The fate and movement of organic materials in subsurface environments are governed largely by sorption and biodegradation. Sorption affects the rate of travel of organic material, relative to that of water through subsurface systems (McCarty et al., 1981). Solutes that may be sorbed/desorbed on soil, such as metals and pesticides, are expected to migrate at a slower apparent velocity than the soil moisture and will require a longer period of time to reach the water table.

The ultimate fate of organic compounds in the subsurface system depends upon biodegradative processes. The attenuation of organic species from biological, chemical, and physical degradation was estimated assuming a first-order decay mechanism.

Results from groundwater modeling for organic contaminants indicate that even the concentration of the most persistent species for which data were available (4,4'-DDE) can be expected to be attenuated by a factor of more than 10^{15}. Less persistent species can be expected to be attenuated to a greater extent. Even though degradation data were unavailable for several species, it is reasonable to assume that, similar to DDE, all contaminants of concern will be reduced to near zero concentrations by the time they migrate to the water table. Therefore, it was assumed that significant contamination of the water table with contaminants originating at Landfill No. 3 will not occur in the future and this scenario was not evaluated in the risk assessment. Modeling results are presented in Appendix G-2.

Releases to Surface Water--One of the most prominent geomorphic features in the vicinity of CAFB are blowouts. Blowouts are broad shallow depressions that form as a result of soil erosion by wind. Runoff collects in blowouts to form ephemeral playa lakes during periods of rainfall. Generally, drainage in the area of Landfill No. 3 is to the north toward a nearby playa lake. Therefore, direct release of surface contaminants detected at the landfill to surface water may occur at the site. Toluene was the only chemical of concern detected in surficial soils. Metals were also detected in surficial soils, but were not significantly different from background concentrations detected in soils at CAFB. Results from surface water modeling indicated that toluene associated with runoff from the site may potentially contaminate the playa lake located just north of the landfill. Modeling results are presented in Appendix G-2.

6.3.3.2 Fate and Transport in Release Media

Several of the contaminants detected at Landfill No. 3 may be transported from one medium to another by processes of solubilization, adsorption, bioaccumulation, or volatilization. Primary transport media for chemical substances in the environment include the air, groundwater, surface water, and soil. The potentially significant contaminant mechanisms considered for this risk assessment include:

1. Direct release of contaminants in soil to surface water;
2. Emissions to ambient air; and
3. Uptake by plants and animals.

Discharge to and Transport in Surface Water--Generally, drainage in the area is to the north, toward the playa lake, although no defined drainage ways exist within the landfill boundary (Radian, 1986). Therefore, direct release of contaminants detected at the surface of the landfill to the playa lake is possible. Toluene is readily leached from soils with low organic content and is moderately soluble in water.

However, the majority of the contaminants detected at Landfill No. 3 were pesticides which generally are only slightly soluble in water. The transport of these compounds, as well as bis(2-ethylhexyl)phthalate, in runoff is primarily caused by transport of particulates to which these compounds are bound. Because these compounds are bound strongly to soil, they are likely to be subject to sedimentation.

Release to and Transport in Ambient Air--Organic chemicals in the surficial soils of Landfill No. 3 have the potential to volatilize to the atmosphere. Ambient air monitoring has not been conducted at the landfill to determine the contaminants and/or contaminant concentrations in the air. Several of the contaminants detected in soils at Landfill No. 3 have the potential for volatilization from the soil. Non-volatile organics and metals can enter the atmosphere via wind entrainment of contaminated surface soil. Small particles that carry pesticides or their degradation products may be distributed through the air. Potential contamination of the air at the perimeter of Landfill No. 3 was estimated using conservative assumptions such as: 1) no plume rise; 2) concentration over a reduced area of the landfill; and 3) uniform distribution of subsurface contamination.

Uptake by Plants--Land use in the area surrounding CAFB is primarily agricultural. As of 1992, Curry County has a total land area of 897,000 acres with 837,200 acres designated as farm land (Woodward-Clyde, 1992). During the site visit, agricultural fields were noted on the east and south perimeters of Landfill No. 3. The crops grown on the fields vary depending on the season and market prices. The principal crops grown in Curry County include corn, grain, sorghum, wheat, barley, oats, alfalfa, cotton, and various vegetables. Wheat, used for human consumption, is the primary crop grown on the fields adjacent to Landfill No. 3. However, alfalfa, corn and milo are also grown on these fields and are used as cattle feed (Base Natural Resources Environmental Group, 1992). Agricultural crops are subject to accumulation of contaminants via root uptake of any contaminants present in the soil or water used for irrigation. The effluent to the playa lake located just north of Landfill No. 3 is used by a

local farmer for irrigation purposes. Therefore, plants may be potentially exposed to contaminants originating from Landfill No. 3, and it is important to examine the possible accumulation of contaminants in crops. The majority of the chemicals detected at the site are lipophilic and some have long half lives. As a result, they tend to bioaccumulate in the food chain. However, the groundwater modeling indicates these chemicals are not predicted to enter the groundwater in significant quantities. Toluene was the only chemical predicted to migrate to the playa lake (via runoff), which is used by a local farmer for irrigation purposes. Literature has shown that toluene can be detected in aquatic biota, but the concentration of toluene in other foodstuffs has not been thoroughly investigated (ATSDR Toxicological Profile for Toluene, 1989). Although the USEPA considers that levels of toluene in food are not likely to be significant, uptake of toluene into plants was evaluated because of its moderate lipophilicity and potential for bioaccumulation (ATSDR, Toxicological Profile for Toluene, 1989).

Uptake by Livestock--There is a dairy located within two miles (northeast) of Landfill No. 3. Cattle were seen at the perimeter of the Base, northeast of Landfill No. 3 during the site visit. Cattle ranching occurs throughout Curry County, and the land surrounding CAFB consists of irrigated crops and pasture land used in the cattle ranching and dairy business (Radian, 1986). Livestock, including beef and dairy cattle, are subject to accumulation of contaminants originating from the Base via ingestion of contaminants in feed. Several crops that are typically used for livestock feed are grown nearby CAFB. As cattle ingest contaminated feed, the contaminants can be absorbed by the gastrointestinal tract. The more lipophilic compounds may accumulate in the milk and edible meat following gastrointestinal absorption, providing a mechanism for human exposure. Locally raised beef and dairy cattle are sustained primarily (approximately 80%) on locally grown agricultural products (New Mexico Agricultural Extension Office, 1992). To evaluate a worst-case scenario, 100% of the feed for beef cattle and dairy cows was assumed to come from crops grown at the perimeter of Landfill No. 3. Although this worst-case scenario is conservative, it provides additional justification for a no-action decision.

6.3.3.3 Exposure Points and Exposure Routes

Normally, potential pathways are segregated into those that currently exist and those that may exist in the future. Current potential exposure pathways, which are the subject of this section, are those that may exist as a result of the current extent of contamination, combined with existing land use and activity patterns. Human exposure to contaminants originating at Landfill No. 3 could potentially occur on-site and in areas adjacent to the landfill. However, with the exception of metals and toluene detected in surface soils, contamination at the site is subsurface. Access to the site is limited and currently there are no ongoing invasive activities occurring, so direct human contact is highly unlikely. Use of potentially contaminated surface water from the playa lake and groundwater for irrigation of agricultural crops consumed by humans and for feed crops consumed by livestock may serve as indirect pathways of human exposure to contaminants from the landfill. Volatilization of volatile chemicals and fugitive dust generation at the site were also assessed as potential sources of exposure to contaminants originating at Landfill No. 3. Potential site releases are expected to be low-level and relatively continuous in nature. Short-term high level releases are unlikely to occur because the site has been closed since 1967.

Potential receptors considered in this risk assessment are: 1) animal and plant receptors; 2) people who consume commercially produced agricultural crops grown at the perimeter of the site; 3) people who consume meat and/or milk from livestock fed on crops grown at the site perimeter; and 4) Base personnel and on-site workers exposed to fugitive dust and volatilization of chemicals at the site. Future land uses in the vicinity of the base will not significantly alter the exposure points and exposure routes. The size of the potentially exposed populations could change in the future; however, it would likely increase for some exposure routes and decrease for others.

Potential receptors described in 1 through 3 above may be overly conservative because toluene uptake by plants is considered to be insignificant by the USEPA (ASTDR, Toxicological Profile for Toluene, 1989). However, the data on which the USEPA based this conclusion are incomplete. Toluene is moderately lipophilic, which usually increases the potential for uptake by root systems. Therefore, in order to evaluate a worst-case scenario, uptake of toluene by plant systems followed by consumption of these plants by both humans and livestock were evaluated in this risk assessment.

6.3.4 Exposure Pathways

This section of the risk assessment depicts potential pathways for contaminants originating at Landfill No. 3 to move from the point of release to the point of human exposure. Potential exposure pathways associated with identified receptors were evaluated to determine whether they were complete and significant. The route can include media other than the source and the receptor must engage in activity that will cause the exposure to occur. Figure 6-3 depicts potential pathways for contaminants originating at Landfill No. 3 to move from the point of release to points of human exposure. Pathways that are not complete have been crossed out and numbered to correspond with explanatory footnotes. Pathways that are completed but judged insignificant are indicated with dashed lines. Potentially significant pathways that exist at the site are indicated with bold, solid lines and include:

1) Ingestion of agricultural crops: migration to surface water; irrigation of crops with surface water; uptake by plants; ingestion of plants by humans.

2) Ingestion of milk and meat: consumption of contaminated crops by cattle; transfer of contaminants to beef or milk; ingestion of beef or milk by humans.

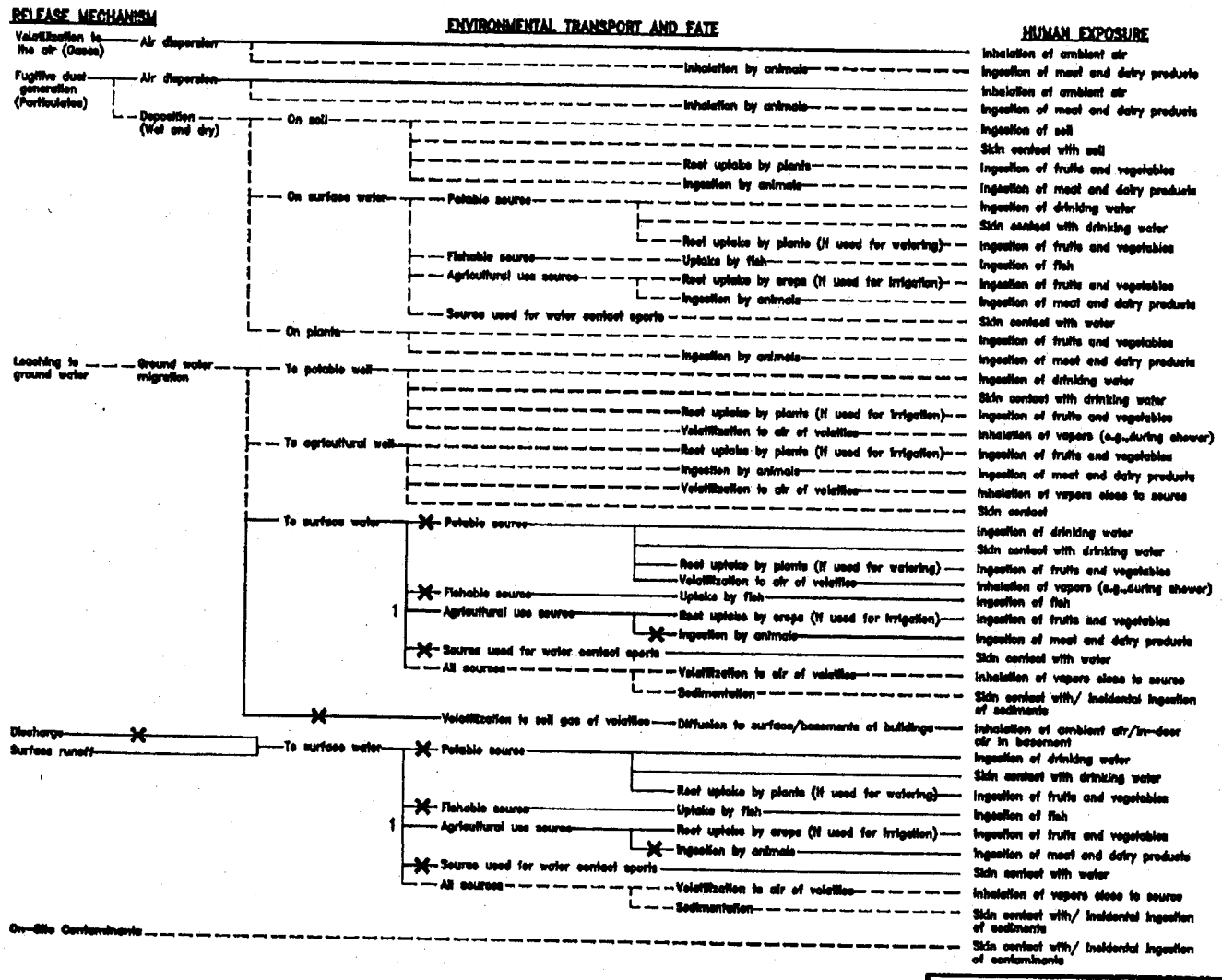


FIGURE 6-3
ENVIRONMENTAL FATE AND TRANSPORT
LANDFILL No. 3
CANNON AIR FORCE BASE
CLOVIS, NEW MEXICO

3) Inhalation of vapor phase chemicals at the site: volatilization from soil; inhalation of volatilized chemicals in ambient air.

4) Inhalation of fugitive dust generated at the site: entrainment of contaminants in soil; dispersion into the atmosphere above the site; inhalation of fugitive dust.

These four pathways are quantified in this risk assessment.

Pathways that may be complete but are likely to pose insignificant human health risks include: 1) ingestion and dermal contact with potentially contaminated groundwater during future domestic use; 2) inhalation of vapors volatilized from the playa lake; 3) dermal contact with surficial soils at the site; and 4) dermal contact with surface water drawn from the playa lake for agricultural purposes. The contribution of these exposure pathways is likely to be minor by comparison to exposure following ingestion of agricultural crops and beef or milk. Potentially exposed populations, exposure media, exposure points, and exposure routes for complete pathways are identified in Table 6-2. Also noted in this table are the decisions to select pathways for quantitative evaluation and the justification for including or excluding each pathway in the risk assessment.

Exposure Scenarios--Base personnel, onsite workers, and individuals living in areas downwind from Landfill No. 3 represent the significant populations potentially exposed to chemicals originating from the site that migrate to the playa lake or are emitted into the atmosphere above the site. The concentration of contaminants in the air originating from Landfill No. 3 is expected to be highest at the site perimeter and this assumption was corroborated by air dispersion modeling results. In order to assume a worst-case scenario, estimated exposure concentrations at the site perimeter, where they are expected to be highest, were used to evaluate the risk associated with all inhalation exposure scenarios. Base personnel and onsite workers working at or near Landfill No. 3 may be exposed chronically or subchronically to air emissions originating from the site

Table 6-2

Potentially Complete Exposure Pathways at Landfill No. 3, Cannon AFB, New Mexico

Exposure Route, Medium, and Exposure Point	Potentially Exposed Population	Pathway Selected for Evaluation	Reason for Selection or Exclusion
Inhalation of volatile chemicals in ambient air at or nearby site	Base personnel, nearby residents, on-site workers	Yes	Emissions of volatile chemicals can result in inhalation exposure of Base personnel, on-site workers and nearby residents.
Inhalation of fugitive dust in ambient air	Base personnel, residents living nearby, and on-site workers.	Yes	Wind entrainment of contaminated soils can result in inhalation exposure of Base personnel, on-site workers and nearby residents.
Ingestion of contaminated soil	Base personnel and trespassers	No	Base personnel not likely to inadvertently ingest soil; area is fenced-trespassers not likely.
Dermal contact with contaminated soil	Base personnel	No	No invasive activities at site; none or limited human exposure.
Ingestion of meat and dairy products from cattle exposed to contaminants from Playa Lake (stock water, irrigation of pasture/feed crops).	Consumers of locally produced meat and dairy products and nearby farm families.	Yes	A dairy exists to the northeast of Landfill No. 3 and several stockyards are located in the vicinity of Cannon AFB.
Dermal contact with chemical in playa lake water during agricultural use.	Off-base farmer drawing water from playa lake potentially contaminated with discharge from site for agricultural purposes.	No	Contribution of dermal contact with water drawn from playa lake is likely to be minor by comparison to the contribution of ingestion of agricultural products and livestock.
Dermal contact with chemicals in groundwater during home use.	Off-base residents	No	Modeled groundwater concentrations were too low to pose significant health risks.

419 " 1 96

Table 6-2

(Continued)

Exposure Route, Medium, and Exposure Point	Potentially Exposed Population	Pathway Selected for Evaluation	Reason for Selection or Exclusion
Inhalation of chemicals volatilized from groundwater during home use (while showering).	Off-base residents	No	Metals do not volatilize and the concentration of volatile chemicals predicted for groundwater are too low to present a human health risk.
Ingestion of contaminated groundwater migrating from site to potable water wells.	On-base workers, base personnel, off-base residents living downgradient from site.	No	Modeled groundwater concentrations were too low to pose significant human health risks.
Ingestion of fruits and vegetables irrigated with surface water drawn from playa lake impacted by runoff from site.	Consumers of locally grown agricultural crops and nearby farm families.	Yes	One farmer draws water from the potentially contaminated Playa Lake for agricultural purposes. There are agricultural wells in the vicinity of Landfill No. 3 that may potentially be contaminated with groundwater migrating from the site.

449 " 197

depending on length of employment (tour of duty). Residents living adjacent to the site, who grow and consume agricultural crops grown at the site perimeter as well as beef and dairy products from livestock fed with these crops, represent a "worst-case" scenario. These individuals may be subject to chronic (long-term) exposure to site-related contaminants. Individuals who consume commercially produced crops grown at the site perimeter and commercially produced beef and milk from livestock sustained on crops grown on the site perimeter, were not assessed because any contaminated commercial products would be widely distributed, thus reducing the potential for individual exposure by comparison to the farm family scenario.

Chronic and subchronic exposure scenarios are based on current predicted lifetime exposures. These scenarios assume exposure to contaminant levels predicted by modeled results at the nearest receptor. The scenarios that were evaluated in the risk assessment are:

<u>Lifetime, off-base residential</u>

1) adult, average
2) adult, reasonable maximum
3) child, average
4) child, reasonable maximum

<u>Occupational</u>

1) adult, average
2) adult, reasonable maximum

Chronic exposure to adults and children was evaluated for: 1) an average case, using 50th percentile values for exposure parameters (i.e., exposure duration and frequency) when available and appropriate; and 2) a reasonable maximum case, using 90th or 95th percentile values for exposure parameters when available and appropriate. Risk estimates for noncarcinogenic effects were predicted for adults and children. Risk

estimates for carcinogenic effects were predicted based on an exposure duration of 70 years.

6.3.5 Quantification of Exposures

This section describes the methodology used to estimate the magnitude, frequency, and duration of exposures for the populations and exposure pathways selected for quantitative evaluation. The exposure concentration estimates in the various exposure media and the methodologies used to obtain these estimates are discussed. Table 6-3 summarizes the average measured soil concentrations. Tables 6-4 and 6-5 summarize the exposure concentration estimates for all exposure media (i.e., soil, surface water, milk, beef, vegetables etc.). In addition, the exposure assumptions and algorithms used to calculate human intake are described.

6.3.5.1 Estimation of Exposure Concentrations

Groundwater--A series of mathematical models were used to estimate the transport and fate of groundwater contaminants migrating from Landfill No. 3 at CAFB. The objective of the analysis was to provide conservative estimates of the maximum concentrations of chemicals of potential concern that would be expected at targeted receptor sites (refer to Appendix G-2 for a detailed discussion of calculations).

Migration of soil water and contaminants in the vadose zone beneath Landfill No. 3 was analyzed using an analytical solution for steady state unsaturated flow. Groundwater flow and contaminant transport in the unconfined aquifer were analyzed with a separate analytical model. Two categories of receptors were considered to represent the potential for human exposure to contaminants originating at Landfill No. 3. These are hydraulically active and hydraulically passive receptors.

Table 6-3

Average Measured Soil Concentrations From 12 Soil Borings at Landfill No. 3, Cannon AFB, New Mexico

Chemicals	Soil Concentration (µg/kg)
Aldrin	2.3E-01
β-BHC	2.4E+03
δ-BHC	3.2E+00
y-BHC	4.7E-01
Bis(2-ethylhexyl)phthalate	2.0E+02
Diesel	6.1E+03
4,4'-DDD	2.4E-01
4,4'-DDE	2.7E-01
4,4'-DDT	6.8E-01
Heptachlor Epoxide	2.7E-01
Hydrocarbons	2.3E-04
Tetrahydrofuran	1.4E-01
Toluene	5.0E+00
Trichloropropene	4.1E-01

Table 6-4

Estimated Exposure Concentrations Associated with Landfill No. 3, Cannon AFB, New Mexico

Chemical	Surface Water mg/L		Ambient Air mg/m³			
			Chronic		Subchronic	
	Average	Reasonable Maximum	Average	Reasonable Maximum	Average	Reasonable Maximum
Aldrin	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Bis(2-ethylhexyl)phthalate	0.00E+00	0.00E+00	2.81E-08	2.81E-08	6.44E-07	6.44E-07
B-BHC	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
δ-BHC	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Y-BHC	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4,4'-DDD	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4,4'-DDE	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4,4'-DDT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Diesel Fuel	0.00E+00	0.00E+00	1.78E-08	1.78E-08	4.08E-07	4.08E-07
Heptachlor Epoxide	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Tetrahydrofuran	0.00E+00	0.00E+00	4.06E-07	4.06E-07	9.33E-06	9.33E-06
Toluene	5.00E-02	5.00E-02	2.51E-05	2.51E-05	5.76E-04	5.76E-04
Trichloropropene	0.00E+00	0.00E+00	2.54E-06	2.54E-06	5.83E-05	5.83E-05

449 201

Table 6-5

Estimated Exposure Concentrations in Foods Associated with Landfill No. 3, Cannon AFB, New Mexico

Chemical	Fruits mg/kg		Vegetables mg/kg		Meat mg/kg		Dairy mg/kg	
	Average	Reasonable Maximum	Average	Reasonable Maximum	Average	Reasonable Maximum	Average	Reasonable Maximum
Aldrin	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Bis(2-ethylhexyl) phthalate	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
B-BHC	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
δ-BHC	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Y-BHC	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4,4'-DDD	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4,4'-DDE	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4,4'-DDT	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Diesel Fuel	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Heptachlor Epoxide	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Tetrahydrofuran	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Toluene	2.77E-07	2.77E-07	2.77E-07	2.77E-07	2.00E-07	2.00E-07	6.00E-06	6.00E-06
Trichloropropene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

449 " 202

Hydraulically active receptors are defined as those that impact the nature of the groundwater flow field and therefore, the contaminant concentrations at the receptor as well. A hypothetical agricultural well placed at the southeast perimeter of Landfill No. 3 and the nine potable water wells located on-base fall into this category. Hydraulically, the wells draw groundwater towards them by creating a cone of depression that does not exist naturally. A hypothetical well was positioned to capture groundwater and contaminants migrating from the site.

The travel time of soil moisture through unsaturated soil from the bottom of the landfill to the water table was estimated to be 173 years. Solutes that may be sorbed/desorbed on soil, such as metals and pesticides, are expected to migrate at a slower apparent velocity than the soil moisture and will require a longer period of time to reach the water table. The attenuation of organic species from biological, chemical, and physical degradation was estimated assuming a first-order decay mechanism. Given the extended time of travel, even the most persistent species for which data were available (4,4'-DDE) is expected to be attenuated by a factor of more than 10^{15}. Less persistent species are expected to be attenuated to a greater degree. Therefore, organic chemicals of potential concern are predicted to be reduced to near zero concentrations in the water table (refer to Appendix G-2 for a detailed discussion of these calculations).

Surface Water--An estimated concentration at the surface water receptor was derived only for toluene. Although metals were also detected (within range of background levels) in the surficial soils, they adsorb strongly to soils. Metals generally are not very mobile in most soil systems although the rate of transportation is dependent on characteristics of the soil. Therefore, erosion, which is unlikely because of the arid climate, would be required to transport these contaminants to the playa lake.

The concentration of toluene in the playa lake was estimated based on its distribution coefficient (K_d) in sandy soils. The K_d describes the equilibrium concentration ratio of the solute sorbed to the solid phase (the soil) to the solute in the liquid

phase (soil water). The estimated concentration was 47 μg/L (Table 6-4) and was used to estimate the average and reasonable maximum concentrations of chemicals in vegetables, meat and dairy products for the chronic and subchronic exposure scenarios for off-base residents. Under actual field conditions, toluene concentrations in the playa lake water are likely to be less because of non-equilibrium conditions (refer to Appendix G-2 for a detailed discussion of the calculations).

Ambient Air--Emission rates of chemical compounds derived from volatilization and wind entrainment of contaminated dust from Landfill No.3 were estimated using predictive equations recommended by the USEPA. The emission rates were input into the Industrial Source Complex Short-Term (ISCST2) dispersion model to estimate average chemical concentrations in the atmosphere at on-site occupational and off-site residential receptors. The estimated average and reasonable maximum concentrations in air are presented in Table 6-4. The predicted concentrations were then used to estimate health risks to the exposed populations.

The area source algorithm is based on the equation for a finite crosswind line source and requires that each individual area source have the same north-south and east-west dimensions. Because the landfill is irregularly shaped, it was modeled as several area sources by dividing the area into multiple squares that approximate the geometry of the land. Contaminants with a Henry's Law constant of 1×10^5 atm-m^3/mole or greater and molecular weight less than 200 g/mole, were considered volatile. These compounds were evaluated for various volatilization emission mechanisms. The remaining compounds were considered to be non-volatile and were evaluated for various entrained dust emission mechanisms. Refer to Appendix G-1 for a detailed discussion of the air dispersion calculations.

Vegetables--Potentially contaminated surface water in the vicinity of Landfill No. 3 (playa lake) is used by a local farmer for irrigation purposes. For this risk assessment it was assumed that the use of contaminated water for irrigating farm crops

contributes to concentrations of toluene in edible portions of plants. The concentration of chemicals in plants irrigated with contaminated water depends on the concentration of the chemical in the irrigation water, subsequent concentration of the chemical in the soil, the plant type, as well as other factors.

To derive a concentration in soil from irrigation with water containing contaminants, an irrigation rate of 3,000 L/m^2/year is assumed (an average of approximately 39 inches of water applied over a six-month growing period in this geographic region) (Baes, et al., 1984; Base Natural Resources Environmental Group, 1992). Irrigation is assumed to continue for 30 years for evaluation of long-term exposures because soil concentrations of inorganic chemicals may build up over time. Degradation, chemical transformation, or other soil removal processes were not considered, although these processes likely occur. It was further assumed that the total mass of contaminants resides in the top 15 cm of soil and the soil bulk density was 1333 kg/m^3. Although volatile organic chemicals can be expected to largely volatilize from the irrigation water and soil surface before significant plant uptake can occur, and USEPA considers that levels of toluene in food are likely to be insignificant (ATSDR, Toxicological Profile for Toluene, 1989), toluene was evaluated for this pathway because of its moderate lipophilicity and potential for bioaccumulation (log K_{ow} = 2.7).

Appendix H provides the algorithm and spreadsheet calculations for quantifying contaminant concentrations in soil as a result of irrigation and subsequent uptake into fruits and vegetables. The estimated average and reasonable maximum contaminant concentration in vegetables resulting from irrigation of farm crops with surface water potentially contaminated with toluene is listed in Table 6-5.

Meat and Dairy Products--The use of contaminated surface water for stock water is assumed to contribute to concentrations of toluene in the edible meat of beef cattle and in milk and dairy products. While grazing, cattle also ingest surface soil, which can build up contaminant concentrations if the pasture is irrigated. As cattle

ingest contaminated feed, water, and soil, some chemicals may be absorbed in the animals' gastrointestinal tract. The more lipophilic chemicals may then accumulate in meat.

To estimate the chemical concentration in meat and dairy products, an equation derived from the *Multi-Pathway Health Risk Assessment Input Parameters Guidance Document* was used (Clement, 1988). Appendix H provides the algorithm and spreadsheet calculations for quantifying contaminants concentrations in meat and dairy products as a result of contaminated stock water and feed crops irrigated with contaminated surface water.

Contaminated food sources included in the evaluation are stock water from potentially contaminated playa lake water, feed crops irrigated with surface water drawn from the playa lake, and incidentally ingested soil. Toluene was the only compound modeled to the playa lake. The fraction of feed from a contaminated source was assumed to be 100% for water, feed, and soil. One-hundred percent of all contaminants in the water, feed, and soil was assumed to be bioavailable. A cattle water ingestion rate of 150 kg/day, a consumption rate of 16 kg/day for lactating cows and 8 kg/day for nonlactating cows and cattle (Base Natural Resources Environmental Group, 1992), and a soil ingestion rate of 0.6 kg/day, or 4% of the feed consumption rate (Clement, 1988) per head of cattle were assumed.

Significant accumulation in meat and milk is not expected because of the fairly low transfer coefficients for toluene (refer to Appendix H). This is consistent with data indicating that this compound is readily metabolized by mammals and excreted in urine. There is evidence to suggest that toluene is metabolized to chemically reactive species. However, these species would be expected to react with cellular constituents, thereby reducing their potential toxicity. The half-life for toluene in adipose tissue of humans ranges from 0.5 to 2.7 days (ATSDR, Toxicological Profile for Toluene, 1989).

The estimated average and reasonable maximum concentrations in beef and dairy products, assuming the cattle feed on corn, milo, and alfalfa irrigated with potentially contaminated surface water drawn from the playa lake and potentially contaminated surface water is provided as stock water are presented in Table 6-5.

6.3.6 Estimation of Chemical Intakes for Individual Pathways

Exposure is defined as the contact rate of an organism with a chemical or physical agent. Intake is defined as exposure normalized for time and body weight and is expressed in units of mg chemical/kg body weight-day (USEPA, 1989a).

There are three categories of variables that are used to estimate intake:

1) Chemical-related variables (exposure concentration);
2) Variables that describe the exposed population (contact rate, exposure frequency and duration, and body weight); and
3) Assessment-related variables (averaging time).

The chemical-related variables (exposure concentrations) are presented in Tables 6-4 and 6-5. Tables H4-1 through H4-4 presented in Appendix H summarize the assumptions and algorithms used to estimate exposure for each exposure pathway; the rationale for selecting individual values is explained in footnotes to the tables. The tables in Appendix H also document the equations used for calculating pathway-specific intakes. The generic equation for calculating chemical intakes is presented in Appendix H. Calculated intakes are presented in Appendix I, Table I-1.

Exposure assumptions recommended in the *Human Health Evaluation Manual, Supplemental Guidance: Standard Default Exposure Factors* (USEPA, 1991), the *Risk Assessment Guidance for Superfund* (USEPA, 1989a), and the *Exposure Factors*

Handbook (USEPA, 1989b) were used when available and applicable. Site-specific and chemical-specific values were used when available data justified their use; otherwise conservative default values were substituted.

6.3.7 Exposure Assessment Uncertainties

Major sources of uncertainty associated with the exposure assessment include:

1) The ability of fate and transport models to realistically simulate the behavior of chemicals in the environment; and

2) The accuracy of exposure assumptions in representing the degree and way in which individuals are exposed.

Uncertainty is addressed in this risk assessment by:

1) Incorporating both average and reasonable maximum values to provide a range of results rather than single values;

2) Using conservative estimates when defining reasonable maximum exposure assumptions in order to protect human health and the environment; and

3) Identifying and discussing the major sources of uncertainty and their effects on the exposure estimates so that the results can be properly interpreted and used for estimation of risks.

6.3.7.1 Fate and Transport Modeling

Release rates to the air, groundwater, and surface water were based on analytical data from the 1992 RI. Estimated releases to various media were assumed to be steady state, indicating that they will not increase or decrease over the assumed periods of time for exposure duration. Therefore, the estimated release rates are

conservatively biased and most likely are overestimated, because contaminant concentrations in the soil should decrease over time as chemicals volatilize to the air, degrade in the soil, and are flushed from the site.

Modeling the fate and transport of contaminants in air and water requires the use of overly simplistic assumptions that do not fully simulate the environment. Realistically, migration of contaminants from the source to receiving media involves numerous complex processes that are not necessarily addressed by the available models.

In many cases, conservative values were used for model input parameters. No pollutant removal by physical and chemical processes were considered and a decay coefficient of 0 was used in the model. Therefore, concentrations predicted at each receptor is a conservative estimate. These conservative assumptions result in higher ground level concentration estimates. In addition, subsurface contamination was assumed to be uniformly mixed. This assumption may or may not be overly conservative. The model used for transport of contaminants in groundwater and surface water uses conservative modeling assumptions to provide estimates of the maximum concentrations at the receptor sites. For groundwater modeling, results were based on time of travel calculations for soil moisture. Solutes, which may sorb/desorb on soil, would be expected to migrate at a slower apparent velocity than soil moisture and, therefore, would require a longer period of time to reach the water table. In addition, the most conservative K_d value was used to estimate the concentration of toluene in the playa lake and may have resulted in overestimation of the exposure concentration.

6.3.7.2 Exposure Parameter Estimation

The standard assumptions regarding body weight, exposure period, life expectancy, population characteristics, and lifestyle may not accurately represent site-specific exposure situations. The assumptions used most likely overestimate human exposures but may underestimate them in some cases. The purpose of exposure

parameter estimations are to reflect realistic, site-specific exposures. However, because exact current and future exposures that more accurately depict all scenarios cannot be determined, assumptions were made that most likely err on the conservative (safe) side to protect human health.

Assumptions regarding exposure parameters that are conservative and may overestimate exposures include:

1) The assumption that water from the playa lake was used as a source of stock water for cattle. The water is used by one farmer for irrigation purposes, but there currently is no information to suggest that the water is used for stock water. However, to assess a worst case scenario, it was assumed that the farmer also uses the water as a source of stock water for cattle.

2) The use of modeled concentrations to represent exposure point concentrations for all exposure scenarios. Actual measured soil concentrations were available, but direct contact with soil was not considered likely.

3) The amount of media intake is assumed to be constant and representative of the exposed population.

4) Exposure is assumed to occur 350 days/year for chronic exposure scenarios for off-base residents involving inhalation of ambient air and consumption of locally produced agricultural, beef, and dairy products. Hypothetical on-site workers are assumed to be exposed by inhalation of ambient air at the perimeter of Landfill No. 3, where contaminant concentrations are expected to be highest, 100 days/year for 2 or 8 hours/day. It is conservative to assume that off-base residents would consume milk, meat, fruit, or vegetables that come from the contaminated source 350 days/year. It is even more conservative to assume that on-site workers would be at the site perimeter 100 days/year for 8 hours/day because there are no known activities which take place at the site.

5) Ambient air concentrations predicted at the site perimeter were used to estimate risks associated with residential exposure. This assumption is overly conservative, because contaminant concentra-

tions in the air would be expected to be diluted at distant sites, such as off-base residences.

6) The use of feed-to-beef and feed-to-milk transfer coefficients that do not account for metabolism and/or disposition of chemicals may also lead to overestimation of exposure.

7) One hundred percent absorption of inhaled and ingested contaminants is assumed.

All of the above exposure assumptions tend to overestimate exposures. No assumptions that tend to underestimate exposures have been identified with respect to exposure parameter estimation.

Exposure parameters used in the assessment represent exposures that may occur considering both current and future land use. Future land use is not expected to differ significantly from current land use practices.

6.4 Toxicity Assessment

Toxicity assessment involves determining whether exposure to an agent can increase the incidence of a particular adverse effect (e.g., cancer, birth defects) in humans, characterizing the nature and strength of evidence of causation, and if sufficient data are available, quantifying the relationship between the dose of the contaminant and the incidence of adverse health effects in the exposed population. Toxicity values are derived from the quantitative dose-response relationship. These values can be used to estimate the incidence or potential for adverse effects as a function of human exposure to the contaminant. This section summarizes the toxicity values used for the risk assessment.

6.4.1 Background

USEPA has performed the toxicity assessment step for numerous chemicals, and the resulting toxicity information and toxicity values have undergone extensive peer review. Toxicity values used to evaluate noncarcinogenic effects (effects other than cancer) include:

- Reference dose (RfD) in units of mg/kg-day; and
- Reference concentration (RfC) in units of mg/m^3.

The RfD and RfC are estimates (with uncertainty spanning an order of magnitude) of the daily exposure to the human population (including sensitive subgroups) that is likely to be without an appreciable risk of deleterious effects during a portion of the lifetime, in the case of a subchronic RfC or RfD, or during the lifetime in the case of a chronic RfC or RfD. The RfD is used to evaluate oral and dermal exposures and the RfC is used to evaluate inhalation exposures.

Toxicity values used to evaluate carcinogenic effects include:

- Weight of evidence classification;
- Slope factor (SF) in units of $(mg/kg\text{-}day)^{-1}$; and
- Unit risk for inhalation exposure in units of $(\mu g/m^3)^{-1}$.

The weight of evidence classification is an USEPA classification system for characterizing the extent to which the available data indicate that an agent is a human carcinogen. In assessing the carcinogenic potential of a chemical, USEPA classifies the chemical into one of the following groups, according to the weight of evidence from epidemiological studies and animal studies:

Group A - Human Carcinogen (sufficient evidence of carcinogenicity in humans);

Group B - Probable Human Carcinogen (B1 - limited evidence of carcinogenicity in humans; B2 - sufficient evidence of carcinogenicity in animals with inadequate or lack of evidence in humans);

Group C - Possible Human Carcinogen (limited evidence of carcinogenicity in animals and inadequate or lack of human data);

Group D - Not Classifiable as to Human Carcinogenicity (inadequate or no evidence); or

Group E - Evidence of Noncarcinogenicity for Humans (no evidence of carcinogenicity in adequate studies).

USEPA performs quantitative carcinogenic risk assessments for chemicals in Groups A and B, and on a case-by-case basis for chemicals in Group C. Classification of a chemical as Group D or E precludes performance of quantitative risk assessment. Cancer slope factors are estimated through the use of mathematical extrapolation models, most commonly the linearized multistage model, for estimating the largest possible linear slope (within the 95% confidence limit) at low extrapolated doses that is consistent with the data. The slope factor is characterized as a plausible upper-bound estimate of the probability of a response per unit intake of a chemical over a lifetime. The slope factor is used to estimate an upper-bound probability of an individual developing cancer as a result of a lifetime of exposure to a particular level of a potential carcinogen. The unit risk for drinking water and inhalation is the risk per concentration unit in water (risk per $\mu g/L$) and air (risk per $\mu g/m^3$), respectively.

6.4.2 Sources of Information

This assessment used only toxicity values that have been developed by USEPA. The following sources of information, in order of priority, were consulted to identify toxicity values for chemicals of concern with potential for human exposure:

- USEPA's Integrated Risk Information System (IRIS) - IRIS is updated monthly, provides verified RfDs and slope factors, and is the Agency's preferred source of toxicity information;
- USEPA's Health Effects Assessment Summary Tables (HEAST) - HEAST provides information on interim (not yet verified by US EPA Workgroups) as well as verified RfDs and slope factors and is used only to obtain toxicity values for chemicals not listed in IRIS; and
- Other USEPA documents, such as the Drinking Water Regulations and Health Advisories (USEPA, 1991c).

6.4.3 Toxicity Values Used in the Risk Assessment

This section summarizes the available toxicity information for each of the chemicals of concern with potential for human exposure. Chemicals of concern that were screened out by the exposure assessment (see Section 6.3.4, Exposure Assessment) are not included in the toxicity assessment. The relevant information includes standard USEPA toxicity values and toxicity values derived for use in risk assessment. The information in this section was used in determining the risks associated with noncarcinogenic effects (RfDs), carcinogenic potential (slope factors), and weight of evidence classification. These values are defined and discussed in Section 6.4.1 of the report.

Toxicity Values for Noncarcinogenic Effects

The RfD values for the chemicals of concern are presented in Table 6-6 and were obtained from IRIS dated 12 October 1992, or from the USEPA, HEAST, 1991. Oral RfD values were not available for β-BHC, δ-BHC, 4,4'-DDD, and 4,4'-DDE. Unless a specific dermal RfD was listed by IRIS or HEAST, the RfD for dermal exposures was assumed to be the same as for oral exposures. When available, inhalation RfDs or RfCs were included.

Toxicity Values for Carcinogenic Effects

The slope factors for chemicals of potential concern classified by USEPA as carcinogens are also presented in Table 6-6 and were obtained from an IRIS search dated 12 October 1992 or from HEAST, 1991. The slope factor for dermal exposure was assumed to be the same as the slope factor for oral exposure. When available, inhalation unit risk factors were included.

6.4.4 Health Effects Summaries

This section of the report summarizes the toxicity information available for the noncarcinogenic and carcinogenic effects associated with the chemicals of potential concern. General information on the potential health effects of exposures to the chemicals of potential concern is provided. Toxicity information on noncarcinogenic effects is provided for each contaminant that has an RfD value and includes the data that formed the basis for the determination of the RfD. Information is also included for contaminants for which RfDs were derived. Information on the potential carcinogenic risks includes supporting data for the USEPA carcinogenic classification. Table 6-7 summarizes the available information on human health effects of exposure to chemicals of potential concern. Unless otherwise stated, the information presented below on each of the chemicals of concern is summarized from the information available on IRIS as of 12 October 1992.

Aldrin

Exposure to aldrin is limited, because it is broken down very rapidly to dieldrin in the environment. No increase in mortality from any cause has been reported in workers who had been employed in the manufacture of aldrin for more than four years. Information regarding the respiratory effects of aldrin in humans is limited and conflicting. One occupational exposure study indicated that exposed workers

Table 6-6

Toxicity Values for Chemicals Specific to Landfill No. 3, Cannon AFB, New Mexico

Chemical	EPA Class	Chronic Oral RfD (mg/kg-day)	Subchronic Oral RfD (mg/kg-day)	Chronic Inhalation RfC (mg/m³)	Subchronic Inhalation RfC (mg/m³)	Oral Slope Factor (mg/kg-day)⁻¹	Inhalation Unit Risk 1/(µg/m³)	Inhalation Slope Factor (mg/kg-day)⁻¹
Aldrin	B2	3.00E-05 [i]	3.00E-05 [h]	--	--	1.70E+01 [i]	4.90E-03 [i]	1.70E+01 [h]
beta-BHC	C	--	--	--	--	1.80E+00 [i]	5.3E-04 [i]	--
delta-BHC	D	--	--	--	--	--	--	1.80E+00 [h]
gamma-BHC	B2/C	3.00E-04 [i]	3.00E-03 [h]	--	--	1.30E+00 [h]	3.7E-05	--
Bis(2-ethylhexyl)phthalate	B2	2.00E-02 [i]	2.00E-02 [h]	--	--	1.40E-02 [i]	--	--
4,4'-DDD	B2	--	--	--	--	2.40E-01 [i]	--	--
4,4'-DDE	B2	--	--	--	--	3.40E-01 [i]	--	--
4,4'-DDT	B2	5.00E-04 [i]	5.00E-04 [h]	--	--	3.40E-01 [i]	9.70E-05 [i]	3.40E-01 [h]
Diesel	D	8.00E-03 [p]	8.00E-03 [p]	--	--	--	--	--
Heptachlor epoxide	B2	1.30E-05 [i]	1.30E-05 [h]	--	--	9.10E+00 [i]	2.60E-03 [i]	9.10E+00 [h]
Tetrahydrofuran		--	--	--	--	--	--	--
Toluene	D	2.00E-01 [i]	2.00E+00 [h]	4.00E-01 [i]	2.00E+00 [h]	--	--	
Trichloropropene		5.00E-03 [h]	5.00E-03 [h]	--	--	--	--	--

[h] - HEAST, First Quarter, January, 1991 (USEPA, 1991b).
[i] - IRIS on line search (10/92).
[p] - Provisional Oral RfD.

Table 6-7

Chronic Toxicities

Chemical	Noncarcinogenic Effect		Carcinogenic Effect	
	Target Organ	Critical Effect	Target Organ/ Tumor Type	EPA Class
Aldrin/Dieldrin	Liver Kidney	Lesions occur in both the liver and kidneys after chronic ingestion by laboratory animals.	Liver - hepatomas, hyperplasia, carcinoma.	B2 - Probable Human Carcinogen.
	Central Nervous System (CNS)	Chronic exposure to moderate levels in humans can cause headaches, dizziness, irritability, vomiting, or uncontrolled muscle movements.		
BHC (beta, delta, gamma)	Liver	Hypertrophy was seen in a chronic ingestion study in rats.	Liver - hepatocellular carcinomas	C - Possible Human Carcinogen (beta-BHC). D - Not classified (delta-BHC). B2/C - Probable/Possible Human Carcinogen (gamma-BHC).

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Table 6-7

(Continued)

Chemical	Noncarcinogenic Effect		Carcinogenic Effect	
	Target Organ	Critical Effect	Target Organ/ Tumor Type	EPA Class
Bis(2-ethylhexyl)phthalate	Reproductive System	Interference with sperm production, delays in sexual maturation, decreased fertility and deleterious effects on fetal development have been reported in animals exposed to BEHP in the diet.	Liver tumors in rats and mice. Increased incidence of carcinomas and adenomas in rats.	B2 - Probable Human Carcinogen.
	Liver	Increased weight (absolute) in guinea pigs fed diets containing BEHP.		
4,4'-DDD	Thyroid	Atrophy and tumors were seen in rats and mice exposed chronically.	Liver Lung Thyroid	B2 - Probable Human Carcinogen.
4,4'-DDE	Liver Thyroid	Hypertrophy may result after chronic oral exposure of rodents.	Liver - hepatocellular carcinomas.	B2 - Probable Human Carcinogen.

4119 218

Table 6-7

(Continued)

Chemical	Noncarcinogenic Effect		Carcinogenic Effect	
	Target Organ	Critical Effect	Target Organ/ Tumor Type	EPA Class
4,4'-DDT	Liver	Chronic exposure may result in changes in enzyme levels in rodents.	Liver - carcinomas.	B2 - Probable Human Carcinogen.
	Reproductive System	Some evidence in laboratory animals indicates that heptachlor may decrease fertility and may adversely affect offspring.		
Diesel Fuel	Liver	Fatty changes in the livers of mice have been reported following subchronic inhalation exposure.		D - Not classified as to Human Carcinogenicity

419 219

Table 6-7

(Continued)

Chemical	Noncarcinogenic Effect		Carcinogenic Effect	
	Target Organ	Critical Effect	Target Organ/ Tumor Type	EPA Class
Heptachlor Epoxide	Liver	Chronic exposure may result in liver damage including steatosis, fibrosis, or necrosis in addition to increases in relative organ weight.	Liver-carcinomas.	B2 - Probable Human Carcinogen.
	Kidney	Kidney granulomas have been reported.		
	Blood	Increased red blood cell count has been reported in laboratory animals exposed to heptachlor and heptachlor epoxide.		
Toluene	Skin	Irritation to the skin and eyes has been seen in humans.		D - Not Classified as to Human Carcinogenicity.
	Liver Kidney	The weights of the liver and kidneys increased in a subchronic study in rats at moderate to high levels.		
Trichloropropene	Eye	Irritation of the eye has been reported in dogs exposed to trichloropropene by inhalation.		Not Classified

demonstrated no new pulmonary disease or deterioration of existing pulmonary disease (ATSDR, Toxicological Profile for Aldrin/Dieldrin, 1991) although a similar study reported significantly increased incidences of pneumonia and other pulmonary diseases (ATSDR, Draft Toxicological Profile for Aldrin/Dieldrin, 1991). Central nervous system (CNS) excitation culminating in convulsions was the principal toxic effect noted in occupational studies of workers employed in the manufacture or application of aldrin. Short-term exposure to high levels of aldrin caused convulsions and kidney damage. Long-term exposures to lower levels of aldrin may also cause convulsions as a result of aldrin's potential to accumulate within the body. Long-term exposure to moderate levels of aldrin caused headaches, dizziness, irritability, vomiting, or uncontrollable muscle movements. A condition in which aldrin causes the body to destroy its own blood cells has been noted in some sensitive people.

The carcinogenic and reproductive/developmental effects of aldrin in humans are currently unknown. Experimental studies indicate that animals born to mothers that were fed aldrin did not live long. Conflicting results have been obtained in animal studies with regard to the teratogenic potential of aldrin, as well as its effects on reproductive performance. One study revealed detectable levels of dieldrin (a lipid soluble metabolite of aldrin that is toxic and is stored in adipose tissue) in the human placenta, amniotic fluid, and fetal blood. These results suggest that dieldrin can pass through the human placenta and accumulate in the developing fetus. A limited number of epidemiologic studies examining the incidence of cancer in workers exposed to aldrin or dieldrin exist. No evidence for a carcinogenic effect of aldrin in humans was observed in these studies (ATSDR, Toxicological Profile for Aldrin/Dieldrin, 1991).

IRIS lists the chronic oral RfD for aldrin as 3.0E-05 mg/kg-day. This value was determined from a two year chronic study in rats using aldrin. The experimental groups were orally dosed with 0, 0.5, 2, 10, 50, 100 or 150 ppm (in the diet) for two years. Liver lesions characteristic of chlorinated insecticide poisoning were observed at dose levels of 0.5 ppm and greater. These lesions were characterized by enlarged

centrilobular heptic cells, with increased cytoplasmic oxyphilia, and peripheral migration of basophilic granules. A statistically significant increase in liver-to-body weight ratio was observed at all dose levels. Kidney lesions occurred at the highest dose levels. Survival was markedly decreased at dose levels of 50 ppm and greater. A Lowest Observed Adverse Effect Level (LOAEL) of 0.5 ppm was established in this study. A No Observed Adverse Effect Level (NOAEL) was not established.

Additional data are fairly supportive of the findings from the critical study. Effect and no-effect levels are similar (to those found for rats) for liver effects in dogs after 15 months exposure to aldrin in the diet. Liver effects were observed at slightly higher doses in several other subchronic-to-chronic rat and dog studies. Short-term exposure to higher doses resulted in mortality for a number of species.

The uncertainty factor used to derive the RfD for aldrin is 1000. This factor encompasses the uncertainty of extrapolation from animals to humans, the uncertainty in the range of human sensitivities, and an additional uncertainty because the RfD is based on a LOAEL rather than a NOAEL. The confidence level for the RfD value is medium. The supporting study performed histopathologic analysis, but lacked other toxicologic parameters. Confidence in the data base was also medium. There is no inhalation RfD or RfC for aldrin. HEAST lists the subchronic RfD as 3.0E-05 mg/kg-day.

Human carcinogenicity studies are inadequate, but animal carcinogenicity studies are sufficient to classify aldrin as Group B2 - Probable Human Carcinogen. The oral slope factor for aldrin is listed in IRIS as 1.7E+01 $(mg/kg\text{-}day)^{-1}$ and the inhalation unit risk is listed as 4.9E-03 $(\mu g/m^3)^{-1}$. After chronic ingestion of 10 ppm in the diet of mice, a statistically significant increase in hepatomas was observed. Most of these tumors were evaluated to be liver carcinomas. Adequate numbers of animals were treated for a large proportion of their lifetime and the route of treatment was appropriate. HEAST listed an inhalation slope factor of 1.70E+01 $(mg/kg\text{-}day)^{-1}$.

BHC (Beta, Delta and Gamma)

People generally are not exposed to the beta and delta-forms of benzene hexachloride (BHC) separately, but to lindane (gamma-BHC) or to technical-grade BHC (a mixture of the alpha, beta, and delta-forms). Therefore, the health effects of the BHC isomers are considered jointly. The adverse health effects of lindane and the other BHC isomers (alpha, beta, and delta) that have been seen in humans include lung irritation, heart disorders, blood disorders, headache, convulsions, and alterations in levels of sex hormones. These effects were observed in individuals exposed to BHC vapors during its manufacture and/or in individuals accidentally exposed to very large quantities of BHC. Death can result in humans and animals exposed to large amounts of BHC. Liver disease has been reported in animals fed lindane or alpha, beta, or technical-grade BHC and liver cancer has been reported in rodents which received long-term administration of these compounds (ATSDR Toxicological Profile for α,β,γ, and δ-Hexachlorocyclohexane, 1989).

Beta-BHC

There are no oral or inhalation RfD or RfC values listed in IRIS or HEAST for beta-BHC. Beta-BHC is listed as Class C - Possible Human Carcinogen. This classification is supported by an increase in benign liver tumors when mice were exposed to beta-BHC in the diet. The oral slope factor is listed in IRIS as 1.8E+00 $(mg/kg/day)^{-1}$ and the inhalation slope factor is listed in HEAST as 1.8E+00 $(mg/kg\text{-}day)^{-1}$. IRIS lists an inhalation unit risk of 5.3E-04 $(ug/m^3)^{-1}$.

Delta-BHC

Neither a RfD nor a slope factor is given for delta-BHC in IRIS or HEAST. It is classified as Group D - Not Classifiable as to Human Carcinogenicity.

Gamma-BHC (Lindane)

The oral RfD for gamma-BHC is listed in IRIS as 3.0E-04 mg/kg-day. This value is supported by a 12 week study which dosed rats with 0, 0.2, 0.8, 4, 20, or 100 ppm gamma-BHC in the diet. After 12 weeks, 15 animals/sex/group were sacrificed. The remaining rats were fed the control diet for an additional six weeks before sacrifice. Treatment-related effects were noted in mortality, hematology, clinical chemistry, and urinalysis. Rats receiving 20 and 100 ppm gamma-BHC were observed to have greater-than-control incidence of the following: liver hypertrophy, kidney tubular degeneration, hyaline droplets, tubular distension, interstitial nephritis, and basophilic tubules. Because these effects were mild or rare in animals receiving 4 ppm, this value represents a NOAEL. The reviewers of the study calculated the dose to be 0.29 mg/kg/day for males and 0.33 mg/kg/day for females, based on measured food intake. A LOAEL of 20 ppm (converted to 1.55 mg/kg-day for males) was also established.

An uncertainty factor of 1000 was used to determine the RfD for gamma-BHC. A factor of 10 each was employed for use of a subchronic assay, to account for interspecies variation and to protect sensitive human subpopulations. A confidence rating of medium is associated with the RfD for gamma-BHC. This rating reflects that the principal study used an adequate number of animals and measured multiple end-points. There are no inhalation RfD or RfC values currently available. However, a risk assessment for development of an inhalation RfD is under review for this agent. HEAST listed the subchronic RfD as 3.0E-03 mg/kg-day.

Gamma-BHC is classified as a Group B2/C - Carcinogen. HEAST lists the oral slope factor as 1.3E+00 $(mg/kg\text{-}day)^{-1}$. No inhalation unit risk was given.

Bis(2-ethylhexyl)Phthalate

Most information about the health effects of bis(2-ethylhexyl)phthalate (BEHP) has been obtained from animal studies conducted on rodents. BEHP appears to affect rodents differently than humans, making human health effects difficult to predict. Studies in rats indicate that BEHP in the air has no effect on lifespan or the ability to reproduce and, therefore, breathing BEHP does not appear to have serious harmful effects. Adverse health effects resulting from dermal contact with BEHP is not expected because it is not easily absorbed through the skin (ATSDR, Toxicological Profile for Di(2-Ethylhexyl)Phthalate, 1992).

Short-term exposures to BEHP interfered with sperm formation in rodents. Although these effects were reversible, the process of sexual maturation was delayed. Short-term exposure appeared to have no effect on male fertility although long-term exposure resulted in decreased fertility in both males and females. BEHP resulted in deleterious effects on the development of the fetus (low birth weights and skeletal and/or nervous system problems) when pregnant rodents were exposed. Therefore, it is possible that exposure of pregnant women to BEHP could result in similar effects, but this not certain. Long-term exposure of animals to BEHP results in structural and functional changes in the kidney (ATSDR, Toxicological Profile for Di(2-Ethyl-hexyl)phthalate, 1992).

There have been no studies of workers exposed to BEHP that indicate it causes cancer in humans. Ingestion of high doses of BEHP for long periods of time resulted in liver cancer in rats and mice. However, there is disagreement as to whether exposure to BEHP increases the risk of humans for developing cancer because BEHP causes less damage to human livers than rodent livers (ATSDR, Toxicological Profile for Di(2-Ethylhexyl)Phthalate, 1992).

An oral RfD of 2.0E-02 mg/kg-day is listed in IRIS for bis(2-ethylhexyl)phthalate based primarily on a subchronic-to-chronic oral bioassay conducted in guinea pigs. Guinea pigs were fed diets containing BEHP for a period of 1 year. Males and females consumed feed containing 0.13%, 0.04%, or control diet. These dietary levels correspond to 64 or 19 mg/kg-day based on measured food consumption. The critical effect observed in this study was increased relative liver weight in females at both doses tested (64 and 19 mg/kg-day). No treatment-related effects were seen on mortality, body weight, kidney weight, or gross pathology and histopathology of kidney, liver, lung, spleen, or testes. A NOAEL was not established in the study but a LOAEL of 19 mg/kg-day was established. An uncertainty factor of 1000 was used. Factors of 10 each were used to account for interspecies variation and protection of sensitive human subpopulations. An additional factor of 10 was used to account for the less than life-time exposure and because, while the RfD was determined from a LOAEL, the effect observed was considered to be minimally adverse. A confidence rating higher than medium for the RfD was precluded by the fact that only two doses of BEHP were used. HEAST lists a subchronic oral RfD of 2.0E-02 mg/kg-day.

USEPA classifies BEHP as a Group B2 -- Probable Human Carcinogen. This is based on animal carcinogenicity data in which rats and mice fed diets containing BEHP demonstrated an increased incidence of hepatocellular carcinomas and combined incidence of carcinomas and adenomas in female rats and both sexes of mice. Data from a mortality study conducted on BEHP production workers exposed to unknown concentrations was considered inadequate for assessing the human carcinogenic potential. The oral slope factor for BEHP is 1.4E-02 $(mg/kg\text{-}day)^{-1}$.

4,4'-DDD, -DDE, DDT

Typically, people are not exposed to 4,4'-DDT, -DDD, or -DDE individually, but rather to a mixture of all three, since 4,4'-DDE and 4,4'-DDD are contaminants, as well as degradation and metabolic products of 4,4'-DDT. Therefore,

the toxicities of DDT, DDE, and DDD should be considered jointly. The human and animal health effects that result from inhalation of 4,4'-DDT, -DDE, or -DDD are currently unknown. The health effects resulting from human exposure to 4,4'-DDT, -DDE, or -DDD in water are also unknown at this time. However, single human exposures to 4,4'-DDT, -DDE, or -DDD in food at doses of 214-571 ppm have resulted in headache, nausea, vomiting, increased heart rate, and convulsions. Long-term human exposures (18 months) to lower doses (22 ppm) of the three compounds in food caused no adverse health effects (ATSDR, Toxicological Profile for p,p'-DDT, DDE, DDD, 1989).

4,4-DDD

The health effects resulting from exposure of animals to 4,4'-DDD in water are not known. A NOAEL of 26 mg/kg-day was identified during short-term exposure (one week) of mice to 4,4'-DDD in the diet. Exposure of rats to 1221 mg/kg-day 4,4'-DDD for 16 days resulted in atrophy of the thymus. NOAELs of 165 and 107 mg/kg-day were identified in chronic studies (78 weeks) using rats and mice, respectively. However, at 85 mg/kg-day, exposure to 4,4'-DDD resulted in thyroid tumors in rats. In a separate study, exposure to 32.5 mg/kg-day 4,4'-DDD caused lung tumors in mice (ATSDR, Toxicological Profile for p,p'-DDT, DDE, DDD, 1989).

Neither IRIS nor HEAST list an oral RfD, inhalation RfD or inhalation RfC.

4,4'-DDD is a Group B2 - Probable Human Carcinogen. This classification is based on the induction of lung tumors in male and female mice, liver tumors in male mice and thyroid tumors in male rats. There are no human carcinogenicity data. The oral slope factor is 2.4E-01 $(mg/kg\text{-}day)^{-1}$. The supporting study used an adequate number of animals, but the slope factor was derived using tumor incidence data from one dose. There is no inhalation unit risk at this time.

4,4'-DDE

The health effects resulting from exposure of animals to 4,4'-DDE in water are not known. Exposure of mice (by gavage) to 26 mg/kg-day 4,4'-DDE for 24 hr/day for one week caused alterations in the liver. When rats were exposed to 28 mg/kg-day 4,4'-DDE by gavage on gestation days 15-19, a decrease in the weight of the ovaries was noted. A NOAEL of 42 mg/kg-day was identified in a long-term (78 weeks) study in which rats were fed 4,4-DDE in the diet. Hamsters fed 41.5 mg/kg/day 4,4-DDE for 128 weeks exhibited necrosis of the liver and when 4,4-DDE was administered by gavage, tumors of the liver were observed. When mice were exposed to 19 mg/kg-day 4,4'DDE in the diet for 78 weeks, liver tumors were also observed (ATSDR, Toxicological Profile for p,p'-DDT, DDE, DDD, 1989).

Neither IRIS nor HEAST list an oral RfD, inhalation RfD or inhalation RfC.

4,4'-DDE is classified as a Group B2 - Probable Human Carcinogen. This classification is based on increased incidence of liver tumors including carcinomas in two strains of mice and in hamsters, and thyroid tumors in female rats when 4,4'-DDE is given in the diet. Human data are not available. The oral slope factor is 3.4E-01 $(mg/kg\text{-}day)^{-1}$. This value is the geometric mean of six slope factors computed from incidence data by sex.

4,4'-DDT

The primary effect of short-term exposure to high levels of 4,4'-DDT is on the nervous system. Oral ingestion of large quantities of 4,4'-DDT have resulted in excitability, tremors, and seizures in humans. Irritation of the eyes, nose, and throat have been reported by people who have come in contact with 4,4'-DDT. Exposure to low doses of DDT on a long-term basis has resulted in changes in the levels of liver

enzymes involved in metabolism of drugs and chemicals, but there was no indication that 4,4'-DDT caused irreversible damage (ATSDR Toxicological Profile for p,p' - DDT, DDE, DDD, 1989).

Studies conducted in laboratory animals suggest that exposure to 4,4'-DDT may have harmful effects on reproduction and may result in an increased occurrence of liver tumors. However, five studies of 4,4'-DDT exposure in humans did not show increases in the number of deaths or cancers (ATSDR Toxicological Profile for p,p' - DDT, DDE, DDD, 1989). Increasing evidence indicates that pesticides, including 4,4'-DDT, can alter immune function in rodents, although studies in humans are limited and ambiguous. In a study of pesticide formulators in India, 73% of workers exposed to 4,4'-DDT had altered levels of serum immunoglobulins, although no increase in infections was noted (Dean et al., 1991).

The oral RfD for 4,4'-DDT is listed in IRIS as 5E-04 mg/kg-day. This value is based on a chronic rat feeding study in which 4,4'-DDT was provided in the diet. Weanling rats were fed commercial DDT in doses of 0, 1, 5, 10, or 50 ppm for 15-27 weeks. Increasing hepatocellular hypertrophy was seen at doses of 5 ppm and greater. Therefore, 5 ppm was established as a LOAEL. A NOAEL of 1 ppm (converted to 0.05 mg/kg-day) was also established in the study. An uncertainty factor of 100 was used to account for interspecies conversion and to protect sensitive human subpopulations (10x each). An uncertainty factor for subchronic to chronic conversion was not included because of corroborating chronic data in the data base. A confidence rating of medium was associated with the RfD and reflects that the principal study was adequate, but of shorter duration than desired. There are no values for the inhalation RfD or RfC at this time. HEAST lists the subchronic oral RfD as 5.0E-04 mg/kg-day.

4,4-DDT is classified as Group B2 - Probable Human Carcinogen. This classification is based on tumors (usually liver) in various mouse strains and three rat studies. Human carcinogenicity data is inadequate. The oral slope factor listed in IRIS

is 3.4E-01 $(mg/kg\text{-}day)^{-1}$. The inhalation unit risk is listed in IRIS as 9.7E-05 $(mg/m^3)^{-1}$. HEAST lists an inhalation slope factor of 3.4E-01 $(mg/kg\text{-}day)^{-1}$.

Diesel Fuel

Fuels are complex hydrocarbon mixtures produced by distillation of crude oil. Therefore, they may contain hundreds of hydrocarbon components, as well as additives. Diesel fuels are middle distillates that are composed of less volatile hydrocarbons, generally coming off the distillation column at temperatures of 150-360 °C. Diesel fuels consist primarily of C_9 and C_{20} hydrocarbons. Marine diesel fuels are comprised roughly of 13% paraffins, 44% aromatics, and 44% naphthalenes (NTP, 1986). Marine diesel fuel may also contain greater than 10% PAHs (polyaromatic hydrocarbons). Soluble, volatile components of these fuel mixtures may consist of benzene, toluene, xylenes, and ethylbenzene.

The data are sufficient to derive a provisional oral RfD for marine diesel fuel based on subchronic inhalation studies. Studies on marine diesel fuel were conducted in beagle dogs, Fischer-344 rats, and C57BL/6 mice. Animals were exposed continuously to 300 mg/m^3 marine diesel fuel for 90 days. A LOAEL of 50 mg/m^3 (converted to 81 mg/kg-day) was identified in the study. This value was based on findings of fatty changes in the livers of female C57BL/6 mice. A provisional RfD of 8.0E-03 mg/kg-day was calculated for diesel fuel. An uncertainty factor of 10,000 was used and accounts for five areas of uncertainty: variation between and within species, use of a LOAEL (in lieu of a NOAEL), extrapolation to chronic duration, and deficiencies in the database (10x each). Overall confidence in this provisional RfD is low reflecting that only two doses were examined, failure to identify a NOAEL, and the use of subchronic inhalation studies for development of a chronic oral RfD (USEPA, 1992).

Based on the available data, diesel fuel can be classified as Group D - Not Classifiable as to Human Carcinogenicity. Epidemiological studies provided no

conclusive evidence for carcinogenicity of diesel fuels to humans and skin painting studies in laboratory animals were inconclusive. Classification of a chemical in weight-of-evidence Group D precludes quantitative risk assessment (USEPA, 1992)

Heptachlor Epoxide

Upon entering the body, heptachlor is metabolized to heptachlor epoxide and other related chemicals. Heptachlor is a major component of the pesticide chlordane. Information regarding human health effects from exposures to heptachlor is sparse. Tremors and convulsions have been reported in experimental animals exposed orally to high levels of heptachlor for short periods of time. Long-term exposure to heptachlor may adversely affect the liver. Animals fed heptachlor in an experimental setting have been reported to have enlarged livers, liver damage, kidney damage, and increased red blood cell count. Tremors and convulsions have also been reported in animals exposed to heptachlor on a long-term basis (ATSDR Toxicological Profile for Heptachlor/Heptachlor Epoxide, 1992).

Heptachlor epoxide is more harmful than heptachlor, primarily because of its ability to be stored in fat for long periods of time. The other breakdown products of heptachlor epoxide generally are less toxic. Long-term exposure to heptachlor epoxide may adversely affect the liver. Animals fed heptachlor epoxide in an experimental setting have been reported to have enlarged livers, liver damage, kidney damage, and increased red blood cell count.

Placental transfer of heptachlor epoxide has been reported following inhalation exposure. Heptachlor epoxide has also been identified in breast milk. This compound has been detected in stillborn infant brain, adrenal, lung, heart, liver, kidney, spleen, and adipose tissues. However, the studies reporting these findings were limited by lack of data concerning route, duration, extent of exposure, and number of cases examined. No gross malformations were reported in any of the stillborn infants.

Although a developing fetus could be exposed to heptachlor epoxide transplacentally, the existing data are inadequate to establish a relationship between exposure and human developmental toxicity (ATSDR Toxicological Profile for Heptachlor/Heptachlor Epoxide, 1992).

The oral RfD for heptachlor epoxide is listed as 1.3E-05 mg/kg-day in IRIS. This value is based on a chronic feeding study conducted in Beagle dogs. Dogs from 23 to 27 weeks of age were fed diets containing 0,0.5, 2.5, 5, or 7.5 ppm of heptachlor epoxide for 60 weeks. The critical effect noted in the study was treatment-related increases in liver-to-body weight ratios. Effects were noted in both males and females and a LEL (Lowest Effect Level) of 0.5 ppm was established. A NOEL (No Observed Effect Level) was not established in this study. An uncertainty factor of 1000 was used to account for inter- and intra-species differences and to account for the fact that a NOEL was not established in the study. The confidence associated with the oral RfD was low, reflecting that the principal study was of low quality and that the database on chronic toxicity is complete but consists of low quality studies. The subchronic RfD listed in HEAST is the same as the chronic RfD (1.3E-05 mg/kg-day) listed in IRIS.

Heptachlor epoxide is classified by the USEPA as Group B2 - Probable Human Carcinogen. Sufficient evidence exists from rodent studies in which liver carcinomas were induced in two strains of mice of both sexes and in CFN female rats. It is also structurally similar to several other liver carcinogens. There are no published epidemiologic evaluations of heptachlor epoxide. The oral slope factor listed in IRIS is 9.1E+00 $(mg/kg\text{-}day)^{-1}$. An inhalation unit risk of 2.63E-03 $\mu g/m^3$ was calculated from oral data.

Tetrahydrofuran

Experimental data on tetrahydrofuran is sparse and conflicting. Irritation of the upper respiratory tract and some injury to the liver and kidneys in a number of

experimental animals exposed to concentrations of tetrahydrofuran at greater than 3,000 ppm has been reported. Tetrahydrofuran is also irritating to the skin of rabbits when applied in aqueous solution at concentrations exceeding 20 percent. Concentrations greater than 25,000 ppm are required to produce anesthesia accompanied by a decrease in blood pressure and strong respiratory stimulation. Subsequent studies indicated that exposure to 200 ppm tetrahydrofuran daily for six-hours produced an observable effect on the pulse pressure of dogs within three or four weeks. However, no demonstrable histopathologic changes in the critical organs of the animals were observed, despite an exposure of nine weeks, followed by an additional three-weeks exposure at approximately twice this level. In this study, tetrahydrofuran did not irritate the skin and did not appear to be a skin sensitizer.

A Threshold Limit Value (TLV) of 200 ppm, as a time-weighted average, and a Short-Term Exposure Level (STEL) of 250 ppm have been recommended to protect against irritative effects during occupational exposure. There is a wide margin of safety between narcotic and systemic effects (ACGIH documentation for Tetrahydrofuran, 1986).

Neither IRIS or HEAST listed EPA-verified values for tetrahydrofuran.

No information on the toxicity of tetrahydrofuran could be located in the available literature.

Toluene

Toluene has the ability to dissolve fats. As a result, it causes pain when it comes in contact with the eye. Damage to the skin may occur upon dermal contact as a result of scattered loss of epithelial cells and solution of some of the fats that occur in these cells. Factory workers handling organic solvents such as toluene have been reported to have low sperm counts, abnormal sperm and varying degrees of infertility

(Thomas, 1991). Toluene has also been reported to cause a decrement of pulmonary function (FEV_1) (Gordon and Amdur, 1991).

A chronic oral RfD value of 2.0E-01 mg/kg-day is listed in IRIS. The subchronic oral RfD listed in HEAST is 2.0E-00 mg/kg-day. These values are based primarily on a subchronic gavage study in which rats were administered varying doses of toluene for 13 weeks. All animals receiving the highest dose (5000 mg/kg) died within the first week. In males, absolute and relative weights of both the liver and kidney were significantly increased at doses greater than or equal to 625 mg/kg. Absolute and relative weights of the liver, kidney, and heart were significantly increased at doses greater than or equal to 1250 mg/kg in females. The NOEL for this study was 312 mg/kg-day based on liver and kidney weight changes in male rats at 625 mg/kg. Because the exposure was for 5 days/week, this dose is converted to 223 mg/kg-day. The LOAEL was 625 mg/kg, which is 446 mg/kg-day when converted.

An uncertainty factor of 1,000 was applied to derive the RfD to account for inter- and intraspecies extrapolations, for subchronic to chronic extrapolation and for limited reproductive and developmental toxicity data. The level of confidence in the oral RfD was medium. This rating reflects that a sufficient number of animals/sex were tested in six dose groups, and that many parameters were studied, but that there was no reproductive study and that the oral studies were all subchronic. The chronic RfC of 4.0E-01 mg/m^3 has been verified according to the new interim methods for developing RfCs and is listed in IRIS. The subchronic inhalation RfC is listed in HEAST as 2.0E+00 mg/m^3.

USEPA has classified toluene as Group D - Not Classifiable as to Human Carcinogenicity. This classification reflects the lack of human carcinogenicity data and inadequate animal data. Therefore, no slope factor is listed.

Trichloropropene

Information on the toxicity of trichloropropene is sparse. Neither an oral RfD nor a slope factor is available for trichloropropene on IRIS. However, HEAST lists chronic and subchronic oral RfDs of 5.0E-03 mg/kg-day for trichloropropene. These values were based on a chronic study conducted in dogs. Inhalation of 18 mg/m^3 trichloropropene for 66 weeks resulted in eye irritation. However, this response was most likely a local response rather than a result of inhalation. An uncertainty factor of 100 is associated with the RfD. Trichloropropene has not been classified by the USEPA as to its carcinogenicity.

6.4.5 Uncertainties Associated with Toxicity Information

Toxicity information for many of the chemicals of concern for this risk assessment was limited. Therefore, varying degrees of uncertainty are associated with the toxicity values presented in this document. Sources of uncertainty associated with toxicity values used in this risk assessment arise from several sources.

A primary source of uncertainty results from the use of information obtained from alternate sources when USEPA-verified toxicity values are not available. It is difficult to assign a level of confidence to these values, although it is appropriate and necessary to use them. Greater uncertainty would result if chemicals that do not have published toxicity values were to be excluded from the assessment.

Physical and chemical descriptions of the exposure atmospheres, amounts to which individuals are exposed, and tissue retention patterns are generally not available for accidental human exposures. Therefore, studies conducted on laboratory animals (under controlled experimental conditions) must, of necessity, be used to provide the exposure, dose, and biological effects data needed to evaluate the toxicity of potentially hazardous materials to which humans may be exposed. However, there are striking

differences between laboratory animals and humans in anatomy and physiology. These differences are sources for variation in the toxic responses exhibited between different species. Complicating extrapolations from animals to man are differences in life span, body size, metabolic routes, and rates of exposure. Occasionally adjustments are made, on a case-by-case basis, for species differences in the rate of metabolism or retention within tissues. However, comparisons between species are usually made by use of standardized sizes or weights. These dose terms do not scale-up identically and are in some cases sources of uncertainty themselves.

Another source of uncertainty related to toxicity information is the use of dose-response information from effects observed at high doses to predict adverse health effects that may occur at the low levels to which humans are likely to be exposed in the environment. Sources of uncertainty occur in the USEPA potency estimates (slope factors) when they are applied to humans exposed to levels of putative carcinogens far below those administered to laboratory animals under experimental conditions. Many substances induce or enhance cancer in animals through processes for which a possible threshold can be identified. These effects usually only occur at very high doses and assuming that a lesser degree of the same effect occurs at lower doses is not necessarily an accurate portrayal of toxicity. This assumption may result in gross overestimation of the health risks associated with a particular chemical.

Two major factors that influence toxicity of chemicals are the duration and frequency of exposure. For many agents, the toxic effects following a single exposure are quite different from those produced by repeated and long-term exposures. In general, fractionation of the dose (or exposure) of a chemical reduces its toxicity. Therefore, a single exposure to a substance may produce an immediate severe effect and yet the same dose divided into multiple exposures may produce an attenuated response or no response at all. Such fractionation effects are generally the result of excretion between successive doses or to partial or full reversal of the injury produced by each exposure prior to the next exposure. Chronic (long-term) toxic effects occur if a chemical accumulates

(absorption exceeds excretion), if it produces irreversible toxic effects, or if there is insufficient time for the individual to recover from the injury within the exposure interval. Therefore, use of information obtained from short-term exposure studies to predict health effects in humans exposed on a long-term basis may be a source of uncertainty.

Uncertainties arise when information gathered in studies using homogenous animal populations (inbred strains) or healthy human populations (occupational exposures) to predict the effects that are likely to occur in the general human population. Human populations are a heterogenous group with variations in genetic constitution, diet, living environments (previous environmental exposures), activity patterns, and cultural patterns. All of these factors may influence metabolism, distribution of chemicals within the body, and susceptibility to the damaging effects of those chemicals. It is now well established that individuals exposed to several chemicals simultaneously or sequentially may exhibit altered pharmacologic or toxicologic responses. Interactions have been noted with respect to hepatotoxicity. For example, many of the chlorinated solvents induce enzymes in the liver that are involved in metabolism of chemicals. Therefore, an individual who is exposed to these chemicals may experience increased or decreased toxicity subsequent to exposure to other chemicals that undergo metabolism.

6.4.6 Summary of Toxicity Assessment

An understanding of the degree of uncertainty associated with toxicity information is an important part of interpreting and using that information to calculate toxicity values. The degree of confidence ascribed to toxicity values depends on both the quality of the critical study from which it was derived and the quantity of supporting data. USEPA-verified RfDs published in IRIS are accompanied by a statement of the confidence that the evaluators have in the RfD. A discussion of confidence ratings and USEPA's classification as to carcinogenicity are presented below.

Oral RfD values were available for 8 of the 13 individual contaminants of potential concern, only diesel did not have an oral RfD published in IRIS or HEAST. USEPA has derived a provisional oral RfD for diesel fuel. This value was obtained from a USEPA memorandum in response to a request for oral systemic and carcinogenic toxicity values for JP-4, JP-5, diesel fuel, and gasoline (AVGAS) found to contaminate soils and groundwater at McChord AFB (Wash Rack/Treatment), Tacoma, WA. The level of confidence in the seven RfDs given on IRIS ranged from low (two chemicals) to medium (five chemicals). One of the chemicals (trichloropropene) for which USEPA has published an RfD did not have a weight-of-evidence classification. This RfD was from HEAST which does not provide this information. Confidence in the provisional RfD for diesel fuel developed by the USEPA was low. Low confidence indicates that the toxicity value may change if additional toxicity data become available. Oral RfDs were not available and were not derived for five chemicals of potential concern.

An inhalation RfD was available only for toluene. A confidence rating cannot be ascribed to this value.

Eleven of the 13 contaminants of potential concern have been classified by the USEPA as to carcinogenic potential. Two chemicals were classified as Group D (Not Classifiable as to Human Carcinogenicity), indicating inadequate or no evidence of carcinogenicity. One of the chemicals of concern (β-BHC) was classified as Group C (Possible Human Carcinogen) based on limited evidence of carcinogenicity in animals and inadequate or lack of human data. One chemical (γ-BHC) was classified as Group B2/C carcinogens because of the uncertainty about its weight-of-evidence classification. Six chemicals were classified as Group B (Probable Human Carcinogen), indicating that there is sufficient evidence of the chemical's carcinogenicity in animals and inadequate or no evidence in humans. No chemicals were classified as Group A (Human Carcinogen).

USEPA-derived oral slope factors were available for eight of the 13 chemicals of potential concern that have been classified as Group A, B, or C carcinogens. Inhalation unit risk factors were available for five of the chemicals.

6.5 Risk Characterization

Risk characterization involves integrating the possible exposure pathways and estimated chemical intakes with the appropriate toxicity values to form quantitative and qualitative expressions of potential health risk. Measured contaminant exposure levels, as well as those predicted by fate and transport modeling, are compared to chemical-specific toxicity information to determine if current or future levels of contamination, at or near the site, warrant concern for human health. The following subsections briefly describe the methodology used to characterize risk, present noncarcinogenic and carcinogenic risk estimates for each exposure scenario, describe uncertainties associated with predicting risk, and identify the key chemicals of potential concern and exposure pathways that drive the risk assessment.

6.5.1 Risk Characterization Methodology

Carcinogenic Effects

The cancer slope factor converts estimated daily intakes to an estimate of incremental risk. Because the slope factor is often an upper 95th percentile confidence limit of the probability of a response based on experimental animal data and an assumption of linearity in the low dose portion of a dose-response curve, the carcinogenic risk estimate is generally an upper-bound estimate. This means "true risk" probably does not exceed the risk estimates generated in this assessment and is likely to be less than the predicted risk (USEPA, 1991).

For carcinogens, probabilities that an individual will develop cancer over a lifetime of exposure are estimated from projected exposure and the cancer slope factor. Exposure is quantified as the amount of a chemical available at the exchange boundary (i.e., skin, lungs, etc.) and available for absorption. The carcinogenic risk is calculated for each exposure scenario using the following equation:

$$\text{Risk} = \text{Exposure} \times \text{Slope Factor}.$$

The USEPA Superfund site remediation goal set forth in the National Contingency Plan (NCP) allows a cancer risk of 1.0E-5 (1 in 10,000) to 1.0E-8 (1 in 10,000,000). This range is designed to be protective of human health.

Noncarcinogenic Effects

To characterize potential noncarcinogenic effects, comparisons are made between projected intakes of substances over a specified time period and toxicity values, primarily oral, dermal, and inhalation reference doses. The ratio of exposure to toxicity value is the hazard quotient (HQ), and the HQ is calculated for each exposure scenario using the following equation:

$$\text{HQ} = \text{Exposure}/\text{RfD}.$$

Note that the HQ is not a statistical probability of a noncarcinogenic effect occurring and should not be interpreted as such. If the exposure level exceeds the appropriate toxicity value (i.e., the hazard quotient is greater than one), there may be cause for concern regarding the potential noncarcinogenic effects as set forth in the NCP.

6.5.2 Potential Exposure Scenarios

To ensure adequate characterization of risk that may be incurred at Landfill No. 3 presently or in the future, two chronic scenarios and one subchronic scenario were identified for human exposure. Land use is not expected to change in the foreseeable future and, therefore, present and future scenarios are assumed to be the same. The chronic exposure scenarios are: 1) off-site residential; and 2) on-site worker. The subchronic exposure scenario is for the on-site worker.

6.5.3 Combining Risks Associated with Chemicals and Exposure Pathways

For each scenario addressed in this risk assessment, the estimated carcinogenic risk for potential carcinogens is generated on a chemical-specific basis for each relevant pathway of exposure. The estimated risk is then summed for each chemical associated with a specific pathway to determine total risk by pathway. To determine the total exposure scenario risk, total risks for all pathways are summed.

The total risk number assumes that different carcinogens affect the same target organ to produce a cancer response, ignoring potential antagonistic or synergistic effects or disparate effects on different target organs. It also assumes that the individual in the exposure scenario is exposed to site-related contaminants at estimated exposure concentrations by all pathways that compose the scenario. The scenarios were constructed to include all potential pathways of exposure and it is possible for a single individual to be exposed by all pathways in a scenario. It is less likely, however, that a single individual will be exposed by each pathway at the conservatively estimated concentrations in the exposure media. For example, it is unlikely that an individual would be chronically exposed to maximum on/off-site ambient air concentrations and to maximum off-site concentrations predicted in agricultural products, because the sources of contamination are in different locations.

Likewise, the estimated hazard quotient for noncarcinogenic effects is generated on a chemical-by-chemical basis for each relevant pathway of exposure. The hazard quotients are then summed for each chemical associated with a specific pathway to determine the hazard index by pathway. The hazard indices for all pathways are finally summed to determine the total hazard index for the exposure scenario.

6.5.4 Documentation of Risk Characterization Results

The exposure and risk calculations were performed by a model (QSMART) to automate the exposure quantification and risk characterization process. The model automates the equations for chemical intake and generates chemical-specific hazard indices for noncarcinogenic effects using RfDs and chemical-specific carcinogenic risk estimates using cancer slope factors. The model sums the resultant values for chemicals in each of the exposure pathways, and across pathways, to generate a total scenario hazard index for noncarcinogenic effects and a total scenario cancer risk for carcinogenic effects. The program also calculates the percentage of the total risk contributed by each individual chemical and pathway of exposure. Appendix I contains the exposure and risk model output.

6.5.5 Risk Characterization for the Present Off-Site Residential Exposure Scenario

This scenario addresses pathways of exposure considered to be complete for off-site residents at the present time based on current use of the land and water. It assumes that land and water use will not change significantly over the duration of exposure. Land use in the immediate vicinity of CAFB is not expected to change in the foreseeable future and, therefore, current and future exposure scenarios and the risks associated with those scenarios are assumed to be similar.

The present off-site residential scenario assumes exposure to site-related contaminants at off-base locations via three pathways of exposure: 1) ingestion of fruits and vegetables; 2) ingestion of meats and dairy products and; 3) inhalation of volatiles and particulates in the ambient air. There is little likelihood that contaminants detected in the soil at Landfill No. 3 will impact off-site surface soils because there is no feasible migration pathway. Therefore, surface soil pathways are not applicable. Currently, one farmer uses surface water drawn from the playa lake for agricultural purposes. Widespread exposure resulting from dermal contact or inhalation of volatiles is unlikely because of the low concentration of volatiles in the playa lake water. Therefore, these pathways have not been included in this risk assessment. Although groundwater samples were not taken during the 1992 RI, groundwater modeling based on soil contaminant concentrations found at Landfill No. 3 indicated that future contamination of the groundwater with contaminants originating at Landfill No. 3 is likely to be insignificant. Therefore, the groundwater ingestion, dermal contact and inhalation of vapor phase chemicals during domestic use pathways have not been included in this assessment.

Exposure concentrations were based on: 1) modeled on-site concentrations in surface water for purposes of predicting uptake and accumulation in fruits, vegetables, meat, and dairy products; and 2) predicted contaminant concentrations in ambient air, based on concentrations in on-site surficial and deep soil samples.

Carcinogenic effects were estimated for adults only. Chronic exposure was evaluated for 1) an average case, using average or 50th percentile values for exposure parameters (e.g., contaminant concentration, body weight, intake rates, exposure duration and frequency); and 2) a reasonable maximum case, using the 95th (occasionally 90th) percentile values for exposure parameters when available and appropriate. Noncarcinogenic effects were evaluated for adults and children with both average and reasonable maximum exposure parameters.

Carcinogenic Effects

Toluene was the only chemical detected in surficial soil samples and is, therefore, the only contaminant estimated to exist in significant quantities in the playa lake water resulting from surface runoff from Landfill No. 3. Toluene has not been classified as to its carcinogenicity by the USEPA. The lack of an oral slope factor precluded evaluation of carcinogenic risks. Therefore, carcinogenic effects were not assessed for ingestion pathways. The lack of inhalation slope factors for contaminants predicted to enter the atmosphere via volatilization (diesel, hydrocarbons, tetrahydrofuran, trichloropropene) or wind entrainment of contaminated surface soil (bis(2-ethylheyxl)phthalate) precluded evaluation of carcinogenic risks associated with the inhalation pathway as well.

Noncarcinogenic Effects

Adults--Tables 6-8 and 6-9 characterize the average and reasonable maximum noncarcinogenic risk for adults, respectively. The total hazard index was 6E-5 for both average and reasonable maximum exposure. These hazard indices suggest that contaminants migrating off-site are not likely to cause adverse noncarcinogenic health effects in residential adults under current exposure conditions. Toluene contributed 100% of the average and reasonable maximum chemical-specific risk. The inhalation pathway contributed 99% of the total risk. USEPA recommends comparing the concentrations of chemicals in ambient air with a reference concentration (RfC) rather than a reference dose (RfD) for assessing inhalation exposure (USEPA, 1990). USEPA has been involved for the last three years in developing a method for derivation of inhalation RfCs. This decision was meant to more clearly distinguish between oral and inhalation exposure. Currently, RfCs are available only for a limited number of compounds. Inhalation RfCs are not available for other contaminants predicted to enter the atmosphere via volatilization (diesel, hydrocarbons, tetrahydrofuran,

Table 6-8

Average Non-Cancer Risk for Exposure to Toluene Associated with Landfill No. 3, Cannon AFB, New Mexico - Present Scenario

Scenario	Inhalation		Ingestion				Total	
	Chronic	Subchronic	Fruits	Vegetables	Meat	Dairy	Chronic	Subchronic
On-site Worker (Adult)	4.0E-06	2.0E-05	NA	NA	NA	NA	4.0E-06	2.0E-05
Off-site Residential (Adult)	6.0E-05	NA	5.0E-10	9.0E-10	7.0E-10	4.0E-08	6.0E-05	NA
Off-site Residential (Child)	6.0E-05	NA	2.0E-09	4.0E-09	2.0E-09	2.0E-07	6.0E-05	NA

NA - Not applicable

410 " 2445

Table 6-9

Reasonable Maximum Non-Cancer Risk for Exposure to Toluene Associated with Landfill No. 3, Cannon AFB, New Mexico - Present Scenario

Scenario	Inhalation		Ingestion				Total	
	Chronic	Subchronic	Fruits	Vegetables	Meat	Dairy	Chronic	Subchronic
On-site Worker (Adult)	1.0E-05	6.0E-05	NA	NA	NA	NA	1.0E-05	6.0E-05
Off-site Residential (Adult)	6.0E-05	NA	8.0E-10	2.0E-10	3.0E-09	2.0E-07	6.0E-05	NA
Off-site Residential (Child)	6.0E-05	NA	4.0E-09	7.0E-09	7.0E-09	7.0E-07	6.0E-05	NA

NA - Not applicable

4109 " 2146

trichloropropene) or wind entrainment of contaminated surface soil (bis(2-ethylheyxl)phthalate). Therefore, the contribution of these chemicals to the total noncarcinogenic risks associated with the inhalation pathway could not be assessed.

Children--Tables 6-8 and 6-9 illustrate the average and reasonable maximum noncarcinogenic risk for children, respectively. The hazard index was 6E-5 for both average and reasonable maximum exposure, suggesting that estimated exposure to children is unlikely to result in adverse noncarcinogenic health effects. Again, toluene contributed 100% of the chemical-specific risk. The inhalation pathway was responsible for 99% of the total risk for average exposure and 98% of the risk for reasonable maximum exposure. Ingestion of beef and dairy products each contributed 1% of the total risk.

6.5.6 Risk Characterization for the Present On-Site Worker Exposure Scenario

This scenario addresses pathways of exposure considered to be complete for an on-site worker. The assumption was made that present on-site contamination will not increase in the future and, therefore, exposure of future on-site workers to contaminants at Landfill No. 3 will be no greater than they are currently.

Surficial and deep soil samples were taken at the site. Laboratory analyses indicated contamination with a variety of chemicals, primarily pesticides, at depths ranging from 0 to 62 feet. The presence of snakes, small animals, and tall grasses indicates little or no disturbances by humans in the area. There are currently no invasive activities at the site and none are planned in the future. Therefore, direct human contact with contaminants in the soil is highly unlikely.

The on-site worker scenario assumes exposure to site-related contaminants via inhalation of contaminants emitted to the atmosphere above the site. Exposure concentrations were based on predicted concentrations at the site perimeter calculated

from measured concentrations in surficial and deep soil samples taken from 12 soil borings within the confines of the landfill. Concentrations of contaminants in the air are expected to be highest at this location.

On-site workers were assumed to be adults. Therefore, noncarcinogenic effects were evaluated for adults only with both average and reasonable maximum exposure parameters. Chronic (25 years) and subchronic (7 years) exposures were assessed. Carcinogenic effects were not evaluated because of the lack of inhalation slope factors.

Noncarcinogenic Effects

Tables 6-8 and 6-9 illustrate the noncarcinogenic risks resulting from average and reasonable maximum on-site worker chronic and subchronic exposure scenarios, respectively. The hazard indices for the average chronic and subchronic exposure scenarios were 4E-6 and 2E-5, respectively. The hazard indices associated with the reasonable maximum chronic and subchronic exposure scenarios were 1E-5 and 6E-5, respectively. Inhalation of toluene was responsible for 100% of the total risk associated with average and reasonable maximum exposure. The risks associated with the subchronic exposure scenarios were calculated from maximum hourly average concentrations and, therefore, resulted in higher hazard indices. Hourly averages are a function of local turbulence and meteorological conditions and represent the highest estimated air concentrations.

6.5.7 Major Factors Driving Risks

The results of this baseline risk assessment should not be interpreted as a characterization of absolute risk. The hazard index estimates discussed below highlight potential sources of risk at the site and support a no-action decision. Inhalation of toluene drives the noncarcinogenic risks. No carcinogenic risks associated with the site

were identified because of the lack of slope factors for the appropriate routes of exposure. Discussions of the magnitude and nature of risks that potentially exist at the site and the major uncertainties affecting the risk estimates are included.

Noncarcinogenic Effects

Exposure via inhalation of toluene volatilized to the atmosphere contributed the majority (98-99%) of the noncarcinogenic risk associated with Landfill No. 3. All of the estimated noncarcinogenic hazard indices for the various exposure scenarios were well below the Superfund site remediation goal of 1.0 for noncarcinogens. This indicates that adverse noncarcinogenic human health effects are unlikely to occur as a result of these exposure scenarios. However, these results should be interpreted with caution. USEPA recommends comparing the concentrations of chemicals in ambient air with a reference concentration (RfC) rather than a reference dose (RfD) for assessing inhalation exposure (USEPA, 1990). However, RfCs are currently available only for a limited number of compounds. An inhalation RfC is currently available for toluene on IRIS, but RfCs were not available for other contaminants predicted to enter the atmosphere via volatilization (diesel, hydrocarbons, tetrahydrofuran, trichloropropene) or wind entrainment of contaminated surface soil bis(2-ethylheyxl)phthalate. Therefore, these chemicals were not evaluated for their contribution to the total noncarcinogenic risk associated with inhalation of ambient air at the site perimeter, where concentrations are expected to be highest. It is possible any or all of these contaminants could contribute to noncarcinogenic risks associated with this exposure scenario.

Nature of Potential Risks at Landfill No. 3

Potential noncarcinogenic risks associated with inhalation of toluene are varied in nature. In humans, toluene is a known respiratory irritant with central nervous system (CNS) effects. Several studies demonstrated toxic effects at concentrations of approximately 100 ppb, which corresponds to a toluene concentration of 376 mg/m^3.

The maximum hourly estimated toluene concentrations (0.58 mg/m^3) at Landfill No. 3 are far below this concentration. Therefore, it can be safely assumed that on-site workers and off-site residents will not experience irritant or CNS effects as a result of inhalation of toluene originating from Landfill No. 3.

Diesel, hydrocarbons, tetrahydrofuran, and trichloropropene may also volatilize to the atmosphere and, therefore, may contribute to the noncarcinogenic risks associated with inhalation of ambient air at or near Landfill No. 3. Bis(2-ethyl-hexyl)phthalate may enter the atmosphere by wind entrainment of contaminated soil. Of these chemicals, trichloropropene and diesel are known to cause toxicity by the inhalation route in laboratory animals. A study conducted on dogs indicated that inhalation of 18 mg/m^3 trichloropropene for 66 weeks resulted in eye irritation. However, this response is not likely caused by inhalation, but rather a local response. Inhalation exposure of mice to marine diesel fuel (50-300 mg/m^3) resulted in hyaline droplet nephropathy and reduced body weight gain. Fatty liver changes and increased lung and liver inflammation were also noted. Similar studies have not been conducted in humans, but it is reasonable to assume that similar effects would be seen in humans exposed to these concentrations of trichloropropene and diesel. However, the maximum hourly estimated trichloropropene and diesel concentrations (5.8E-02 and 4.1E-04 mg/m^3, respectively) were well below the levels used in these studies. Therefore, it can be safely assumed that toxicity will not occur as a result of human exposure to trichloropropene or diesel originating from Landfill No. 3 via inhalation.

Several chemicals that were eliminated from the list of chemicals of concern based on detection frequency may be related to past site operations and/or disposal practices. Pesticide containers were burned in trenches and the remaining debris and ash were buried during the operation of Landfill No. 3. Therefore, pesticides, their metabolites, and hydrocarbons (formed during incomplete combustion of oils, garbage, and other organic substances) may be associated with past activities at this site.

The most important factors to consider when determining the potential effect of including (or deleting) a chemical in the risk assessment are its measured concentration and its toxicity. While hydrocarbons and pesticides may impact considerable toxicity following exposure to high levels, all of the chemicals eliminated from the list of chemicals of concern based on frequency of detection were present below their respective RLs. In addition, detected and modeled concentrations were generally below regulatory standards and guidelines developed to protect human health (see Table 6-10), so a qualitative risk assessment was performed for these chemicals. Toxicological profiles for chemicals that were eliminated from the list of chemicals of potential concern based on detection frequency that may have historical importance are presented in Appendix K.

Table 6-10 presents comparisons between Minimal Risk Levels (MRLs), Maximum Contaminant Levels (MCLs), Threshold Limit Values (TLVs), and levels of exposure expected to cause a cancer rate of 1 in 1,000,000 and modeled concentrations of contaminants that were eliminated from the list of chemicals of concern based on detection frequency. MRLs are derived from short-term animal studies and provide a basis for comparison with levels that humans might encounter in food. Individuals exposed to contaminants in food at concentrations below the MRL are not expected to experience adverse health effects. MCLs are enforceable standards under the Safe Drinking Water Act for specific contaminants in public water supplies. MCLs are defined as the maximum permissible level of a contaminant in water that is delivered to any user of a public water system. Generally, a MCL for a chemical represents the allowable lifetime (70 years) exposure to the compound for a 70 kg adult who is assumed to ingest 2 L of water a day. TLVs refer to airborne concentrations of chemicals. A TLV is the time-weighted average concentration of a particular chemical for a normal 8-hour workday and a 40-hour work week, to which nearly all workers may be repeatedly exposed, without adverse health effects. A cancer risk of 1 in 1,000,000 represents the Superfund site remediation goal for carcinogens. Levels of exposure to various contaminants expected to cause a cancer rate of 1 in 1,000,000 have been calculated

Table 6-10

Comparison of Regulatory and/or Advisory Status and Modeled Concentrations of Chemicals Eliminated from the List of Chemicals of Concern Based on Detection Frequency

Chemical	Regulatory or Advisory Status					Modeled Concentrations		
	MRL (food) (mg/kg unless other units specified)	MCL (mg/L)	TLV (µg/m³)	1 in 1E-06 Cancer Risk		Groundwater (mg/L)	Air (µg/m³)	Vegetables/ Beef (mg/kg)
				Water (mg/L)	Air (µg/m³)			
Benzene	<1E-06	5E-03	NA	1E-03	1E-01	0E+00	4E-08	0+00
Benzo(a)Anthracene	3.6	2E-04	NA	NA	NA	1.8E-05	0+00	1.8E-05
Benzo(a)Pyrene	1.E-02 (mg/kg-day)	2E-04	NA	5E-06	NA	6.2E-08	0+00	1.9E-07
Benzo(g,h,i)Perylene	3.6	NA	NA	NA	NA	0+00	0+00	0+00
Benzo(b)Fluoranthene	3.6	2E-04	NA	NA	NA	1.4E-32	0+00	4E-32
Benzo(k)Fluoranthene	3.6	NA	NA	NA	NA	6.4E-85	0+00	2E-84
Chrysene	3.6	2E-04	NA	NA	NA	2E-04 [a]	0+00	2E-04
1,1-Dichloroethene	3.2E-01	7E-03	2E+04	6E-05	2E-02	0+00	1.9E-07	0+00
Dieldrin	<1E-02 (mg/kg-day)	NA	2.5E+02	2E-06	2E-04	8.6E-09	0+00	6.9E-11
Di-n-Octylphthalate	NA	NA	NA	NA	NA	0+00	0+00	0+00
Endosulfan II	1.4E-02	NA	1E+02	NA	NA	0+00	0+00	0+00
Endrin	1E-02	2E-03	1E+02	NA	NA	1.1E-45	0+00	6.6E-46
Endrin Aldehyde	1E-02 (based on Endrin)	NA	NA	NA	NA	0+00	0+00	0+00

Table 6-10

(continued)

Chemical	Regulatory or Advisory Status					Modeled Concentrations		
	MRL (food) (mg/kg unless other units specified)	MCL (mg/L)	TLV (µg/m³)	1 in 1E-06 Cancer Risk		Groundwater (mg/L)	Air (µg/m³)	Vegetables/ Beef (mg/kg)
				Water (mg/L)	Air (µg/m³)			
Endrin Ketone	1E-02 (based on Endrin)	NA	NA	NA	NA	0+00	0+00	0+00
Ethylbenzene	NA	7E-01	4.3E+05	NA	NA	0+00	1E-08	0+00
Fluoranthene	3.6	NA	NA	NA	NA	7.3E-24	0+00	1.5E-24
Heptachlor	1E-01	4E-04	5E+02	8E-06	8E-04	7.2E-19	0+00	4.3E-20
2-Hexanone	NA	NA	2E+04	NA	NA	0+00	1.7E-07	0+00
Indeno(1,2,3-cd)Pyrene	3.6	2E-04	NA	NA	NA	2E-27	0+00	1.6E-26
Methoxychlor	NA	NA	1E+04	NA	NA	0+00	0+00	0+00
Phenanthrene	3.6	NA	NA	NA	NA	1E-41	2.8E-14	7E-43
PCBs	5E-03 (µg/kg-day)	5E-04	5E+02	5E-06	NA	0+00	0+00	0+00
Pyrene	3.6	NA	NA	NA	NA	1.1E-39	0+00	2.2E-40
2-,4,5-Trichlorophenol	NA	NA	NA	NA	NA	0+00	2E-07	0+00
Xylenes	NA	1E+01	4.3E+05	NA	NA	0+00	0+00	0+00

* - Meets but does not exceed MCL.

from cancer potency estimates by the Carcinogen Assessment Group (CAG) of the EPA and are available on IRIS. The values are presented in Table 6-10. It should be emphasized, however, that these calculations are based on animal testing and represent the upper limit of the probable risk to humans. Therefore, actual human risks are likely to be much lower.

The regulatory standards presented in Table 6-10 can be used as a screening method to evaluate the potential for adverse human health effects. With the exception of groundwater concentrations of chrysene, none of the modeled concentrations meet or exceed regulatory standards. The estimated chrysene concentration in groundwater meets the federal MCL established for this chemical but does not exceed the maximum permissible level allowable in water that is delivered to users of public water systems. Therefore, it is reasonable to conclude that serious adverse health effects are not likely to result from human exposure to the concentration of contaminants detected at Landfill No. 3 and that elimination of these chemicals from the quantitative risk assessment does not impact the validity of the baseline risk assessment.

6.5.8 Uncertainties Associated with Risk Characterization

Risk characterization results are not actual representations of risk but rather conditional estimates of risk that should be interpreted in light of the considerable number of assumptions required to quantify exposure, intake and dose-response. Uncertainties associated with identification of chemicals of potential concern, exposure assessment, and toxicity assessment all contribute to the level of confidence that can be placed on the risk characterization results. The uncertainties associated with these steps are discussed in previous sections of the report and are summarized in this section to facilitate interpretation of the risk characterization.

Identification of Contaminants of Potential Concern

Uncertainties associated with identification of chemicals of potential concern are discussed in detail in Section 6.2.9 (Data Limitations/Data Gaps) and include:

- Elimination of chemicals from the list of chemicals of concern that may have historical importance;
- Limitations of the analytical methods in detection of chemicals in the sampled soil below the instrument detection limit;
- Use of estimated values below the reporting limit and values close to reporting limits;
- Use of potentially false negatives; and
- The generally small number of samples and locations used to evaluate background concentrations of inorganic chemicals.

Exposure Assessment

Sources of uncertainty associated with the exposure assessment are discussed in Section 6.3.7. The primary sources of uncertainty that can limit the accuracy of the assessment were:

- Analytical data used to estimate release rates to the environment;
- The ability of fate and transport models to realistically simulate the behavior of chemicals in the environment; and
- The accuracy of exposure assumptions in representing the degree and magnitude of exposure.

Toxicity Assessment

Sources of uncertainty associated with the toxicity assessment are discussed in detail in Section 6.4.5. The major source of uncertainty is the lack of verified toxicity values for several chemicals and include:

- The lack of inhalation RfCs for bis(2-ethylhexyl)phthalate, diesel, tetrahydrofuran, and trichloropropene;
- Medium confidence rating for USEPA-verified RfC value for toluene;
- The lack of verified inhalation slope factors for all of the contaminants evaluated; and
- Inability to evaluate the possible synergistic or antagonistic effects of the mixture of chemicals detected at the site.

The most significant uncertainties associated with Risk Characterization are the limitations of analytical methods and fate and transport models, in addition to the lack of verifiable toxicity values. The majority of the tasks performed during risk assessment utilize conservative assumptions, which tend to result in overestimation of risk (use of estimated values below instrument detection levels; exposure assumptions which tend to be conservative). However, the limitations associated with analytical methods, the lack of EPA-verified toxicity values for some chemicals, and elimination of chemicals from the list of chemicals of concern could result in an underestimation of risks. Alternately, many of the uncertainties associated with risk assessment have the potential to either over- or underestimate the risk associated with exposure.

6.6 Environmental Evaluation

This section presents a qualitative evaluation of potential adverse impacts of contamination from Landfill No. 3 on critical habitats and endangered species in the

area. A description of the site, and the nature and extent of the contaminants of concern, were presented earlier in this report. Information for this qualitative evaluation was adapted from an ecological risk assessment of CAFB prepared by Woodward-Clyde and Consultants (Woodward-Clyde, 1992).

6.6.1 Local Ecology

CAFB and surrounding areas are part of the High Plains grasslands. Much of the natural grassland ecology has been disrupted by agricultural practices. Small trees and large shrubs are located around riparian areas and playa lakes. The areas surrounding CAFB are used for crops and livestock. Common agriculture crops grown in the area include wheat, sorghum, and alfalfa.

Landfill No. 3 is vegetated with a variety of grasses. The area is not maintained in any manner and the grass is tall. Grainfields lie east and south of the landfill separated by a narrow fence-line corridor. A playa lake is located 465 feet to the north on a down gradient (surface) slope from the landfill.

6.6.2 Threatened and Endangered Species

Table 6-11 lists threatened and endangered species, and species of high federal concern historically inhabiting areas within CAFB and surrounding Curry County. The Baird's sparrow and the ferruginous hawk are known to occur in this area. However, both birds are infrequent visitors in the area. The Baird's sparrow may be found in the area from early August and departs by November. The ferruginous hawk may occasionally feed on the base, but does not reside there because of lack of suitable nesting habitat.

Table 6-11

Federal- and State-Protected Animals Potentially Occurring in the Vicinity of Cannon AFB (Curry County), New Mexico

Common Name	Scientific Name	Federal Status	State Status
Birds			
Baird's sparrow	*Ammodramus bairdii*		Endangered (group 2)
Bald eagle	*Haliaeetus leucocephalus*	Endangered	Endangered (group 2)
Peregrine falcon	*Falco perigrinus*	Endangered	Endangered (group 1)
Long-billed curlew	*Numenius americnus*		Endangered (group 2)
Western snowy plover	*Charadrius aleandrus nivosis*		Endangered (group 2)
Mammals			
Black-footed ferret	*Mustela nigripes*	Endangered	Possibly Extinct
Swift fox	*Vulpes velox*		Endangered (group 2)
Reptiles			
Texas horned lizard	*Phrynosoma cornutum*		Endangered (group 2)

Endangered (group 1): Species whose prospects of survival or recruitment within the state are in jeopardy.
Endangered (group 2): Species whose prospects of survival or recruitment within the state are likely to become jeopardized in the foreseeable future.
Possible Extinct: Potentially no longer in existence in the state.
Source: Woodward-Clyde, 1992.

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6.6.3 Other Species

Small amphibians and reptiles are known to occupy areas in and around CAFB. The pocket gopher and the deer mouse are two common small mammals found at CAFB. Both animals inhabit areas covered with small shrubs and grasses similar to Landfill No. 3. Pheasant, quail, and migratory waterfowl feed on waste grains in the fields adjacent to the landfill. Waterfowl, mostly dabbler ducks, utilize the playa lake as a resting and feeding area during migration. The primary predators in the area are several species of raptors. Mated pairs of Mississippi Kite, recently removed from New Mexico's protected species list, have been spotted on the base defending territory near the golf course. Occasionally a big game animal such as the longhorn antelope, has been spotted in the vicinity.

6.6.4 Potential Exposure of Wildlife to Chemicals of Potential Concern

Animals that inhabit Landfill No. 3 and utilize nearby areas such as the playa lake are potentially exposed to chemicals originating from Landfill No. 3. It is not possible to assess effects on all species potentially impacted by exposure to chemicals of concern at Landfill No. 3. Ducks have been chosen as the indicator species to represent potential impacts of chemicals at the landfill on wildlife in the area. Dabbler ducks, which include gadwalls, mallards, pintails, shovelers and widgeons, make up the majority of wildlife found at CAFB. The ducks are not usually found at Landfill No. 3; however, they spend a majority of their time resting at the nearby playa lake and feeding in the adjacent grain fields.

6.6.5 Qualitative Risk Assessment

Potential exposure of ducks to contaminants originating at Landfill No. 3 is via surface water flowing downgradient to the playa lake, 465 meters to the north. Mean annual precipitation for the area is 15 inches with low monthly averages of 0.4 inches

during the winter months. Because of the low annual precipitation, few chemicals are likely to be carried from the landfill to the playa lake.

Ducks typically begin migrating through the Clovis area by late October and reach their highest numbers by mid-November. The majority of the ducks have continued southward migration by the time the lakes are frozen, which is usually at the beginning of January. During mild winters, ducks can remain in the vicinity until mid-March. The average amount of time ducks spend in the area is between 1.5 and 3 months.

Considering the low precipitation and the amount of time the ducks are found in the area, the level of exposure is likely to be low.

6.7 Conclusions for Baseline Risk Assessment

The baseline risk assessment for CAFB Landfill No. 3 indicates that there is little likelihood that adverse human health effects will occur as a result of exposure to contaminants originating at the site. Toluene has been classified by the USEPA as Group D - Not Classifiable as to Human Carcinogenicity, indicating that there is insufficient information to classify this compound as a carcinogen. Therefore, the lack of an oral slope factor for toluene precluded the evaluation of carcinogenic risks for ingestion pathways. The lack of inhalation slope factors for contaminants predicted to enter the atmosphere via volatilization (diesel, hydrocarbons, tetrahydrofuran, and trichloropropene) or wind entrainment of contaminated surface soil bis(2-ethylhexyl)phthalate precluded evaluation of carcinogenic risks associated with the inhalation pathway as well. While the lack of slope factors for the appropriate routes of exposure does not necessarily indicate the these chemicals are without carcinogenic potential, it does suggest that there is insufficient data to classify the chemicals as carcinogens.

All of the estimated noncarcinogenic hazard indices for the various exposure scenarios were well below the Superfund site remediation goal of 1.0 for noncarcinogens. Although these results indicate that adverse noncarcinogenic human health effects are unlikely to occur as a result of these exposure pathways, the results should be interpreted with caution. RfCs were not available for several contaminants predicted to enter the atmosphere (diesel, tetrahydrofuran, and trichloropropene), so these chemicals were not evaluated for their contribution to the total noncarcinogenic risk associated with inhalation of ambient air at the site perimeter. It is possible that these contaminants could contribute to the noncarcinogenic risks associated with the inhalation exposure scenario. Of these chemicals, only diesel is known to cause toxicity by the inhalation route in laboratory animals. It is not known whether similar effects would occur in humans, but according to model results, the maximum hourly estimated concentration of diesel in ambient air was well below the concentrations to which animals were exposed in this study. Therefore, it seems unlikely that toxicity will occur in human populations as a result of exposure to contaminants originating at Landfill No. 3.

Results from the environmental evaluation indicate that the level of exposure of wildlife known to inhabit the landfill and surrounding areas to contaminants present at the site is likely to be low. Therefore, the potential adverse impacts of contamination from Landfill No. 3 on critical habitats and endangered species in the area is judged to be insignificant.

APPENDIX C

LF-03 (SWMU 105) AND LF-04 (SWMU 104) CORRESPONDENCE

59 1 CEV File: M.C. 59 02 APR REC'D

March 23, 1993

General Richard N. Goddard, Commander
27 FW/CC
100 S. D.L. Ingram Blvd., Suite 100
Cannon Air Force Base, NM 88103-5214

CE

RE: Draft Remedial Investigation Reports, Landfills 3 and 4

Dear General Goddard:

STATE OF NEW MEXICO
ENVIRONMENT DEPARTMENT

The New Mexico Environment (NMED) has reviewed the Draft Remedial Investigation (RI) Reports for Landfills No. 3 and 4 dated January 1993. Our comments follow.

As was the case with the RFI reports for Landfills 1 and 2, we did not have an opportunity to review workplans before the investigation was done, and we have some reservations about the characterization of these landfills. We do not believe that enough information is available in these reports to ensure that there is no environmental threat from the landfills. However, because NMED is requiring a much more extensive investigation at Landfill 5, we believe effort is better expended in ensuring thoroughness in that investigation, and that results from it will be useful in guiding decisions about the other landfills.

NMED approves the RI Report for Landfills 3 and 4 with the explicit understanding that we reserve the right to require additional work at these and other base landfills if the investigation at Landfill 5 reveals the need for remedial action, or if contaminants are observed in ground water monitoring at Landfill 5, or at offsite wells or future monitor wells potentially affected by Landfills 3 or 4.

In my November letter I requested written confirmation that yearly sampling for nitrate, sulfate, chloride, and total dissolved solids (TDS) would be included in the sampling and analysis done at Landfill 5 and other CAFB monitor wells. To date I have not received the requested letter. I emphasize that NMED requires this sampling, and copies of results, under the Water Quality Control Commission regulations.

Thank you for the opportunity to comment on the RI Reports. If you have any questions do not hesitate to call me or David Morgan, NMED Installation Restoration Program liason staff.

Sincerely,

John J. Pfeil

John J. Pfeil
Environmental Specialist, DSMOA Program
Ground Water Protection and Remediation Bureau

xc: Kathleen M. Sisneros, Director, NMED WWMD
Benito J. Garcia, Chief, NMED HRMB
Richard Mayer, EPA Region 6
Capt. Mac Crawford, CAFB CES/CEV

Bruce King
Governor

Judith M. Espinosa
Secretary

Ron Curry
Deputy Secretary

Harold Runnels Building
1190 St. Francis Drive
P.O. Box 26110
Santa Fe, NM 87502
(505) 827-2850
FAX (505) 827-2836

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TX 75202-2733

595 1

NOV 19 1993

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Lance L. Smith, Colonel
Commander
United States Air Force
Headquarters 27th Fighter Wing (ACC)
Cannon Air Force Base, New Mexico 88103-5214

Re: Approval of the RFI Phase I Report for Landfills 3 and 4, Cannon Air Force Base, EPA ID NO. NM7572124454

Dear Colonel Smith:

Thank you for your response dated November 1, 1993, to the Environmental Protection Agency (EPA) addressing our concerns at the September 30, 1993, meeting attended by the EPA, Cannon AFB, the Corp of Engineers, and Radian Labs. The EPA hereby approves the RFI Report for Landfills 3 and 4 submitted on February 9, 1993. The approved RFI Report consists of the Phase I RFI Report received on February 2, 1993, and your comments to our Notices of Deficiencies dated April 13, 1993, August 4, 1993, and November 1, 1993.

(AR 592) (AR 563)

Before the EPA can approve a "No Further Action" on Landfills 3 and 4, Cannon Air Force Base must complete a monitoring well at the downgradient edge of Landfill 3 and Landfill 4 to the uppermost aquifer in order to analyze the groundwater for any contamination. Cannon Air Force Base must submit an RFI Phase II Workplan for this work within ninety (90) days of receipt of this letter.

If you have any questions, please contact Bill Hurlbut of my staff at (214) 655-8305.

Sincerely yours,

Jack Davis

for Allyn M. Davis, Director
Hazardous Waste Management Division (6H)

cc: Kathleen Sisneros, NMED

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443

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 27th FIGHTER WING (ACC)
CANNON AIR FORCE BASE, NEW MEXICO

File:
J.P. 179-23

443

17 JUN 1994

Christopher S. Long, Colonel, USAF
Commander, 27th Support Group
100 S DL Ingram Blvd Suite 200
Cannon AFB NM 88103-5217

Mr. William K. Honker
Chief, RCRA Permits Branch
U S EPA Region VI
1445 Ross Avenue Suite 1200
Dallas TX 75202-2733

Dear Mr. Honker

Attached is our response to your 20 May 94 letter concerning the Notice of Deficiency (NOD) issued with respect to the Landfill #3 and #4 Phase II RFI Report. In accordance with specific guidance obtained in an earlier telephone conversation with Mr. Bill Hurlbut of your staff, our response directly replies to the questions listed in the NOD.

With your consideration, we request the attached response and our RFI Report submittal of 18 May 94 become the approved RFI Report.

If you have any questions, please contact Mr. Sandi K. Mukherjee, P.E. at (505) 784-4639.

Sincerely

Christopher S. Long

CHRISTOPHER S. LONG, Colonel, USAF
Commander

Attachment:
Response to NOD

RESPONSE TO NOTICE OF DEFICIENCY

RFI PHASE II WORK PLAN FOR LANDFILLS 3 & 4
CANNON AFB, NEW MEXICO

1. The EPA stated in their letter dated November 19, 1994, that Cannon Air Force Base would be required to complete monitoring wells at the downgradient edge of Landfills 3 and 4. According to your work plan, the existing wells in the area are quite a distance from these units. How far away are they?

Response: The production well (Well No. 75) near Landfill #4 that has been proposed to be used for sampling is located 500' - 600' from Landfill #4. The two wells proposed to be investigated for Landfill #3 (Wells 25 and 36) are less than 50' and approximately 500' from the landfill, respectively.

2. Cannon AFB states in the work plan that the existing wells have screens which exceed 15 feet in length. How does Cannon AFB plan to decrease this screen length?

Response: As stated in the response to EPA comments dated May 13, 1994, the proposed new monitoring wells would have 30' screens. This length is necessary to allow these monitoring wells to be sampled for a number of years--15' screens would render these wells useless within a few years. Thirty foot screens would effectively double the length of time that these wells could be sampled, for the same cost.

If the comment was intended to refer to existing wells, it would be impractical to attempt to pack-off the screens during sampling to decrease effective screen length as vertical flow in the aquifer would be induced during pumping. Additionally, depending upon the length of time that these wells have been in place, the effective screen length may already be reduced, due to the falling water table.

3. Cannon AFB states in the work plan that 30 foot screens are required since the regional aquifer is subsiding at such a great rate. How fast is the regional aquifer subsiding?

Response: The only published information on the subsiding water table states that in the area of Clovis, a decline of 50' to 100' has been observed for the period from the 1930's to 1980's. It is prudent to expect that the majority of this decline has occurred in the most recent time frame, and that the rate of decline has increased with the popularity of irrigation. Therefore, conservatively it is expected that the rate of decline would be as much as 3' - 4' per year. This would make a well with a 15' screen useless after approximately three years.

4. When these wells are completed, the EPA will require that Cannon AFB sample them on an annual basis.

Response: Cannon AFB agrees that these wells will be sampled on an annual basis.

356 . 1. 09

File:
J.P. 17A 23

State of New Mexico
ENVIRONMENT DEPARTMENT
Hazardous & Radioactive Materials Bureau
2044 Galisteo
P.O. Box 26110
Santa Fe, New Mexico 87502
(505) 827-1557
Fax (505) 827-1544

GARY E. JOHNSON
GOVERNOR

MARK E. WEIDLER
SECRETARY

EDGAR T. THORNTON, III
DEPUTY SECRETARY

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CV 4/8
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Certified Mail
Return Receipt Requested

March 26, 1997

Michael J. Koerner, Colonel, USAF
Commander
100 S DL Ingram Blvd., Suite 100
Cannon Air Force Base, NM 88103-5714

Subject: Request for Additional Information:
Phase II RCRA Facility Investigation Report
Landfills Nos. 3 and 4 (SWMU Nos. 105 and 104/IRP Nos. LF-3 and LF-4)
Project CZQZ 91 7006
Cannon Air Force Base

Dear Colonel Koerner:

The Hazardous and Radioactive Materials Bureau (HRMB) of the New Mexico Environment Department (NMED) has reviewed the above-referenced Report, dated March, 1995, as required under the New Mexico Hazardous Waste Management Regulations.

HRMB has comments on the Phase I RFI Reports for both landfills which must be addressed in order for us to complete our review. These comments are enclosed as Attachment A.

Your response to these comments must be received by NMED within thirty (30) calendar days of receipt of this letter.

Colonel Koerner
March 26, 1997
Page 2

If you have any questions please contact Carl Will of my staff at 505-827-1561.

Sincerely,

Robert S. ("Stu") Dinwiddie, Manager
RCRA Permits Management Program
Hazardous and Radioactive Materials Bureau

Attachment

cc: Jerry Bober, HRMB
Steve Pullen, HRMB
Carl Will, HRMB
David Neleigh, EPA Region 6
Bob Sturdivant, EPA Region 6

ATTACHMENT A

COMMENTS ON CAFB
PHASE II RCRA FACILITY INVESTIGATION REPORT,
LANDFILLS NOS. 3 AND 4

March 26, 1997

1.2 Purpose and Scope of Report

The scope of the Report is limited to analysis of whether groundwater is impacted by the sites. However, no adequate eco-risk analysis has been done. The Phase I RFI Reports state that pesticides, herbicides, PCB's and other bioconcentrators were released from the landfills, including up to 670 ppb DDT at 15 feet underneath Landfill No. 4, and that there is potential exposure of wildlife to contaminants originating at the landfills via surface water flowing downgradient to the playa lake. An analysis must be completed to determine the probability of contaminants, including DDT and its derivatives, at existing concentrations and depths being transported to the surface of the landfills by evapotranspiration, soil-dwelling animals, or other mechanisms, and the probability of contaminant concentrations being transported to the playa lake via surface water run-off, shallow groundwater flow, or other mechanisms. Adequate analysis of transport of contaminants may require, among other things, additional sampling to more fully characterize existing concentrations and locations of contaminants, sampling or modeling to determine contaminant concentrations and surface water flow, and sampling of shallow groundwater tc determine contaminant concentration levels and groundwater flow towards the lake.

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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 27th FIGHTER WING (ACC)
CANNON AIR FORCE BASE, NEW MEXICO

13 MAY 1997

Lt Colonel C. A. Hale
Deputy Commander, 27th Support Group
110 E Sextant Avenue Suite 1098
Cannon AFB NM 88103-5323

Mr. Benito J. Garcia, Chief
Hazardous and Radioactive Materials Bureau
New Mexico Environment Department
2044 Galisteo Street
P O Box 26110
Santa Fe NM 87502

Dear Mr. Garcia

In response to your request for additional information on Landfills 3 & 4 (Solid Waste Management Units 105 & 104) of 26 Mar 97, the following is submitted. Attached are the comments from Mr. Sanford Hutsell, Remedial Project Manager, Ms. Judy Strawhecker, Industrial Hygienist, with the Army Corps of Engineers and from Mr. Dave Davis, Wildlife Biologist with the Natural Resources Branch of Cannon's Environmental Flight.

If you have any questions, please contact Mr. Sanford Hutsell at (505) 784-6378.

Sincerely

Charles A. Hale

CHARLES A. HALE, Lt Col, USAF
Deputy Commander, 27th Support Group

Attachments:
1. Comments from Mr. Hutsell
2. Comments from Ms. Strawhecker
3. Comments from Mr. Davis

cc:
NMED (C. Will)
NMED (S. Pullen)
NMED GW Bureau (J. Jacobs)
EPA Region VI (D. Neleigh)
HQ ACC CES/ESVW (M. Patterson)

DEPARTMENT OF THE AIR FORCE
27TH CIVIL ENGINEER SQUADRON (ACC)
CANNON AIR FORCE BASE NEW MEXICO

Memo for: NMED, Hazardous and Radioactive Materials Bureau

Subject: Answer to NMED comments on Landfills 3 and 4

From: Sanford Hutsell, Remedial Project Manager, CEVR

1. I disagree that Landfills 3 and 4 have been inadequately characterized. I refer to RCRA Facility Investigation, SWMU No. 105, Landfill No.3, IRP Site LF-3, Final Report Feb 1994 and RCRA Facility Investigation, SWMU No. 104, Landfill No. 4, IRP Site LF-4, Final Report Mar 1994. Both these reports present a brief discussion of ecological risk is Section 6.6 and conclude that the ecological risk is insignificant. Attached are Figures 5-2 for Landfill 3 and 5-1 and 5-2 for Landfill 4. Also attached is Table 5-4 for Landfill 3. The sample depth is given by the last number in the Sample ID. Tables 5-5 and 5-6 for Landfill 4 are attached which give the depth of the sample in a separate column.

2. The most significant concentration was a single hit of DDT of 670 ppb at 15 feet deep. Most of the sample depths with significant hits were below this depth as seen in the attached tables. This is below the root zone of most common plants so the mechanism of evapotranspiration considered by NMED which might transport contaminants to the surface appears highly unlikely.

3. Common soil dwelling animals do not burrow 15 feet deep and the amount of dirt excavated by animal burrows is so insignificant that this would appear to to be an unlikely mechanism of transport for bioaccumulating chemicals.

4. Surface water runoff does not appear to be a very viable transport mechanism to the playa lake. Both landfill 3 and landfill 4 are relatively flat, heavily vegetated, and do not slope appreciably towards the playa lake. Given the meager amount of rainfall in this area, it would probably take at least the 25 year storm event to dump enough water on these areas to cause appreciable runoff. This is not frequently enough realized to provide an efficient transport mechanism. The most significant runoff entering the playa lake that we have observed in the field is coming from agricultural lands off base to the east.

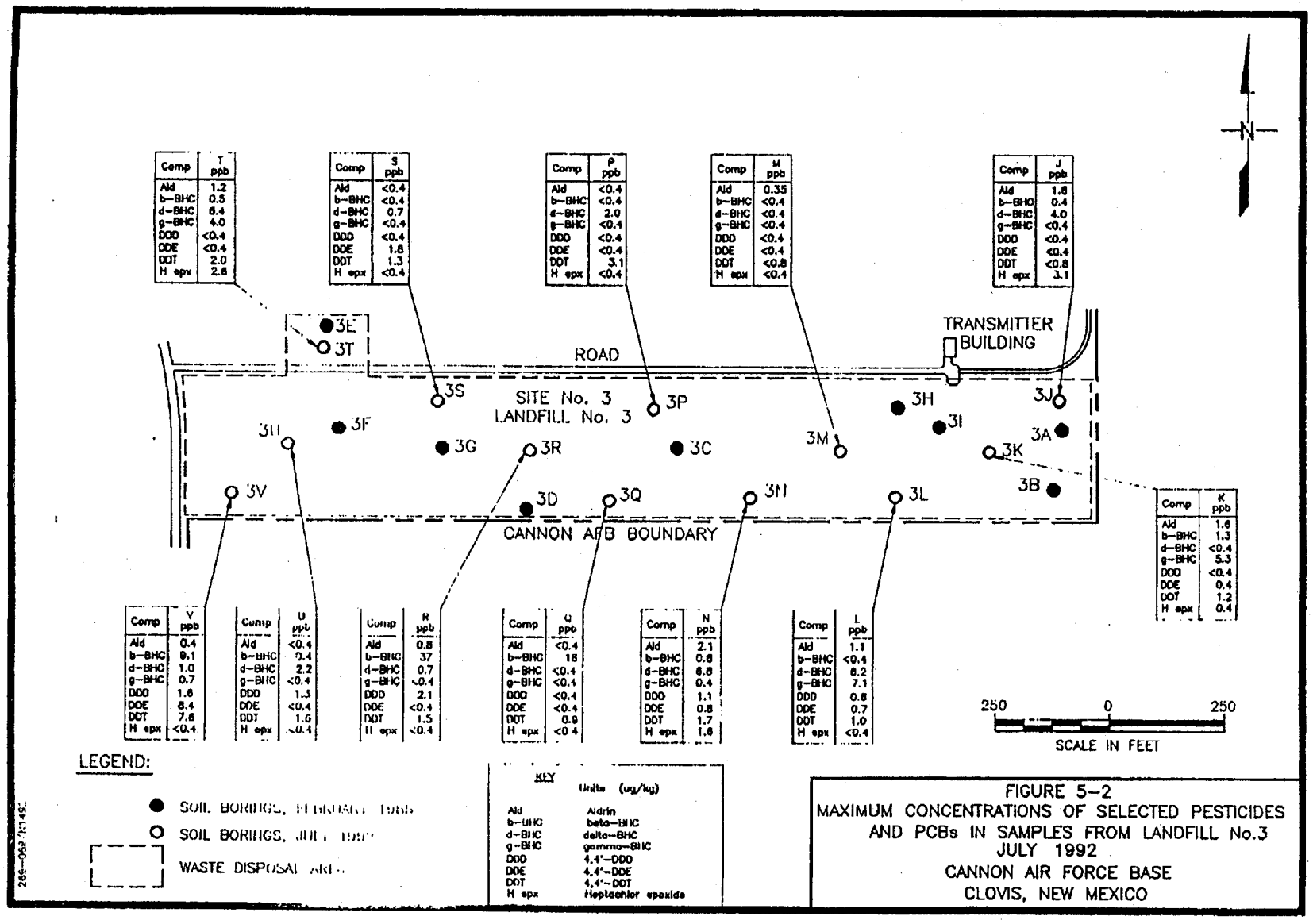
5. Shallow groundwater flow does not exist in this vicinity as speculated by NMED. This would have to be a perched water table and we have had no indications of a perched water table in this vicinity during the drilling of monitoring wells or numerous boreholes. The upper geologic column is all fine sands, silts, or caliche. The caliche is very discontinuous and is not a good confining layer. There are no continuous clay layers in the area to act as a confining layer to support a perched water table.

6. The amount of pesticides, herbicides, and PCBs released from the landfill is likely minimal as it is believed that only empty containers of these chemicals were disposed of. The only receptors of significance in the playa lake are the ducks and geese which stop over there during the winter. The lake contains no fish and the water quality is such that very minor amounts of bioaccumulator chemicals which might make their way there by whatever mechanism would be of minor consequence.

7. In the comments from Judy Strawhacker with the Corps of Engineer which follow, she quotes from Radian Reports which have been published long ago. I inserted my comments where I disagreed with the contractor's conclusions. My comments are based on field knowledge and experience while the report quoted was written by a contractor who had likely been to the base a time or two and was writing the report from far away.

Attachments:

1. Figure 5-2 for Landfill 3
2. Figure 5-1 for Landfill 4
3. Figure 5-2 for Landfill 4
4. Table 5-4 for Landfill 3
5. Table 5-5 for Landfill 4
6. Table 5-6 for Landfill 4



Comp	T ppb
Ald	1.2
b-BHC	0.5
d-BHC	6.4
g-BHC	4.0
DDD	<0.4
DDE	<0.4
DDT	2.0
H epx	2.6

Comp	S ppb
Ald	<0.4
b-BHC	<0.4
d-BHC	0.7
g-BHC	<0.4
DDD	<0.4
DDE	1.8
DDT	1.3
H epx	<0.4

Comp	P ppb
Ald	<0.4
b-BHC	<0.4
d-BHC	2.0
g-BHC	<0.4
DDD	<0.4
DDE	<0.4
DDT	3.1
H epx	<0.4

Comp	M ppb
Ald	0.35
b-BHC	<0.4
d-BHC	<0.4
g-BHC	<0.4
DDD	<0.4
DDE	<0.4
DDT	<0.8
H epx	<0.4

Comp	J ppb
Ald	1.6
b-BHC	0.4
d-BHC	4.0
g-BHC	<0.4
DDD	<0.4
DDE	<0.4
DDT	<0.8
H epx	3.1

Comp	K ppb
Ald	1.6
b-BHC	1.3
d-BHC	<0.4
g-BHC	5.3
DDD	<0.4
DDE	0.4
DDT	1.2
H epx	0.4

Comp	V ppb
Ald	0.4
b-BHC	9.1
d-BHC	1.0
g-BHC	0.7
DDD	1.6
DDE	6.4
DDT	7.6
H epx	<0.4

Comp	U ppb
Ald	<0.4
b-BHC	0.4
d-BHC	2.2
g-BHC	<0.4
DDD	1.3
DDE	<0.4
DDT	1.6
H epx	<0.4

Comp	R ppb
Ald	0.8
b-BHC	37
d-BHC	0.7
g-BHC	<0.4
DDD	2.1
DDE	<0.4
DDT	1.5
H epx	<0.4

Comp	Q ppb
Ald	<0.4
b-BHC	18
d-BHC	<0.4
g-BHC	<0.4
DDD	<0.4
DDE	<0.4
DDT	0.9
H epx	<0.4

Comp	N ppb
Ald	2.1
b-BHC	0.6
d-BHC	6.6
g-BHC	0.4
DDD	1.1
DDE	0.8
DDT	1.7
H epx	1.6

Comp	L ppb
Ald	1.1
b-BHC	<0.4
d-BHC	6.2
g-BHC	7.1
DDD	0.6
DDE	0.7
DDT	1.0
H epx	<0.4

FIGURE 5-2
MAXIMUM CONCENTRATIONS OF SELECTED PESTICIDES AND PCBs IN SAMPLES FROM LANDFILL No.3
JULY 1992
CANNON AIR FORCE BASE
CLOVIS, NEW MEXICO

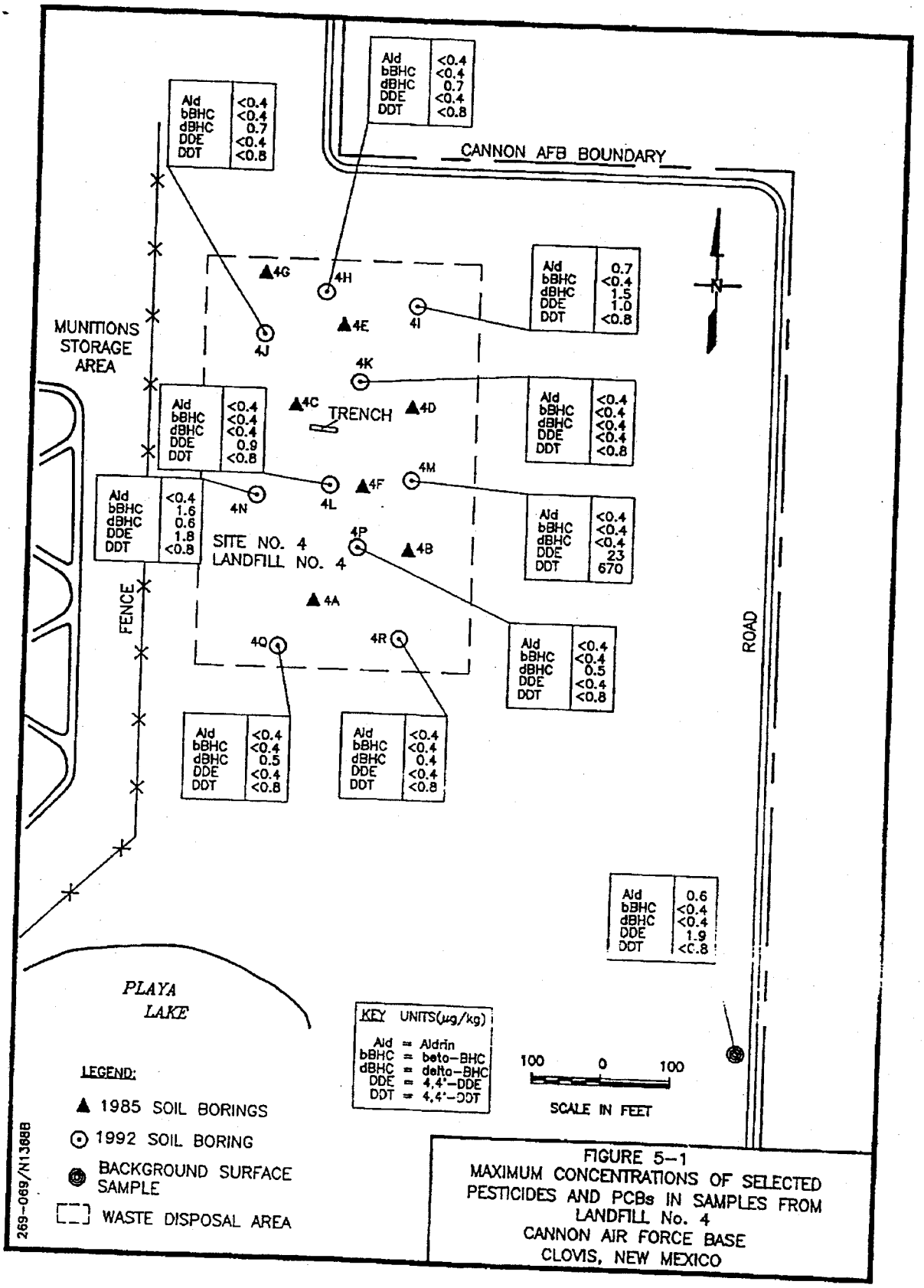


FIGURE 5-1
MAXIMUM CONCENTRATIONS OF SELECTED PESTICIDES AND PCBs IN SAMPLES FROM LANDFILL No. 4
CANNON AIR FORCE BASE
CLOVIS, NEW MEXICO

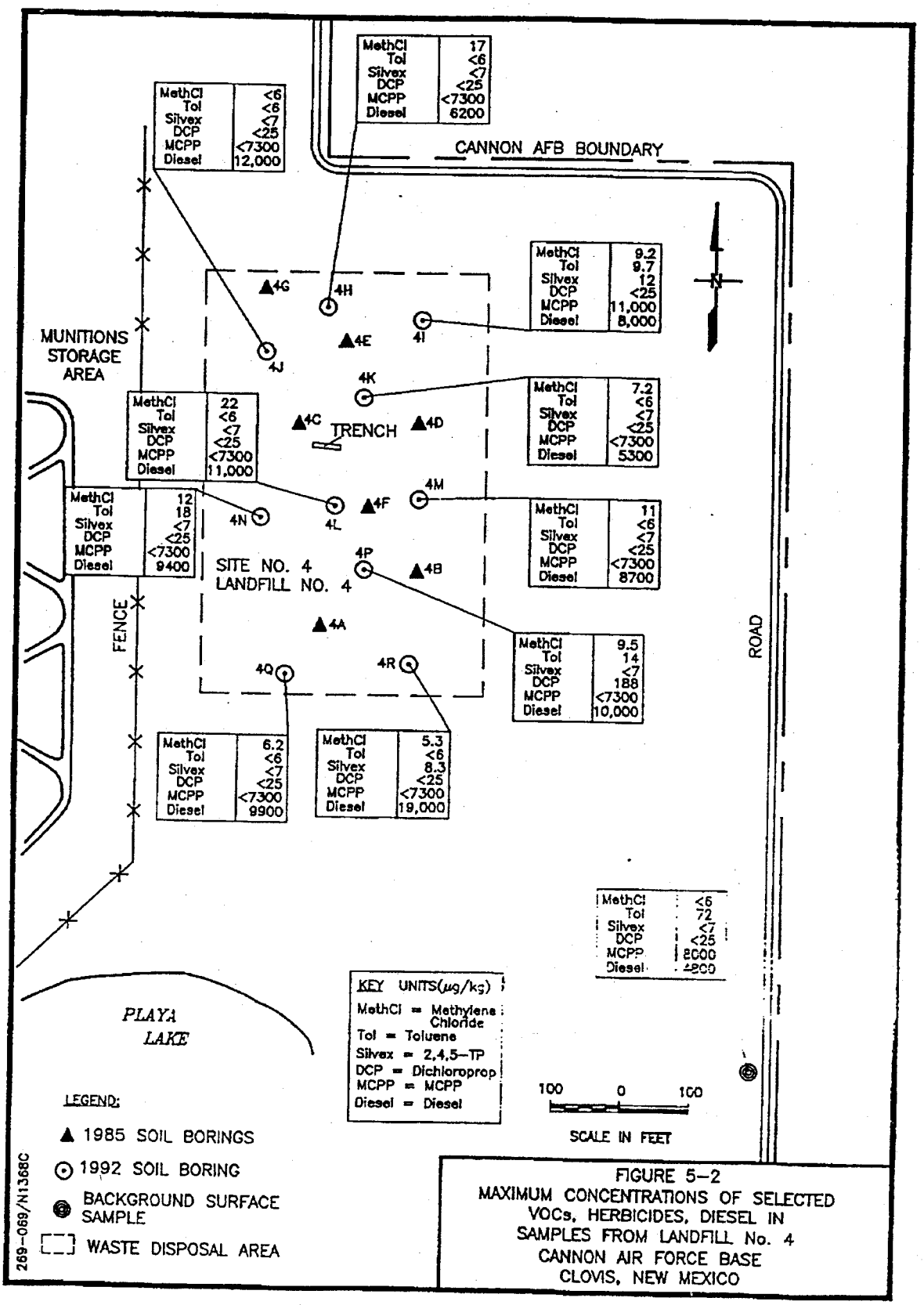


FIGURE 5-2
MAXIMUM CONCENTRATIONS OF SELECTED VOCs, HERBICIDES, DIESEL IN SAMPLES FROM LANDFILL No. 4
CANNON AIR FORCE BASE
CLOVIS, NEW MEXICO

Table 5-4

Organochlorine Pesticides and PCBs Found in Soil Samples From Landfill No. 3, Cannon AFB, New Mexico, 1992

Sample ID	Organochlorine Pesticides and PCBs (8080), µg/kg[a]													
	4,4'-DDD	4,4'-DDE	4,4'-DDT	Aldrin	Dieldrin	Endrin	Endrin Aldehyde	Heptachlor Epoxide	Methoxychlor	PCB-1254	PCB-1260	beta-BHC	delta-BHC	gamma-BHC
CAN-105-3J-21	<0.36	<0.36	<0.72	0.72 G@	<0.36	<0.36	<0.72	3.1 G	<1.8	<7.2	<7.2	<0.36	4 G	<0.36
CAN-105-3J-30	<0.36	<0.36	<0.73	0.51 G@	<0.36	<0.36	<0.73	<0.36	<1.8	<7.3	<7.3	<0.36	3.8 G	<0.36
CAN-105-3J-35	<0.35	<0.35	<0.70	0.75 G@	<0.35	<0.35	<0.70	<0.35	<1.7	<7.0	<7.0	<0.35	<0.35	<0.35
CAN-105-3J-52.5	<0.35	<0.35	<0.69	1.6 G@	<0.35	<0.35	<0.69	<0.35	<1.7	<6.9	<6.9	<0.35	<0.35	<0.35
CAN-105-3J-61	<0.34	<0.34	<0.68	0.6 G@	<0.34	<0.34	<0.68	<0.34	<1.7	<6.8	<6.8	<0.34	3.8 G	<0.34
CAN-105-3K-20	<0.36	<0.36	<0.71	<0.36	<0.36	<0.36	<0.71	<0.36	<1.8	<7.1	<7.1	1.3 G@	<0.36	2.8 G
CAN-105-3K-25	<0.38	<0.38	1.2 G@	<0.38	<0.3	<0.38	<0.75	<0.38	<1.9	<7.5	<7.5	<0.38	<0.38	<0.38
CAN-105-3K-30	<0.36	<0.36	<0.72	<0.36	<0.36	<0.36	<0.72	<0.36	<1.8	<7.2	<7.2	<0.36	<0.36	5.3 G
CAN-105-3K-36	<0.35	<0.35	1 G@	1.2 G@	<0.35	<0.35	<0.70	<0.35	<1.8	<7.0	<7.0	<0.35	<0.35	<0.35
CAN-105-3K-DUP10 (3K-40)	<0.35	<0.35	<0.70	<0.35	<0.35	<0.35	<0.70	<0.35	<1.8	<7.0	<7.0	<0.35	<0.35	0.65 @
CAN-105-3K-45	<0.35	<0.35	<0.71	<0.35	<0.35	<0.35	<0.71	<0.35	<1.8	<7.1	<7.1	<0.35	<0.35	0.75 @
CAN-105-3K-51	<0.36	<0.36	<0.72	0.65 G@	<0.36	<0.36	<0.72	0.42 G@	<1.8	<7.2	<7.2	<0.36	<0.36	<0.36
CAN-105-3K-59	<0.34	<0.34	<0.69	0.54 G@	<0.34	<0.34	<0.69	<0.34	<1.7	<6.9	<6.9	<0.34	<0.34	<0.34
CAN-105-3L-23.5	0.6 G@	0.71 @	5.1	<0.37	<0.37	<0.37	<0.74	<0.37	<1.9	<7.4	<7.4	<0.37	<0.37	<0.37

Table 5-4

(Continued)

Sample ID	Organochlorine Pesticides and PCBs (8080), µg/kg*													
	4,4'-DDD	4,4'-DDE	4,4'-DDT	Aldrin	Dieldrin	Endrin	Endrin Aldehyde	Heptachlor Epoxide	Methoxychlor	PCB-1254	PCB-1260	beta-BHC	delta-BHC	gamma-BHC
CAN-105-3L-25	<0.39	<0.39	<0.77	0.42 G@	<0.39	<0.39	<0.77	<0.39	<1.9	<7.7	<7.7	<0.39	3.2 G	<0.39
CAN-105-3L-56	<0.35	<0.35	<0.69	<0.35	<0.35	<0.35	<0.69	<0.35	<1.7	<6.9	<6.9	<0.35	5.9 G	7.1 G
CAN-105-3L-61	<0.35	<0.35	0.97 @	1.1 G@	<0.35	<0.35	<0.70	<0.35	<1.7	<7.0	<7.0	<0.35	6.2 G	1.5 @
CAN-105-3M-40	<0.35	<0.35	<0.69	0.35 G@	<0.35	<0.35	<0.69	<0.35	<1.7	<6.9	<6.9	<0.35	<0.35	<0.35
CAN-105-3MM-21	<0.36	<0.36	<0.72	<0.36	<0.36	<0.36	<0.72	<0.36	<1.8	110	<7.2	<0.36	<0.36	<0.36
CAN-105-3N-27	1.1 G@	0.61 G@	1.7 @	2.1 G	<0.36	<0.36	0.81 @	<0.36	<1.8	<7.1	<7.1	<0.36	<0.36	<0.36
CAN-105-3N-30	<0.36	<0.36	<0.72	<0.36	<0.36	<0.36	0.86 @	<0.36	<1.8	<7.2	<7.2	<0.36	<0.36	<0.36
CAN-105-3NN-20	<0.36	<0.36	<0.72	<0.36	<0.36	<0.36	<0.72	<0.36	<1.8	<7.2	<7.2	0.64 G@	<0.36	0.36 @
CAN-105-3NN-45	<0.37	<0.37	<0.73	<0.37	<0.37	<0.37	<0.73	<0.37	<1.8	<7.3	<7.3	<0.37	1.3 @	<0.37
CAN-105-3NN-61	<0.35	<0.35	0.83 @	<0.35	<0.35	<0.35	<0.70	1.6 G@	<1.7	<7.0	<7.0	<0.35	6.6 G	<0.35
CAN-105-3P-40	<0.36	<0.36	3.1 G@	<0.36	0.89 G@	<0.36	<0.71	<0.36	<1.8	<7.1	<7.1	<0.36	<0.36	<0.36
CAN-105-3P-45	<0.35	<0.35	0.88 G@	<0.35	<0.35	<0.35	<0.71	<0.35	<1.8	<7.1	<7.1	<0.35	<0.35	<0.35
CAN-105-3P-51	<0.35	<0.35	<0.69	<0.35	<0.35	<0.35	<0.69	<0.35	<1.7	<6.9	<6.9	<0.35	2 G	<0.35
CAN-105-3P-DUP7 (3P-56)	<0.34	<0.34	1.2 G@	<0.34	<0.34	<0.34	<0.69	<0.34	<1.7	<6.9	<6.9	<0.34	<0.34	<0.34
CAN-105-3Q-26	<0.39	<0.39	0.88 G@	<0.39	<0.39	<0.39	<0.77	<0.39	<1.9	<7.7	<7.7	<0.39	<0.39	<0.39
CAN-105-3Q-36	<0.35	<0.35	0.76 G@	<0.35	<0.35	<0.35	<0.70	<0.35	<1.7	<7.0	<7.0	<0.35	<0.35	<0.35
CAN-105-3Q-41	<0.35	<0.35	0.78 G@	<0.35	<0.35	<0.35	<0.70	<0.35	<1.7	<7.0	<7.0	15 G	<0.35	<0.35
CAN-105-3Q-46	<0.36	<0.36	0.8 @	<0.36	<0.36	<0.36	<0.72	<0.36	<1.8	<7.2	<7.2	18 G	<0.36	<0.36

Table 5-4

(Continued)

Sample ID	Organochlorine Pesticides and PCBs (8080), µg/kg*													
	4,4'-DDD	4,4'-DDE	4,4'-DDT	Aldrin	Dieldrin	Endrin	Endrin Aldehyde	Heptachlor Epoxide	Methoxychlor	PCB-1254	PCB-1260	beta-BHC	delta-BHC	gamma-BHC
CAN-105-3Q-53.5	<0.35	<0.35	0.8 G@	<0.35	<0.35	<0.35	<0.69	<0.35	<1.7	<6.9	<6.9	<0.35	<0.35	<0.35
CAN-105-3R-25	0.75 G@	<0.36	<0.72	0.75 G@	<0.36	<0.36	<0.72	<0.36	2.2 @	<7.2	<7.2	37 G	0.72 @	<0.36
CAN-105-3R-31	<0.36	<0.36	<0.71	<0.36	<0.36	<0.36	<0.71	<0.36	<1.8	<7.1	<7.1	<0.36	0.6 G@	<0.36
CAN-105-3R-32.5	2.1 G	<0.39	1.5 @	<0.39	<0.39	<0.39	<0.78	<0.39	<1.9	<7.8	<7.8	<0.39	0.71 G@	<0.39
CAN-105-3R-35	<0.38	<0.38	1 G@	<0.38	<0.38	<0.38	<0.76	<0.38	<1.9	<7.6	<7.6	<0.38	<0.38	<0.38
CAN-105-3R-41	<0.38	<0.38	1 G@	<0.38	<0.38	<0.38	<0.76	<0.38	<1.9	<7.6	<7.6	<0.38	<0.38	<0.38
CAN-105-3R-DUP5 (3R-52.5)	<0.35	<0.35	1 @	<0.35	<0.35	<0.35	<0.69	<0.35	<1.7	<6.9	<6.9	<0.35	0.57 G@	<0.35
CAN-105-3R-61	<0.35	<0.35	0.93 G@	<0.35	<0.35	<0.35	<0.70	<0.35	<1.7	<7.0	<7.0	<0.35	0.58 G@	<0.35
CAN-105-3S-21	<0.37	1.8 @	<0.74	<0.37	2.6 G	<0.37	<0.74	<0.37	<1.8	<7.4	160	<0.37	0.6 @	<0.37
CAN-105-3S-25	<0.38	<0.38	1 G@	<0.38	<0.38	<0.38	<0.76	<0.38	<1.9	<7.6	<7.6	<0.38	<0.38	<0.38
CAN-105-3S-36	<0.36	<0.36	0.94 G@	<0.36	<0.36	<0.36	<0.71	<0.36	<1.8	<7.1	<7.1	<0.36	0.59 G@	<0.36
CAN-105-3S-43	<0.38	<0.38	1.3 @	<0.38	<0.38	<0.38	<0.77	<0.38	<1.9	<7.7	<7.7	<0.38	0.69 G@	<0.38
CAN-105-3S-51	<0.35	<0.35	0.9 G@	<0.35	<0.35	<0.35	<0.69	<0.35	<1.7	<6.9	<6.9	<0.35	0.56 G@	<0.35
CAN-105-3T-20	<0.36	<0.36	0.94 @	<0.36	<0.36	<0.36	<0.72	2.6 G	<1.8	<7.2	<7.2	<0.36	6.4 G	<0.36
CAN-105-3T-28.5	<0.35	<0.35	<0.70	0.9 G@	<0.35	<0.35	<0.70	<0.35	<1.8	<7.0	<7.0	<0.35	5.5 G	<0.35
CAN-105-3T-31	<0.36	<0.36	<0.71	<0.36	<0.36	<0.36	<0.71	<0.36	<1.8	<7.1	<7.1	<0.36	<0.36	0.81 @
CAN-105-3T-35	<0.36	<0.36	<0.72	<0.36	<0.36	<0.36	<0.72	<0.36	<1.8	<7.2	<7.2	<0.36	<0.36	0.69 @
CAN-105-3T-40	<0.36	<0.36	0.75 @	<0.36	<0.36	<0.36	<0.72	<0.36	<1.8	<7.2	<7.2	0.37 G@	<0.36	1.3 G@
CAN-105-3T-46	<0.35	<0.35	0.75 @	1.2 G@	<0.35	<0.35	<0.70	<0.35	<1.8	<7.0	<7.0	<0.35	<0.35	1.5 G@

Table 5-4

(Continued)

Sample ID	Organochlorine Pesticides and PCBs (8080), µg/kg[a]													
	4,4'-DDD	4,4'-DDE	4,4'-DDT	Aldrin	Dieldrin	Endrin	Endrin Aldehyde	Heptachlor Epoxide	Methoxychlor	PCB-1254	PCB-1260	beta-BHC	delta-BHC	gamma-BHC
CAN-105-3T-48	<0.35	<0.35	<0.69	<0.35	<0.35	<0.35	<0.69	<0.35	<1.7	<6.9	<6.9	<0.35	<0.35	3.8 G
CAN-105-3T-52	<0.39	<0.39	1.5 G@	<0.39	<0.39	<0.39	<0.77	<0.39	<1.9	<7.7	<7.7	0.41 G@	<0.39	2.7 G
CAN-105-3T-56	<0.36	<0.36	2 G@	<0.36	<0.36	<0.36	<0.73	<0.36	<1.8	<7.3	<7.3	0.52 G@	5.5 G	4 G
CAN-105-3T-DUP13 (3T-60)	<0.35	<0.35	0.81 @	1.2 G@	<0.35	<0.35	<0.70	<0.35	<1.7	<7.0	<7.0	0.49 G@	6.2 G	2 G
CAN-105-3T-60	<0.35	<0.35	<0.70	<0.35	<0.35	<0.35	<0.70	<0.35	<1.7	<7.0	<7.0	<0.35	<0.35	3.4 G
CAN-105-3U-20	1.3 G@	<0.37	1.2 @	<0.37	<0.37	<0.37	<0.73	<0.37	<1.8	<7.3	<7.3	<0.37	0.61 G@	<0.37
CAN-105-3U-25	<0.36	<0.36	1.6 @	<0.36	<0.36	<0.36	<0.72	<0.36	<1.8	<7.2	<7.2	<0.36	0.74 G@	<0.36
CAN-105-3U-DUP2 (3U-30)	<0.36	<0.36	1.6 @	<0.36	<0.36	<0.36	<0.72	<0.36	<1.8	<7.2	<7.2	<0.36	0.7 G@	<0.36
CAN-105-3U-30	<0.38	<0.38	1.1 G@	<0.38	<0.38	<0.38	<0.75	<0.38	<1.9	<7.5	<7.5	<0.38	0.62 G@	<0.38
CAN-105-3U-32.5	<0.36	<0.36	1 G@	<0.36	<0.36	<0.36	<0.72	<0.36	<1.8	<7.2	<7.2	<0.36	0.59 G@	<0.36
CAN-105-3U-35	<0.37	<0.37	<0.73	<0.37	<0.37	<0.37	<0.73	<0.37	<1.8	<7.3	<7.3	<0.37	2.2 G	<0.37
CAN-105-3U-43.5	<0.39	<0.39	<0.77	<0.39	<0.39	<0.39	<0.77	<0.39	<1.9	<7.7	<7.7	0.42 G@	<0.39	<0.39
CAN-105-3U-55	<0.35	<0.35	<0.70	<0.35	<0.35	<0.35	<0.70	<0.35	<1.7	<7.0	<7.0	0.41 G@	<0.35	<0.35
CAN-105-3V-25.5	<0.37	<0.37	1 @	<0.37	<0.37	<0.37	<0.73	<0.37	<1.8	<7.3	<7.3	<0.37	0.62 @	<0.37
CAN-105-3V-45	<0.36	<0.36	1.2 @	<0.36	<0.36	<0.36	<0.71	<0.36	<1.8	<7.1	<7.1	<0.36	0.59 G@	<0.36
CAN-105-3V-52	<0.35	<0.35	1.1 G@	<0.35	<0.35	<0.35	<0.70	<0.35	<1.8	<7.0	<7.0	<0.35	0.65 @	<0.35

Table 5-4

(Continued)

Sample ID	Organochlorine Pesticides and PCBs (8080), µg/kg*													
	4,4'-DDD	4,4'-DDE	4,4'-DDT	Aldrin	Dieldrin	Endrin	Endrin Aldehyde	Heptachlor Epoxide	Methoxychlor	PCB-1254	PCB-1260	beta-BHC	delta-BHC	gamma-BHC*
CAN-105-3V-50	<0.35	<0.35	1.4 G@	<0.35	<0.35	<0.35	<0.71	<0.35	<1.8	<7.1	<7.1	<0.35	0.74 G@	<0.35
CAN-105-3V-55	<0.35	<0.35	1.6 @	<0.35	<0.35	<0.35	<0.69	<0.35	<1.8	<6.9	<6.9	<0.35	<0.35	<0.35
CAN-105-3V-61	1.6 G@	<0.34	1.2 @	<0.34	<0.34	<0.34	<0.69	<0.34	<1.7	<6.9	<6.9	<0.34	0.62 G@	<0.34
CAN-105-3VV-30	<0.35	8.4	7.6	0.41 G@	<0.35	6.1 G	<0.70	<0.35	4.2 G@	<7.0	<7.0	9.1 G	1 @	0.68 @
CAN-105-3VV-35	1.5 G@	0.54 G@	1.4 @	<0.35	<0.35	<0.35	<0.71	<0.35	<1.8	<7.1	<7.1	<0.35	0.61 @	<0.35
CAN-105-3VV-41	<0.35	<0.35	<0.70	<0.35	<0.35	<0.35	<0.35	<0.35	<1.8	<7.0	<7.0	<0.35	0.7 G@	<0.35

* - Heptachlor and alpha-BHC were not detected above the reporting level in the field samples, and are therefore not included in this table. These compounds were included in the risk assessment based on J-flagged data. J-flagged data are given in Appendix D.

@ - Reported value is within a factor of five of the detection limit.

G - Second column confirmation denotes the presence of this compound but the result is estimated due to matrix interferences.

Table 5-5

Organochlorine Pesticides and PCBs Found in Soil Samples from Cannon Landfill No. 4, 1992

Sample ID	Depth, ft	Organochlorine Pesticides and PCBs (8080), µg/kg										
		4,4'-DDD	4,4'-DDE	4,4'-DDT	Aldrin	Endosulfan II	Endrin	Heptachlor Epoxide	PCB-1260	beta-BHC	delta-BHC	gamma-BHC
CAN-104-4H-01	15-16.7	<0.38	<0.38	<0.75	<0.38	<1.1	<0.38	<0.38	<7.5	<.38	0.57 @	<0.38
CAN-104-4H-13[a]	15.16.7	<0.38	<0.38	<0.75	<0.38	<1.1	<0.38	<0.38	<7.5	<0.38	0.7 @	<0.38
CAN-104-4H-02	20-20.7	<0.36	<0.36	<0.73	<0.36	<1.1	<0.36	33G	7.3 @	<0.36	<0.36	0.62G @
CAN-104-4H-09	52.5-54	<0.35	<0.35	<0.70	<0.35	<1.1	<0.35	16G	<7.0	<0.35	0.38 @	<0.35
CAN-104-4I-07	47.5-48.8	<0.35	<0.35	<0.70	<0.35	<1.1	<0.35	<0.35	<7.0	<0.35	<0.35	1
CAN-104-4I-13[b]	47.5-48.8	<0.35	<0.35	<0.70	<0.35	<1.1	<0.35	<0.35	<7.0	<0.35	<0.35	<0.35
CAN-104-4I-10	55-57	<0.34	<0.34	<0.69	<0.34	<1.0	<0.34	<0.34	<6.9	<0.34	1.5G @	0.95G @
CAN-104-4II-01	Surface	<0.36	0.97 @	<0.73	0.67G @	<1.1	<0.36	<0.36	<7.3	<0.36	<0.36	<0.36
CAN-104-4J-04	27.5-28	<0.35	<0.35	<0.71	<0.35	<1.1	<0.35	<0.35	<7.1	<0.35	0.71 @	<0.35
CAN-104-4K-03	25-27	<0.36	<0.36	<0.73	<0.36	<1.1	<0.36	<0.36	<7.3	<0.36	<0.36	0.38 @
CAN-104-4K-04	30-32	<0.36	<0.36	<0.72	<0.36	<1.1	<0.36	<0.36	<7.2	<0.36	<0.36	0.38 @
CAN-104-4LL-01	Surface	<0.37	0.88 @	<0.74	<0.37	<1.1	<0.37	<0.37	<7.4	<0.37	<0.37	<0.37
CAN-104-4M-01	15-16.3	64G	23	670	<0.35	<1.1	1.3 @	<0.35	<7.0	<0.35	<0.35	0.57 @
CAN-104-4M-02	20-22	5.4G	1.4 @	42	<0.36	<1.1	<0.36	<0.36	<7.3	<0.36	<0.36	<0.36
CAN-104-4M-03	22.5-23.2	0.59G @	<0.37	10	<0.37	<1.1	<0.37	<0.37	<7.4	<0.37	<0.37	<0.37
CAN-104-4M-05	30-31	5.3G	1.8 @	54	<0.37	<1.1	<0.37	<0.37	<7.3	<0.37	<0.37	<0.37
CAN-104-4N-01	15-17	<0.36	1.8	<0.73	<0.36	<1.1	<0.36	<0.36	<7.3	<0.36	<0.36	<0.36
CAN-104-4NN-01	40-42	<0.37	<0.37	<0.73	<0.37	<1.1	<0.37	<0.37	<7.3	1.6G @	0.55 @	0.57 @
CAN-104-4NN-03	50-52	<0.35	<0.35	<0.70	<0.35	<1.1	<0.35	<0.35	<7.0	<0.35	0.38 @	<0.35

Table 5-5

(Continued)

Sample ID	Depth, ft	Organochlorine Pesticides and PCBs (8080), µg/kg										
		4,4'-DDD	4,4'-DDE	4,4'-DDT	Aldrin	Endosulfan II	Endrin	Heptachlor Epoxide	PCB-1260	beta-BHC	delta-BHC	gamma-BHC
CAN-104-4NN-04	55-57	<0.35	<0.35	<0.69	<0.35	<1.0	<0.35	<0.35	<6.9	<0.35	0.37G @	<0.35
CAN-104-4NN-05	60-62	<0.34	<0.34	<0.68	<0.34	<1.0	<0.34	<0.34	<6.8	<0.34	<0.34	0.68G @
CAN-104-4P-10	50-52	<0.35	<0.35	<0.69	<0.35	<1.0	<0.35	<0.35	<6.9	<0.35	0.48G @	<0.35
CAN-104-4Q-08	55-57	<0.34	<0.34	<0.68	<0.34	<1.0	<0.34	<0.34	<6.8	<0.34	0.49 @	<0.34
CAN-104-4Q-14 [c]	55-57	<0.34	<0.34	<0.68	<0.34	<1.0	<0.34	<0.34	<6.8	<0.34	<0.34	<0.34
CAN-104-4RR-03	60-62	<0.34	<0.34	<0.69	<0.34	<1.0	<0.34	<0.34	<6.9	<0.34	0.4G @	<0.34
CAN-104-BG-01	Surface	<0.35	1.9	<0.69	0.58G @	1.2G @	<0.35	<0.35	<6.9	<0.35	<0.35	<0.35

[a] - CAN-104-4H-13 is a field duplicate of CAN-104-4H-01.
[b] - CAN-104-4I-13 is a field duplicate of CAN-104-4I-07.
[c] - CAN-104-4Q-14 is a field duplicate of CAN-104-4Q-08.
@ - Result listed is leess than five times the method detection limit.
G - Result is estimated due to matrix interferences.

Table 5-6

VOCs, Herbicides, Diesel, and TRPH Concentrations Found in Soil Samples from Cannon Landfill No. 4, 1992

Sample ID	Depth, ft	TRPH [a] (9071/418.1) mg/kg	Diesel (8015ME) µg/kg	Chlorinated Herbicides (8150), µg/kg			Volatile Organic Compounds (8240), µg/kg [a,b]			
				2,4,5-TP	Dichloroprop	MCPP	Acetone	Methylene Chloride	Toluene	Xylenes
CAN-104-4H-01	15-16.7	<28					<110	11@	<5.6	<5.6
CAN-104-4H-13 [c]	15-16.7	<28					<110	17@	<5.7	<5.7
CAN-104-4H-02	20-20.7	<27					<110	13@	<5.5	<5.5
CAN-104-4H-03	25-27	<27	6200 G@ [B]	<6.2	<24	<7000	<110	15@	<5.5	<5.5
CAN-104-4H-04	30-31	<27					<110	16@	<5.5	<5.5
CAN-104-4H-05	35-37	<27	5000 G@ [B]	<6.1	<23	<6900	<110	11@	<5.4	<5.4
CAN-104-4H-14 [d]	35-37	<27	4800 G@ [B]	<6.1	<23	<6900	<110	14@	<5.4	<5.4
CAN-104-4H-06	40-41	<28					<110	11@	<5.6	<5.6
CAN-104-4H-07	45-46	<27					<110	16@	<5.4	<5.4
CAN-104-4H-08	50-51.3	<26					<100	11@	<5.2	<5.2
CAN-104-4H-09	52.5-54	<26					<110	12@	<5.3	<5.3
CAN-104-4H-10	55-56	28@	4200 G@ [B]	<5.8	<22	<6600	<100	12@	<5.2	<5.2
CAN-104-4H-11	60-62	<26					<100	11@	<5.2	<5.2
CAN-104-4I-01	15-17	<26	4400 G@ [B]	<5.9	<23	<6700	<110	6.8@ [C]	<5.3	<5.3
CAN-104-4I-03	32.5-33	34@					<110	6.5@ [C]	<5.6	<5.6
CAN-104-4I-04	35-36.5	<27	4800 G@ [B]	<6.2	<24	<7000	<110	6.7@ [C]	<5.5	<5.5
CAN-104-4I-05	40-41	<28					<110	7.6@ [C]	9.7@	<5.7
CAN-104-4I-06	45-46.8	<27					<110	6.9@ [C]	<5.3	<5.3
CAN-104-4I-13 [e]	47.5-48.8	<26					<110	9.2@ [C]	<5.3	<5.3

Table 5-6

(Continued)

Sample ID	Depth, ft	TRPH (9071/418.1) mg/kg	Diesel (8015ME) µg/kg	Chlorinated Herbicides (8150), µg/kg			Volatile Organic Compounds (8240), µg/kg[a,b]			
				2,4,5-TP	Dichloroprop	MCPP	Acetone	Methylene Chloride	Toluene	Xylenes
CAN-104-4I-08	50-51.8	<27	4000 G@[B]	<6.0	<23	<6800	<110	<5.3[C]	<5.3	<5.3
CAN-104-4I-09	52.5-54.5	29@	4300 G@[B]	<6.0	<23	<6800	<100	<5.2[C]	<5.2	<5.2
CAN-104-4I-14[f]	52.5-54.5	<26	4200 G@[B]	<5.8	<22	<6600	<100	5.5@[C]	<5.2	<5.2
CAN-104-4I-10	55-57	32@					<100	5.4@[C]	<5.2	<5.2
CAN-104-4I-11	60-62	<26					<100	9@[C]	<5.2	<5.2
CAN-104-4II-01	Surface	28@	8000 G@[B]	12@	<24	11000@	<110	8.7@	<5.5	<5.5
CAN-104-4J-01	15-17	<27	4100 G@[B]	<6.0	<23	<6800	<110	<5.4	<5.4	<5.4
CAN-104-4J-13[g]	15-17	<26	4500 G@[B]	<6.0	<23	<6800	<110	6.9@	<5.3	<5.3
CAN-104-4J-05	30-32	29@	4600 G@[B]	<6.0	<23	<6800	<110	<5.3	<5.3	<5.3
CAN-104-4J-08	50-50.8	44@					<110	<5.4	<5.4	<5.4
CAN-104-4J-09	55-57	33@	3300 G@[B]	<5.8	<22	<6500	<100	<5.1	<5.1	<5.1
CAN-104-4J-10	60-62	47@					<100	<5.1	<5.1	<5.1
CAN-104-4JJ-01	Surface	36@	12000 G@[B]	<6.2	<24	<6900	<110	<5.5	<5.5	<5.5
CAN-104-4K-01	15-17	<26	5300 G@[B]	<6.0	<23	<6800	<110	<5.3[C]	<5.3	<5.3
CAN-104-4K-13[h]	15-17	<26	4700 G@[B]	<6.0	<23	<6800	<110	<5.3[C]	<5.3	<5.3
CAN-104-4K-02	20-22	<27					170@	<5.4[C]	<5.4	<5.4
CAN-104-4K-03	25-27	42@					<110	<5.4[C]	<5.4	<5.4
CAN-104-4K-04	30-32	28@					<110	<5.4[C]	<5.4	<5.4
CAN-104-4K-05	35-37	35@					<110	7.2@	<5.4	<5.4

Table 5-6

(Continued)

Sample ID	Depth, ft	TRPH (9071/418.1) mg/kg	Diesel (8015ME) µg/kg	Chlorinated Herbicides (8150), µg/kg			Volatile Organic Compounds (8240), µg/kg[a,b]			
				2,4,5-TP	Dichloroprop	MCPP	Acetone	Methylene Chloride	Toluene	Xylenes
CAN-104-4K-06	40-41	<27					<110	5.4@	<5.4	<5.4
CAN-104-4K-07	45-47	49@					<110	<5.3	<5.3	<5.3
CAN-104-4K-08	50-51.7	29@					<110	<5.3	<5.3	<5.3
CAN-104-4K-09	57.5-59.5	50@					<100	<5.1	<5.1	<5.1
CAN-104-4K-10	60-62	34@					<100	<5.2	<5.2	<5.2
CAN-104-4L-01	15-17	<27	11000 G@[B]	<6.1	<23	<6900	<110	<5.4	<5.4	<5.4
CAN-104-4L-13[i]	15-17	58@[B]	9300 G@[B]	<6.1	<23	<6900	<110	<5.4	<5.4	<5.4
CAN-104-4L-02	20-22	<27					<110	8@	<5.5	<5.5
CAN-104-4L-03	25-27	41@	7800 G@[B]	<6.1	<23	<6900	<110	<5.4	<5.4	<5.4
CAN-104-4L-04	30-30.5	49@					<110	<5.3	<5.3	<5.3
CAN-104-4L-05	35-37	<27					<110	7.9@	<5.4	<5.4
CAN-104-4L-07	40-42	<27					<110	7.4@	<5.4	<5.4
CAN-104-4L-08	45-47	49@					<110	<5.3	<5.3	<5.3
CAN-104-4L-10	55-57	<26	6700 G@[B]				<100	<5.2	<5.2	<5.2
CAN-104-4L-14[j]	55-57	42@	7400 G@[B]				<100	<5.2	<5.2	<5.2
CAN-104-4L-11	60-62	28@[B]					<100	22@	<5.2	<5.2
CAN-104-4LL-01	Surface	58@	11000 G@[B]	<6.3	<24	<7100	<110	<5.5	<5.5	<5.5
CAN-104-4M-01	15-16.3	41@[B]					<110	11@	<5.3	<5.3
CAN-104-4M-02	20-22	28@[B]	8000 G@[B]	<6.2	<24	<7000	<110	<5.5	<5.5	<5.5

Table 5-6

(Continued)

Sample ID	Depth, ft	TRPH (9071/418.1) mg/kg	Diesel (8015ME) µg/kg	Chlorinated Herbicides (8150), µg/kg			Volatile Organic Compounds (8240), µg/kg [a,b]			
				2,4,5-TP	Dichloroprop	MCPP	Acetone	Methylene Chloride	Toluene	Xylenes
CAN-104-4M-03	22.5-23.2	41@[B]					<110	7.6@	<5.6	<5.6
CAN-104-4M-04	25-27	41@[B]					<110	<5.6	<5.6	<5.6
CAN-104-4M-05	30-31	<27	7300 G@[B]	<6.2	<24	<7000	<110	<5.5	<5.5	<5.5
CAN-104-4M-06	35-37	<27					<110	7.3@	<5.4	<5.4
CAN-104-4M-07	40-42	27@[B]					<110	<5.3	<5.3	<5.3
CAN-104-4M-08	45-47	37@[B]					<110	<5.5	<5.5	<5.5
CAN-104-4M-09	50-51.5	<26	8700 G@[B]	<6.0	<23	<6800	<110	<5.3	<5.3	<5.3
CAN-104-4M-13[k]	50-51.5	30@[B]	7300 G@[B]	<6.0	<23	<6800	<110	<5.3	<5.3	<5.3
CAN-104-4M-11	60-62	32@[B]					<100	<5.2	<5.2	<5.2
CAN-104-4N-01	15-17	<27	9400 G@[B]	<6.2	<24	<7000	<110	<5.5	<5.5	<5.5
CAN-104-4N-02	17.5-19.5	77@					130@	<6.3	18@	<6.3
CAN-104-4N-03	20-21.7	37@	8800 G@[B]	<6.2	<24	<7000	<110	<5.5	13@	<5.5
CAN-104-4N-13[l]	20-21.7	<27	8300 G@[B]	<6.2	<24	<7000	<110	12@	<5.5	<5.5
CAN-104-4N-04	25-26	38@					<110	11@	5.7	<5.7
CAN-104-4N-05	30-31.5	<27					<110	8.2@	<5.4	<5.4
CAN-104-4N-07	40-40.5	29@					<120	10@	5.8	<5.8
CAN-104-4N-08	45-47	<26	8600 G@[B]	<5.9	<22	<6600	<110	5.7@	<5.3	<5.3
CAN-104-4N-09	50-52	<26					<100	7.5@	<5.2	<5.2
CAN-104-4N-10	55-57	<26	7900 G@[B]	<5.8	<22	<6600	<100	<5.2	<5.2	<5.2

Table 5-6

(Continued)

Sample ID	Depth, ft	TRPH (9071/418.1) mg/kg	Diesel (8015ME) µg/kg	Chlorinated Herbicides (8150), µg/kg			Volatile Organic Compounds (8240), µg/kg [n,b]			
				2,4,5-TP	Dichloroprop	MCPP	Acetone	Methylene Chloride	Toluene	Xylenes
CAN-104-4N-14[m]	55-57	49@	8100 G@[B]	<5.8	<22	<6600	<100	<5.2	<5.2	<5.2
CAN-104-4N-11	60-62	87@					<100	<5.1	<5.1	<5.1
CAN-104-4P-01	15-17	<27	10000 G@[B]	<6.1	<23	<6900	<110	<5.4	<5.4	<5.4
CAN-104-4P-13[o]	15-17	<27	7500 G@[B]	<6.1	<23	<6900	<110	<5.4	<5.4	<5.4
CAN-104-4P-02	17.5-18.1	38@[B]					<110	<5.5	<5.5	<5.5
CAN-104-4P-03	20-22	38@[B]	7700 G@[B]	<6.2	<24	<7000	<110	6.7@	7.4@	<5.5
CAN-104-4P-14[o]	20-22	38@[B]	10000 G@[B]	<6.2	188 G	<7000	<110	5.6@	14@	<5.5
CAN-104-4P-04	25-27	<27					<110	5.5@	<5.4	<5.4
CAN-104-4P-05	30-32	<27					<110	6.3@	<5.5	<5.5
CAN-104-4P-06	32.5-34.5	<28					<110	5.9@	<5.5	<5.5
CAN-104-4P-07	35-36	31@[B]					<110	<5.7	<5.7	<5.7
CAN-104-4P-09	45-47	39@[B]					<120	9.5@	<6.0	<6.0
CAN-104-4P-11	55-57	30@[B]					<100	<5.1	<5.1	<5.1
CAN-104-4P-12	60-62	27@[B]					<100	<5.1	<5.1	<5.1
CAN-104-4Q-02	20-22	45@					<110	<5.4	<5.4	<5.4
CAN-104-4Q-03	25-25.7	<27					<110	5.9@	<5.4	<5.4
CAN-104-4Q-04	30-32	<26	8800 G@[B]	<6.1	<23	<6900	<100	<5.2	<5.2	<5.2
CAN-104-4Q-13[p]	30-32	<26	9400 G@[B]	<5.8	<22	<6600	<100	<5.2	<5.2	<5.2
CAN-104-4Q-05	40-40.5	60@					<110	<5.4	<5.4	<5.4

Table 5-6

(Continued)

Sample ID	Depth, ft	TRPH (9071/418.1) mg/kg	Diesel (8015ME) µg/kg	Chlorinated Herbicides (8150), µg/kg			Volatile Organic Compounds (8240), µg/kg[a,b]			
				2,4,5-TP	Dichloroprop	MCPP	Acetone	Methylene Chloride	Toluene	Xylenes
CAN-104-4Q-06	50-50.5	<27					<110	6.1@	<5.3	<5.3
CAN-104-4Q-07	52.5-54.5	29@	8900 G@[B]	<5.7	<22	<6500	<100	<5.1	<5.1	<5.1
CAN-104-4Q-10	60-62	26@	5200 G@[B]	<5.7	<22	<6500	<100	<5.1	<5.1	<5.1
CAN-104-4QQ-01	Surface	30@	9900 G@[B]	<6.1	<23	<6900	<110	<5.4	<5.4	<5.4
CAN-104-4R-01	15-17	<27	9300 G@[B]	<6.1	<23	<6800	<110	<5.4	<5.4	<5.4
CAN-104-4R-13[q]	15-17	<27	16000 G@[B]	<6.0	<23	<6800	<110	<5.4	<5.4	<5.4
CAN-104-4R-02	17.5-19	<27	19000 G@[B]	<6.5	<25	<7300	<110	5.3@	<5.3	<5.3
CAN-104-4R-05	27.5-29.5	27@					<110	<5.3	<5.3	<5.3
CAN-104-4R-10	55-57	26@	9000 G@[B]	<5.7	<22	<6500	<100	<5.1	<5.1	<5.1
CAN-104-4RR-01	Surface	<27	8300 G@[B]	8.3@	<24	<7000	<110	<5.5	<5.5	<5.5
CAN-104-4RR-02[r]	Surface	<27	14000 G@[B]	<6.2	<24	<7000	<110	<5.5	<5.5	<5.5
CAN-104-BG-01	Surface	<26	4800 G@[B]	<5.9	<22	8000@	<100	<5.2	72	7.7@

[a] - 8240 TICs include 2-ethyl-1-hexanol, 2-propanol, decanal, ethyl acetate, methyl acetate, nonanal, and bromocyclohexane. Ethyl acetate was present in most samples at concentrations ranging from 0 to 210 ug/kg.
[b] - 8270 TICs include 1,2-cyclohexanediol, cyclohexenone, trichloropropene, alpha-pinene, DDD, and hydroxymethyl pentanone. Cyclohexenone was present in roughly half the samples at concentrations ranging from 140 to 380 ug/kg.
[c] - CAN-104-4H-13 is a field duplicate of CAN-104-4H-01.
[d] - CAN-104-4H-14 is a field duplicate of CAN-104-4H-05.
[e] - CAN-104-4I-13 is a field duplicate of CAN-104-4I-07. No target analytes were detected in CAN-104-4I-07.
[f] - CAN-104-4I-14 is a field duplicate of CAN-104-4I-09.
[g] - CAN-104-4J-13 is a field duplicate of CAN-104-4J-01.
[h] - CAN-104-4K-13 is a field duplicate of CAN-104-4K-01.
[i] - CAN-104-4L-13 is a field duplicate of CAN-104-4L-01.
[j] - CAN-104-4L-14 is a field duplicate of CAN-104-4L-10.
[k] - CAN-104-4M-13 is a field duplicate of CAN-104-4M-09.
[l] - CAN-104-4N-13 is a field duplicate of CAN-104-4N-03.
[m] - CAN-104-4N-14 is a field duplicate of CAN-104-4N-10.
[n] - CAN-104-4P-13 is a field duplicate of CAN-104-4P-01.
[o] - CAN-104-4P-14 is a field duplicate of CAN-104-4P-03.
[p] - CAN-104-4Q-13 is a field duplicate of CAN-104-4Q-03.

To: NMED, Hazardous and Radioactive Materials Bureau

From: Judy Strawhecker, Industrial Hygienist, U.S. Army Corps of Engineers

Re: Request for Additional Information: Phase II RCRA Facility Investigation Report, Landfills Nos. 3 and 4.

Date: 29 April, 1997

NMED Comment #1, Section 1.2, Purpose and Scope of Report: The scope of the Report is limited to analysis of whether groundwater is impacted by the sites. However, no adequate eco-risk analysis has been done. The Phase I RFI Reports state that pesticides, herbicides, and PCB's and other bioconcentrators were released from the landfills, including up to 670 ppb DDT at 15 feet underneath Landfill No. 4, and that there is a potential exposure of wildlife to contaminants originating at the landfills via surface water flowing downgradient to the playa lake. An analysis must be completed to determine the probability of the contaminants, including DDT and its derivatives, at existing concentrations and depths being transported to the surface of the landfills by evapotranspiration, soil-dwelling animals or other mechanisms, and the probability of contaminant concentrations being transported to the playa lake via surface water run-off, shallow groundwater flow, or other mechanisms. Adequate analysis of transport of contaminants may require, among other things, additional sampling to more fully characterized existing concentrations and locations of contaminants, sampling or modeling to determine contaminant concentrations and surface water flow, and sampling of shallow groundwater to determine contaminant concentration levels and groundwater flow towards the lake.

Response to comment:

1. An assessment of the risk to Human Health and the Environment at Landfill No. 4 was addressed in a CAFB RCRA Facility Investigation (RFI) (informally refered to as "Phase I") Final Report, Landfill No. 4 (Radian February 1994) in which the following release media were addressed:

a. Release to and Transport in Groundwater: The travel time of soil moisture through unsaturated soil from the bottom of the landfill to the water table was estimated to be 173 years. Solutes that may be sorbed/desorbed on soil, such as metals and pesticides, are expected to migrate at a slower apparent velocity than the soil moisture and will require a longer period of time to reach the water table. The attenuation of organic species from biological, chemical, and physical degradation was estimated assuming a first-order decay mechanism. Given the extended time of travel, even the most persistent species for which data were available (2,4-D) is expected to be attenuated by a factor of more than 10^{-8}. Less persistent species are expected to be attenuated to a greater degree. Therefore, organic chemicals of potential concern are predicted to be reduced to near zero concentrations in the water table.

b. Surface Water: Most precipitation that falls in the Clovis area is lost to evapotranspiration and shallow infiltration before runoff occurs. Generally, drainage in the Landfill No. 4 area is to the south, toward the playa lake (Radian, 1986) which was chosen as the closest surface water receptor. Therefore, direct release of contaminants detected at the surface of the landfill to the playa lake is possible. (Perhaps with a 25-year storm event rain--Sanford Hutsell) The majority of the contaminants detected at Landfill No. 4 were pesticides which generally are slightly soluble in water. The transport of these compounds (pesticides) in runoff is primarily caused by transport of particulates to which these compounds are bound. Because these compounds are bound strongly to soil, they are likely to be subject of sedimentation. Therefore, erosion by surface water, which is unlikely because of the arid climate, would be required for transport of this contaminant to the playa lake.

Contaminant levels in the playa lake water may also be affected by the rate of groundwater discharge. However, the small concentration of contaminants estimated in the groundwater indicate that groundwater discharge to the playa lake is insignificant. (Groundwater discharge to the playa lake is nonexistent--Sanford Hutsell)

2. Concern that the playa lake was being impacted ecologically by surface water run-off from Landfill No. 4 has been previously addressed. The following text is a response to comment that resulted from a conference call with EPA Region VI, NMED, and Cannon AFB relative to the CAFB Draft Phase II RFI Report, Appendix II and III SWMUs (WCC April 1995), in the Spring of 1996. This report is still pending final.

a. Eco-Risk from Detected Pesticides: A simple exposure scenario was done for mallard ducks using the detected concentrations of pesticides from Phase II. The following text and accompanying table will be added to the Phase II RFI report for the Playa Lake.

ECOTOXICOLOGICAL SCREENING OF SEDIMENT OCP CONCENTRATIONS IN PLAYA LAKE

Approach and Methods

A brief toxicological screening was conducted of organochlorine concentrations in sediments of the Playa Lake at Cannon Air Force Base. The Playa Lake occupies approximately 13 acres, is 4 to 5-ft deep at its greatest depth, and provides open water and wetland habitat for a variety of ducks and wading birds. No threatened or endangered birds have been recorded at the lake. Fish are not thought to be present in the lake due to the poor water quality and anoxic conditions. Wading birds at the lake may be feeding on aquatic insects, invertebrates, and amphibians. A more detailed ecological description of the Playa Lake and wildlife in the area was provided in previous ecological risk assessments (WCC February 1994). Sediment concentrations were evaluated with respect to the hazard they pose for waterfowl populations at the lake. Mallards were selected as the surrogate receptor for the following toxicological screening.

Sediment concentrations for the following organochlorine pesticides (OCPs) were detected:

Dieldrin	2.4 µg/kg
Endrin	2.6 µg/kg
DDE	3.6 µg/kg
DDT	2.4 µg/kg
Chlordane	2.4 µg/kg

The Dieldrin and Endrin concentrations in Playa Lake are below EPA's draft freshwater sediment quality criteria (SQC) of 52 µg/kg and 20 µg/kg, respectively (criteria reported in EPA's January 1996 ECO-Update, Vol. 3., No. 2). The SQC is derived from the chronic ambient water quality criterion using an equilibrium partitioning approach and a total organic carbon content of 1 percent.

The DDT slightly exceeds the effects-range low (ERL) sediment benchmark of 1.6 µg/kg (EPA 1996, ECO-Update, Vol. 3, No. 2). The ERL is based on effects levels from a variety of studies on estuarine sediments and is considered a benchmark below which effects are very unlikely. Due to the manner in which ERL values were developed, slight exceedances of this benchmark do not necessarily mean adverse effects are occurring or are likely to occur to aquatic benthic organisms.

A screening toxicity assessment was conducted for waterfowl using a hazard quotient approach and mallards as the surrogate receptor. Benchmarks for each OCP were obtained from the following sources:

OCP	Literature value	Benchmark Dose (mg/kg-bw/d)	Reference
Dieldrin	dietary NOAEL of 0.3 mg/kg for mallard duckling	0.08	Nebeker et al. 1992
Endrin	chronic NOAEL for mallard	0.3	Opresko et al. 1994
DDE	chronic LOAEL of 0.58 mg/kg-bw/d for mallard and 0.1 uncertainty factor	0.058	EPA 1993a
DDT	chronic NOAEL for mallard	0.58	EPA 1993a
Chlordane	chronic NOAEL for blackbird	2.14	Opresko et al. 1994

Input values (e.g., body weight, percent sediment ingestion) to calculate hazard quotients for sediment and food ingestion were obtained from EPA's (1993b) Wildlife Exposure Factors Handbook. The mallard's food intake rate was assumed to be 20 percent of the mallard's body weight, which is in keeping with measured values for other aquatic-feeding birds (Newell et al. 1987). The sediment intake rate was set at 2 percent of the food intake rate (EPA 1993b).

A bioaccumulation factor of 50, from sediment to food, was estimated, although with considerable uncertainty. Bioaccumulation values from sediment to mallard plant food items are not readily found in the literature. Bioaccumulation of pesticides was investigated in two relatively small lakes in Amsterdam with different levels of contamination (Van der Oost et al. 1990). Ratios between contaminant concentrations in organisms (including fish) and sediments ranged from 0.1 to 41.7. Other literature values were found for bioaccumulation factors from soil to plants, insects, and invertebrates and bioconcentration factors from surface water to aquatic plant, insects and invertebrates. For Dieldrin, literature bioaccumulation factors from soils range from 0.5 for terrestrial plants (ESE 1986) to 5 for earthworms (Korschgen 1970) and 10 for insects (Thorne et al. 1979). Bioconcentration factors for Dieldrin in surface water range from 450 for aquatic plants to over 5,000 for aquatic insects (chironomids) (Rosenlund et al. 1986).

Results

Table 1 presents the results of the hazard quotient and hazard index (sum of hazard quotient) calculations for the mallard. A hazard index of 0.0004 was obtained based on the mallard's sediment ingestion pathway and a hazard index of 1.06 was obtained based on the mallard's food ingestion pathway. The hazard index of 1.06 from food ingestion was largely due to the DDE hazard quotient of 0.62 and the Dieldrin quotient of 0.3. Hazard index values less than 1 are generally interpreted as the risk is negligible; values between 1 and 10 should be interpreted with caution, and values greater than 10 are interpreted as an indication of likely risk. It would appear that potential risk for the mallard, given the hazard index of 1.1, resides in the assumption that the mallard's regular diet is composed of food items from Playa Lake that have accumulated OCPs to a concentration substantially (50 times) greater than that in the sediment.

An additional risk calculation was performed based on the Dieldrin sediment concentration and a recently proposed screening level wildlife criterion (SLWC) of 0.1 µg/L for Dieldrin, based on the mallard (Nebeker et al. 1992). Using the sediment concentration for Dieldrin of 2.4 µg/kg, an equilibrium approach, a K_{oc} value of 1.78E+05 (Hull and Suter 1994) and a value of 10 for total organic carbon (TOC) in sediment, results in a water concentration of 0.0013 µg/L, which is well below the SLWC.

$$\text{Sediment Concentration}\left(\frac{\mu\text{g - chemical}}{\text{kg - sediment}}\right) \div \text{TOC}\left(\frac{\text{gOC}}{\text{kg - sediment}}\right) = \text{Sediment Criterion}\left(\frac{\mu\text{g - chemical}}{\text{gOC in sediment}}\right)$$

$$\left[\text{Sediment Criterion} \div \text{Unit Conversion}\left(\frac{1\text{ kg - OC}}{1{,}000\text{ OC in sediment}}\right)\right] \div K_{oc}\left(\frac{\text{L}}{\text{kg}}\right) = \text{Surface Water Cocentration}\left(\frac{\mu\text{g - chemical}}{\text{L - water}}\right)$$

Using this same approach for DDT, and a K_{oc} value of 2.40E+05 results in a surface water concentration of 0.001 µg/L. The freshwater chronic ambient water quality criterion (AWQC) for DDT is 0.001 µg/L. Given the conservative nature of the AWQC, chronic effects are not considered likely, based on this approach.

Conclusions

The hazard index for waterfowl from food and sediment ingestion based on the maximum concentrations detected in sediment is 1.1. As each of the pesticides was detected in only 1 of 10 samples (Phase I and Phase II), the hazard index would be well below 1.0, if a more reasonable maximum exposure (RME) scenario were used. Waterfowl are not expected to spend all their time feeding in the one location at Playa Lake where the one (maximum) valùe was detected, so risk to waterfowl populations at Playa Lake are considered negligible. Comparison of a water concentration for Dieldrin (0.0013 µg/L), derived through partitioning from sediment (2.4 µg/kg) against a screening wildlife criterion of 0.1 µg/L also indicates a negligible potential risk for waterfowl for Dieldrin. Although the DDT sediment concentration slightly exceeds the ERL sediment criterion for the protection of benthic organisms, adverse effects to aquatic populations in Playa Lake are considered unlikely as DDT was detected in only 1 of 10 sediment samples..

Additionally, the exposure scenario used to calculate the HI assumed that the Playa Lake accounted for 100 percent to the mallards' home range. A mallard's home range varies markedly based on the time of year and the sex of the bird. Females in springlay have the smallest home range (94 acres to 593 acres; averages of 274 acres) (Dwyer 1979), while adult males have a much larger and variable home range (173 acres to 2,816 acres; average of 1,531 acres) (Kirby 1985). The Playa Lake is approximately 130 acres. If the average home range for a female in lay is 274 acres, the HI at the Playa Lake is likely overestimated by a factor of 2, and the actual potential for adverse effects closer to 0.011 than 1.1. Therefore, the potential for adverse health effects to waterfowl at the Playa Lake from the detected pesticides is likely minimal and would more likely pertain to an individual than to the Playa Lake population as a whole.

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TABLE 1

HAZARD INDEX CALCULATION FOR DUCKS FROM OCP INGESTION IN FOOD AND SEDIMENT

Food	Dieldrin	Endrin	DDE	DDT	Chlordane	
Food Intake Rate (kg/day)(20%*BW)	0.24	0.24	0.24	0.24	0.24	
Body weight (kg)	1.2	1.2	1.2	1.2	1.2	
Sediment Concentration (mg/kg)	0.0024	0.0026	0.0036	0.0024	0.0024	
Bioaccumulation Factor (food/sediment)	50	50	50	50	50	
Food Concentration (mg/kg)	0.12	0.13	0.18	0.12	0.12	
Dose (mg/kg/d)	0.02	0.03	0.04	0.02	0.02	
Screening Value (mg/kg/d)	0.08	0.3	0.058	0.58	2.14	
Hazard Quotient	0.30	0.09	0.62	0.04	0.01	1.06
Sediment	**Dieldrin**	**Endrin**	**DDE**	**DDT**	**Chlordane**	
Food Intake Rate (kg/day)	0.24	0.24	0.24	0.24	0.24	
Body weight (kg)	1.2	1.2	1.2	1.2	1.2	
% Sediment in Diet	0.02	0.02	0.02	0.02	0.02	
Matrix effect	1	1	1	1	1	
Sediment Intake (kg/day)	0.0048	0.0048	0.0048	0.0048	0.0048	
Concentration (mg/kg)	0.0024	0.0026	0.0036	0.0024	0.0024	
Dose (mg/kg/d)	0.00001	0.00001	0.00001	0.00001	0.00001	
Screening Value (mg/kg/d)	0.08	0.3	0.058	0.58	2.14	
Hazard Quotient	0.0001	0.00003	0.0002	0.00002	0.000004	0.0004
Hazard Index	0.30	0.09	0.62	0.04	0.01	1.06

DEPARTMENT OF THE AIR FORCE

27th CIVIL ENGINEER SQUADRON (ACC)
CANNON AIR FORCE BASE NEW MEXICO

U.S. AIR FORCE
1947 - 1997

MEMORANDUM FOR: Sanford Hutsell

FROM: David Z. Davis, Natural Resource Planner, CEVN

SUBJECT: Answer to NMED comments on Landfills 3 and 4

1. It is the opinion of this office that the contaminants from Landfills 3 and 4 listed in the Phase II RCRA Facility Investigation Report are not being transported by evapotranspiration or soil-dwelling animals. After surveying the areas in question and reviewing the report, all the contaminants mentioned were too deep to come in contact with any of the flora or fauna known to occur in these areas.
2. Contaminant concentrations transporting to the Playa Lake by surface water run-off from Landfill 3 could occur but is unlikely. The landfill is up gradient from the Playa, but because of the heavy vegetation and the lack of precipitation, contamination of the Playa would not occur except in extreme conditions. Run-off from Landfill 4 going to the Playa should not be a concern because of the contour of the land. In case of a flood, run-off from Landfill 4 would wind up in a low area northeast of the Playa.
3. Both Landfills were surveyed for Wildlife. Small mammal dens were identified in the area but all were shallow and way above the 15 foot deep concentration of even the most shallow contaminants. Waterfowl have been observed in the area of the Playa, but no known nesting occurs in the landfill areas. If flooding or ponding of water were to occur on these landfills, which is extremely remote, Waterfowl might become a mechanism by which transportation of contaminants to the Playa could occur. This however is highly unlikely, what little rainfall does occur comes during the spring and summer months after the waterfowl have migrated north to their historic nesting areas.

392 1

File: J.P. 174-91 ~~568~~ 392

DEPARTMENT OF THE AIR FORCE

HEADQUARTERS 27th FIGHTER WING (ACC)
CANNON AIR FORCE BASE, NEW MEXICO

Colonel James A. Thomas III
Commander, 27th Support Group
110 E Sextant Avenue Suite 1098
Cannon AFB NM 88103-5323

06 JAN 1998

Mr. Benito J. Garcia, Chief
Hazardous and Radioactive Materials Bureau
New Mexico Environment Department
2044 Galisteo Street
PO Box 26110
Santa Fe NM 87502

Dear Mr. Garcia

Attached is a two page proposal from the Corps of Engineers for changes we propose to make in the groundwater monitoring program at Landfills 3, 4, and 25 on the east side of Cannon Air Force Base (AFB). Wells at these landfills have been sampled for several years now.

Due to the high cost of analysis, we propose to delete some parameters which haven't previously been detected and reduce the frequency of monitoring. The constituents proposed for deletion are not very mobile in the subsurface and groundwater is over 270 feet deep.

Please inform us if you concur with this proposal so that we may proceed accordingly.

If you have any questions, please contact Mr. Sanford Hutsell of my environmental staff, at (505) 784-6378.

Sincerely

James A. Thomas III

JAMES A THOMAS III, Colonel, USAF

Attachment:
Proposal from Corps of Engineers

cc:
NMED (C. Will)
NMED GW Bureau (J. Jacobs)
EPA Region VI (D. Neleigh)
HQ ACC CES/ESVW (M. Patterson)

Proposal for Changes in Long-Term Monitoring
U. S. Army Corps of Engineers

We are currently preparing a Scope of Services for the Long-Term Monitoring at Landfills No. 3, 4, and 25 (SWMUs No. 105, 104, and 97) for award to a contractor by the end of December 1997. These monitoring wells are designated MW-O (Landfill No. 3), MW-N (Landfill No. 4), MW-R (Landfill No. 25).

Groundwater monitoring has been conducted at these sites for one or more years. For 1998, we are proposing the following changes to the sampling intervals for these sites:

- The monitoring well at Landfill No. 25 (MW-R) was sampled quarterly in 1997. We propose semi-annual sampling for 1998.
- The monitoring wells at Landfill No. 3 and 4 (MW-O and MW-N) were sampled semi-annually in 1997. We propose annual sampling for 1998.

Due to the high cost of the Appendix IX list, the lack of detections for many compounds in that list, the low mobility of many of the compounds, and the fact that the depth to groundwater is over 270 feet at these sites, we propose to analyze for the Appendix IX list once every three years and to revise the analyte list as follows (to be analyzed every year except on the third year when the Appendix IX analysis will be done):

- Volatile Organic Compounds -- all sampling events
- Semi-Volatile Organic Compounds -- once a year
- RCRA Metals plus Nickel -- all sampling events
- Pesticides/PCBs -- all sampling events
- Herbicides -- all sampling events

We propose to add Water Quality and Contaminant Indicators to include the following parameters:

- Sulfates
- Nitrates/Nitrites
- pH
- Conductivity
- Chloride
- Phenols
- Sodium
- Iron
- Magnesium

We propose to eliminate the following parameters:

- Dioxins
- Cyanide & Sulfide
- Total Organic Carbon
- Total Organic Halide

Please review these proposed sampling intervals and analytical parameters and inform our office of your concurrence with them.

State of New Mexico
ENVIRONMENT DEPARTMENT
Hazardous Waste Bureau
2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6303
Telephone (505) 428-2500
Fax (505) 428-2567
www.nmenv.state.nm.us

BILL RICHARDSON
GOVERNOR

RON CURRY
SECRETARY

DERRITH WATCHMAN-MOORE
DEPUTY SECRETARY

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

January 12, 2004

Colonel Robert Yates
Commander, 27th Fighter Wing
100 D.L. Ingram Blvd., Suite 100
Cannon Air Force Base, New Mexico 88103-5214

SUBJECT: NO FURTHER ACTION PETITION
CANNON AIR FORCE BASE, NEW MEXICO
EPA ID No.: NMD000804294

Dear Colonel Yates:

The New Mexico Environment Department (NMED) has reviewed Cannon AFB's Class 3 Modification Request - No Further Action Proposals (NFA) submitted on September 5, 2000, as required pursuant to 20.4.2 NMAC. Any document submitted by a facility for review and approval must first pass an initial review to determine if all the required parts are contained in the document and that NMED are available to conduct the review in a timely fashion. Because of the number of solid waste management units (SWMUs) and areas of concern (AOCs) involved and limited resources, NMED has been unable to complete its initial review until recently.

As discussed with your staff, NMED recommends that Cannon resubmit its Petition for NFA Review. Many of the SWMUs and AOCs do not qualify for NFA approval either because these sites have never been adequately investigated, are sites that Cannon has submitted corrective measures studies that have not been reviewed, or are sites at which corrective measures have not yet been completed (see Table 1, Attachment 1). Cannon must conduct additional investigation and/or complete its final remedies before these sites can qualify for a NFA determination.

However, NMED has determined that approximately 35 SWMUs and AOCs appear to qualify for NFA approval (see Table 2, Attachment 1). Cannon has investigated or remediated these sites to NMED's satisfaction and NMED has previously recommended that Cannon submit a NFA petition (see Table 3, Attachment 1). NMED recommends that Cannon submit a new NFA petition for these 35 specific sites only in order to expedite the NFA review and approval process.

There are also several SWMUs and AOCs that Cannon may be able to justify including in its NFA petition with some additional information (see Table 3, Attachment 1), such as the inclusion of an approval letter from another bureau (*e.g.*, USTB).

If you have any questions concerning this letter, please call me at 505-428-2551.

Sincerely,

Glenn von Gonten
CAFB Project Leader
Permits Management Program

GVG:gvg

Attachment

cc: S.Y. Martin, NMED HWB
J. Kieling, NMED HWB
D. Cobrain, NMED HWB
L. King, EPA Region 6 (6PD-N)

File: Reading, CAFB 00-003, CAFB 2004

ATTACHMENT 1

TABLE 1 SWMUS AND AOCS THAT DO NOT QUALIFY FOR NFA DETERMINATION		
SWMU/AOC	**DESCRIPTION**	**COMMENTS**
AOC A	MOGAS Spill Site	No. Product spills that are not remediated are SWMUs/AOCs. Nb., Was designated as a SWMU/AOC in permit.
AOC B	JP-4 Fuel Spill	No. Product spills that are not remediated are SWMUs/AOCs. NB., Was designated as a SWMU/AOC in permit.
AOC C	Blown Capacitor Site	No. Product spills that are not remediated are SWMUs/AOCs. NB., Was designated as a SWMU/AOC in permit.
SWMU 2	Recovered Tank No. 108	No. Never Investigated. Need additional RFI phase.
SWMU 4	Recovered Tank No. 121	No. Never Investigated. Need additional RFI phase.
SWMU 31	AGE Maintenance Shop Pad	No. CMS is under review
SWMU 48a	Underground Waste Oil Tank	No. CMS is under review
SWMU 49	Inactive POL Storage Tank No. 4028a	No. Never Investigated. Need additional RFI phase.
SWMU 50	Inactive POL Storage Tank No. 4028b	No. Never Investigated. Need additional RFI phase.
SWMU 75	Sanitary Sewage Lift Station Overflow Pit	No. Never investigated. Cannot NFA accidental spill site that was neither investigated nor cleaned up.
SWMU 77	Civil Engineering Container Storage Area	No. CMS is under review
SWMU 86	Engine Test Cell	No. CMS is under review
SWMU 87	Former Overflow Pit	No. CMS is under review
SWMU 88	Former Leaching Field	No. CMS is under review
SWMU 89	Evaporation Pond	No. CMS is under review
SWMU 90	OWS No. 5114	No. CMS is under review
SWMU 91	Recovered Fuel Tank No. 5114	No. Bulk product AST requires investigation.

TABLE 1 SWMUS AND AOCS THAT DO NOT QUALIFY FOR NFA DETERMINATION		
SWMU/AOC	**DESCRIPTION**	**COMMENTS**
SWMU 97	Concrete Rubble Pile (Landfill 25)	No. CMS is under review.
SWMU 101	Wastewater Treatment System - Lagoons (2)	No. CMS is under review
SWMU 103	Wastewater Playa Lake	No. Eco Risk pending
SWMU 104	Landfill No. 4	No. CMS is under review
SWMU 105	Landfill No. 3	No. CMS is under review
SWMU 109	FTA 4	No. CMS is under review. Not included in NFA petition
SWMU 110	Underground Waste Oil Tank No. 2336 at FTA 4	No. CMS is under review. Not included in NFA Petition
SWMU 111	Unlined Pit at FTA 4	No. CMS is under review
SWMU 112	OWS No. 2336 at FTA 4	No. CMS is under review
SWMU 125	Inactive UST 2	No. Never investigated. UST was abandoned in place. EPA's decision that fuel/product at AST/USTs does not require investigations is not shared by NMED. Must conduct investigation.
SWMU 127	OWS Near Tank 4095 (#1) & Leach field	No. CMS is under review
SWMU 129	Waste Oil Storage Facility 244. Formerly known as AOC "I"	No. CMS is under review. Was not included in NFA Petition

TABLE 2 SWMUS AND AOCS THAT APPEAR TO QUALIFY FOR NFA DETERMINATION		
SWMU/AOC	**DESCRIPTION**	**COMMENTS**
SWMU 1	OWS 119	YES
SWMU 3	OWS 108	YES
SWMU 5	OWS 121	YES
SWMU 7	OWS 129	YES
SWMU 8	OWS 165	YES
SWMU 9	Aircraft Washrack Drain system	YES
SWMU 11	OWS 170	YES
SWMU 16	OWS 680	YES
SWMU 32a	OWS 186 (#1)	YES
SWMU 33b	OWS 186 (#2)	YES
SWMU 38	OWS 194	YES
SWMU 39	OWS 195	YES
SWMU 46	OWS 196	YES
SWMU 47	OWS 494	YES
SWMU 48b	Above Ground Overflow Capacity Tank	YES
SWMU 51	OWS 375	YES
SWMU 55	Lead Acid Battery Accumulation Point	YES
SWMU 57	OWS 379	YES
SWMU 61	OWS 5077a	YES
SWMU 62	OWS 5077b	YES
SWMU 63	OWS 5077c	YES
SWMU 70	OWS and Leach Field 326	YES
SWMU 74	Landfill No. 1	YES
SWMU 83	Sump	YES
SWMU 92	OWS No. 5120	YES

TABLE 2 SWMUS AND AOCS THAT APPEAR TO QUALIFY FOR NFA DETERMINATION		
SWMU/AOC	**DESCRIPTION**	**COMMENTS**
SWMU 93	OWS No. 5121	YES
SWMU 94	OWS No. 5144	YES
SWMU 108	Explosive Ordinance Disposal Activities Area	YES, but was not included in NFA Petition.
SWMU 113	Landfill 5 Cell 3	YES
AOC D	Asbestos Burial Pit	YES. Listed on Table 2 of CAFB's HSWA Permit
AOC E	Runway Rubble Pile	YES. Listed on Table 2 of CAFB's HSWA Permit
AOC F	Gunsight Target Berm	YES. Listed on Table 2 of CAFB's HSWA Permit
AOC G	NEW SWMU Report 05/15/97	YES
AOC H	NEW SWMU Report 05/15/97	YES
DP-33		Yes. GWQB Approved NFA proposal on 12/12/1996

TABLE 3 SWMUS AND AOCS THAT MAY QUALIFY FOR NFA DETERMINATION		
SWMU/AOC	**DESCRIPTION**	**COMMENTS**
SWMU 6	POL Tank No. 129	Maybe. Additional documentation required. Need UST Close Out Report.
SWMU 10	POL Tank No. 170	Maybe. Never investigated Removed IAW UST Regulations. Additional documentation required. Need UST Close out report.
SWMU 34	AGE Drainage Ditch	Maybe. Additional documentation required.
SWMU 36	MWR Auto Body Shop	Maybe. Additional documentation required.
SWMU 71	Recovered JP-4 Fuel Tank No. 390	Maybe. Duplicate of SWMU 72. Need to document the NFA petition conclusions in a Report.
SWMU 72	OWS 390	Maybe. Additional documentation is needed to show that SWMU 71 is a duplicate of SWMU 72 in a RFI Report.
SWMU 76	Sludge Weathering Pit	Maybe. Additional documentation required.
SWMU 78	FTA 1	Maybe. Additional documentation required.
SWMU 79	UST at FTA 1	Maybe. Never Investigated - never existed? NFA Petition states that this SWMU did not exist. Additional documentation required.
SWMU 81	Solvent Disposal Site	Maybe. Additional documentation required.
SWMU 82	Landfill No. 2	Maybe. Additional documentation required.
SWMU 85	Stormwater Collection Point	Maybe. CAFB presumed that EPA's lack of response indicated acceptance. Additional documentation required.
SWMU 95	NE Stormwater Drainage Area	Maybe. Additional documentation required.

TABLE 3 SWMUS AND AOCS THAT MAY QUALIFY FOR NFA DETERMINATION		
SWMU/AOC	**DESCRIPTION**	**COMMENTS**
SWMU 96	Old Entomology Rinse Area	Maybe. Additional documentation required.
SWMU 98	Sanitary Sewage Line	Maybe. Additional documentation required.
SWMU 102	Wastewater Treatment Effluent Discharge	Maybe. Additional documentation required.
SWMU 106	FTA 2	Maybe, but CAFB must supply copy of approved 1994 RFI Work Plan and subsequent RFI Report
SWMU 107	FTA 3	Maybe, but CAFB must supply copy of approved 1994 RFI Work Plan and subsequent RFI Report
SWMU 124	Inactive UST 1 Duplicate of SWMU 48A	Maybe. Assertion that SWMU 124 is a duplicate of SWMU 48A has not been previously documented.
SWMU 126	Inactive UST 3 Closed in accordance with NMED UST regulations	Maybe for Criterion 4. Must provide UST close out report. EPA's opinion that an investigation at fuel/product ASTs/USTs is not required is not shared by NMED.
SWMU 128	OWS Near Tank 4095 (#2) & Leach Field	Maybe. Additional documentation required.

APPENDIX D

LF-04 (SWMU 104) SPECIFIC REPORT DATA

HAZARDOUS ASSESSMENT RATING FORM

NAME OF SITE: Site No. 4 - Landfill No. 4

LOCATION: Cannon AFB

DATE OF OPERATION OR OCCURRENCE: 1967-1968

OWNER/OPERATOR: Cannon AFB

COMMENTS/DESCRIPTION: Landfill

SITE RATED BY: D. Moccia, G. McIntyre

I. RECEPTORS

	Rating Factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
A.	Population within 1,000 feet of site	0	4	0	12
B.	Distance to nearest well	3	10	30	30
C.	Land use/zoning within 1 mile radius	1	3	3	9
D.	Distance to reservation boundary	3	6	18	18
E.	Critical environments within 1 mile radius of site	1	10	10	30
F.	Water quality of nearest surface-water body	0	6	0	18
G.	Ground-water use of uppermost aquifer	3	9	27	27
H.	Population served by surface-water supply within 3 miles downstream of site	0	6	0	18
I.	Population served by ground-water supply within 3 miles of site	3	6	18	18
			Subtotals	106	180

Receptors subscore (100 x factor score subtotal/maximum subtotal) 59

II. WASTE CHARACTERISTICS

A. Select the factor score based on the estimated quantity, the degree of hazard, and the confidence level of the information.

1. Waste quantity (S = small, M = medium, L = large) S
2. Confidence level (C = confirmed, S = suspected) C
3. Hazard rating (H = high, M = medium, L = low) H

Factor Subscore A (from 20 to 100 based on factor score matrix) 60

B. Apply persistence factor
Factor Subscore A x Persistence Factor = Subscore B

60 x 1.0 = 60

C. Apply physical state multiplier

Subscore B x Physical State Multiplier = Waste Characteristics Subscore

60 x 1.0 = 60

III. PATHWAYS

Rating Factor	Factor Rating (0-3)	Multiplier	Factor Score	Maximum Possible Score
A. If there is evidence of migration of hazardous contaminants, assign maximum factor subscore of 100 points for direct evidence or 80 points for indirect evidence. If direct evidence exists then proceed to C. If no evidence or indirect evidence exists, proceed to B.				
			Subscore	--
B. Rate the migration potential for three potential pathways: surface-water migration, flooding, and ground-water migration. Select the highest rating, and proceed to C.				
1. Surface-water migration				
Distance to nearest surface water	3	8	24	24
Net precipitation	0	6	0	18
Surface erosion	1	8	8	24
Surface permeability	1	6	6	18
Rainfall intensity	2	8	16	24
		Subtotals	54	108
Subscore (100 x factor score subtotal/maximum score subtotal)				50
2. Flooding	0	1	0	3
	Subscore (100 x factor score/3)			0
3. Ground-water migration				
Depth to ground water	1	8	8	24
Net precipitation	0	6	0	18
Soil permeability	0	8	0	24
Subsurface flows	0	8	0	24
Direct access to ground water	NA	8	--	--
		Subtotals	8	90
Subscore (100 x factor score subtotal/maximum score subtotal)				9

C. Highest pathway subscore

Enter the highest subscore value from A, B-1, B-2, or B-3 above.

Pathways Subscore 50

IV. WASTE MANAGEMENT PRACTICES

A. Average the three subscores for receptors, waste characteristics, and pathways.

Receptors	59
Waste Characteristics	60
Pathways	50
Total 169 divided by 3 =	56.33
	Gross Total Score

B. Apply factor for waste containment from waste management practices

Gross Total Score x Waste Management Practices Factor = Final Score

56.33 x 1.0 = 56

104. UNIT NAME: Landfill No. 4

Unit Description: This unit is a roughly rectangular inactive, unlined landfill about 7 acres in size. It is located on the east side of the Air Force Base, with the distance to the base boundary less than 100 feet. The Playa Lake (SWMU No. 103) is less than 50 feet south of the landfill. The landfill appears as an open field covered with prairie grass (Ref. 6). Waste management practices were a burn and trench burial operation (Ref. 46). During the VSI, approximately 6 cells were detected by observing subsided soil. The length of the cells is approximately 250 feet, trending north-south in the landfill area. Drainage from the area is to the south toward Playa Lake (SWMU No. 103) Animal burrows were noted in the soil cover (Ref. 47).

From reconnaissance boring information, the cover in this unit is composed of loamy sand ranging from 2 to 4.5 feet. Underlying the landfill strata is a caliche profile that extends to approximately 50 to 60 below surface. Most boreholes revealed sand at 50 to 60 feet in depth. A number of borings reveal weakly consolidated sand deposits between depths of 15 to 25 feet. These may reflect the presence of locally significant sand lenses which could have a strong influence on the path of potential contaminant migration at the site (Ref. 46).

This unit was identified as Site No. 4 in the IRP Phase I study based on its proximity to the base boundary and to the Playa Lake, the existence of a potable water well in the vicinity of the site, and the known past disposal of hazardous wastes (Ref. 6).

Date of Start-Up: Use of this unit began in 1967 (Ref. 46).

Date of Closure: Use of this unit ceased in 1968 (Ref. 46).

104. (Cont'd.) Landfill No. 4

Wastes Managed: The landfill was active between 1967 and 1968 and received domestic and industrial solid waste, including waste oils and solvents, paints, paint strippers, paint thinners, pesticides, and empty cans and drums (Ref. 6).

Release Controls: This unit is covered. No other release controls were observed during the VSI (Ref. 47)

Release History: During 1985, seven deep soil borings were made at this unit to define the hydrogeologic setting and to evaluate the extent of potential contaminant migration. Results are presented in Table 104 and Figure 105 following this page. Briefly, no purgeable halocarbons or aromatic hydrocarbons were detected. Total concentrations of metals were within normal range for soils. Four samples contained total oil and grease quantities above background levels (Ref. 46).

104.	UNIT NAME	Landfill No. 4 (Eastern Area of Base)
	Soil/Groundwater:	The potential for release to soil/groundwater is high due to the unlined nature of the unit and the results to date of soil testing. Potential release to the groundwater is lower. The caliche layers could possibly act as an acquitard and inhibit downward migration of hazardous constituents to the aquifer.
	Surface Water:	The potential for release to surface water is low due to the presence of a soil cover.
	Air:	The potential for release to air is low due to the presence of a soil cover.
	Subsurface Gas:	The potential for generation of subsurface gas is moderate due to the nature of wastes disposed.
	Suggested Further Actions:	Install groundwater monitoring wells and vadose zone monitoring to determine if contaminants have migrated from beneath the landfill.

6.0 RISK ASSESSMENT

This section of the report presents the risk assessment and receptor and pathway identification conducted in support of conclusions drawn from the 1985 and 1992 investigations. Section 6.1 presents a brief narrative description of Landfill No. 4 and characterization of the exposure setting. Section 6.2 describes the process used to identify the chemicals of potential concern and presents those chemicals that are quantified for risk in this report. Section 6.3 presents an assessment of the exposure to these chemicals of potential concern, including a conceptual site model. A toxicity assessment of the chemicals of potential concern is presented in Section 6.4. Potential health risks are described in the risk characterization presented in Section 6.5. Section 6.6 presents a qualitative environmental evaluation. Section 6.7 presents conclusions of the baseline risk assessment.

6.1 Characterization of Exposure Setting

Landfill No. 4 is an inactive waste disposal site. The landfill is located on the east side of the base, north of the Playa Lake, and covers 6.3 acres as shown in Figure 6-1. The landfill was operated from 1967 to 1968 during which time domestic solid wastes, waste oils, solvents, paints, paint thinners and strippers, pesticide containers, and various empty cans and drums were burned in trenches, and the ash and remaining debris were buried. The maximum excavation depth of the landfill during operation was 16 feet. The inactive site currently appears as a rectangular open field covered by prairie grasses.

The topography at Landfill No. 4 slopes to the southwest toward the playa lake, located near the southern boundary of the landfill. Landfill No. 4 is covered by surficial soils which vary in thickness from approximately 2 to 4.5 feet. The soils are typically brown to red-brown, loamy sands. The caliche profile across Landfill No. 4 extends from the base of the topsoil to a depth of probably less than 60 feet. The

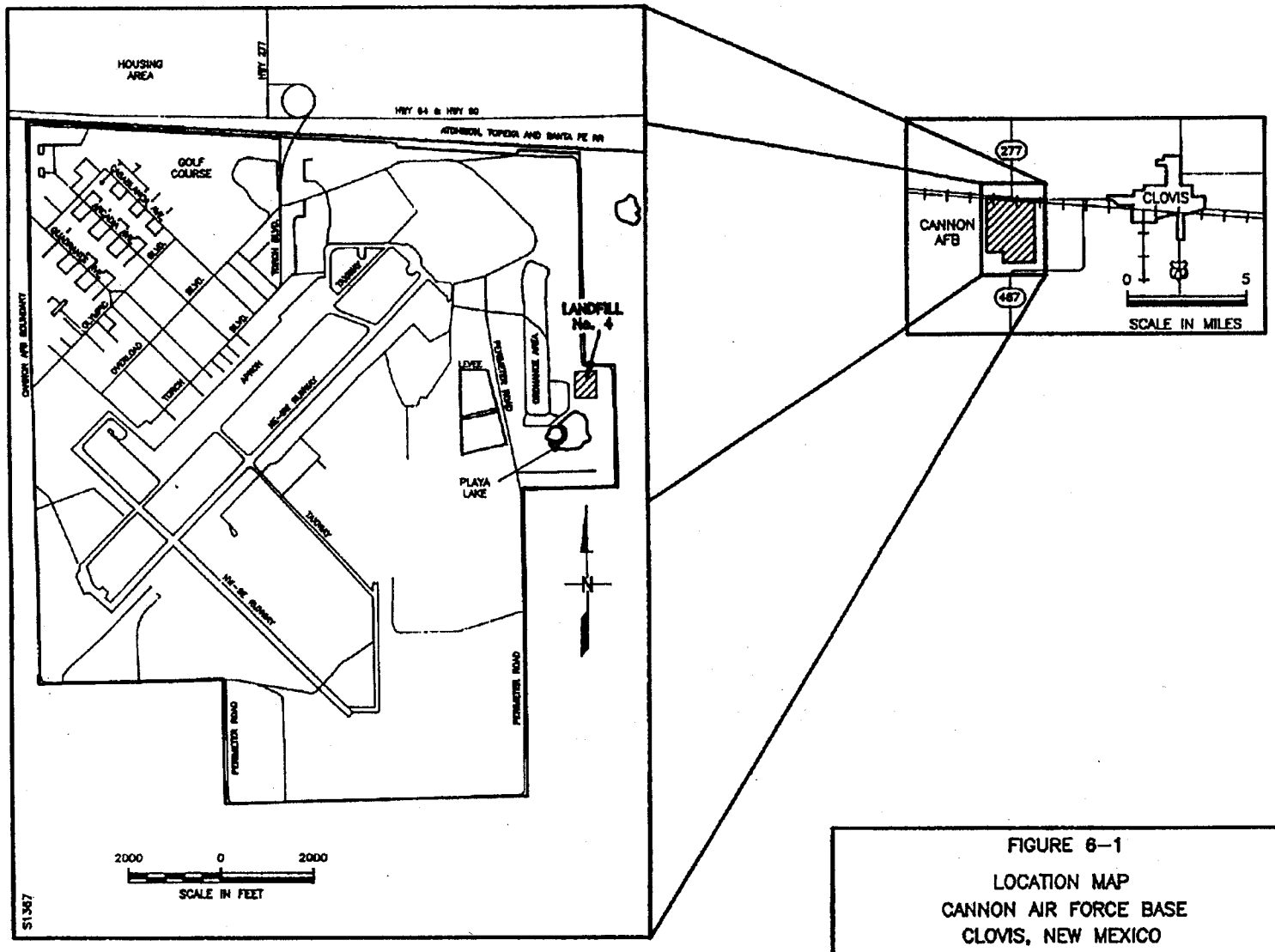

FIGURE 6–1

LOCATION MAP
CANNON AIR FORCE BASE
CLOVIS, NEW MEXICO

280–069/N1554

physical properties of the caliche are highly variable but are similar to those at the adjacent Landfill No. 3 site, just south of the playa lake. The caliche may serve as a barrier between the landfill base and the underlying Ogallala aquifer. The potential for migration of leachate to contaminate groundwater is low, because the amount of precipitation in the arid environment is not sufficient to saturate the vadose zone or recharge the Ogallala aquifer located 260 feet below ground level (BGL). However, weakly consolidated sand deposits between depths of about 15 and 25 feet may indicate the presence of a locally significant sand lens which could impact the path of potential contaminant migration at the site. The unconsolidated sand at the base of the caliche profile is similar to that at Landfill No. 3 but the caliche/sand contact is more gradational (Radian, 1986).

A thin (1.5-foot thick) caliche layer exists at a depth of 3 feet in the area of Landfill No. 4. Fill material which includes domestic and construction-type wastes (e.g., wood, paper, and metal scrap) underlays the shallow caliche. The fill extends to a depth of approximately 16.5 feet and is underlain by a largely unconsolidated 5-foot thick sand body. Therefore, it is likely that any leachate migrating downward from the fill material would enter the sand and migrate laterally along this relatively permeable zone.

6.1.1 Population Demographics

CAFB had a resident population of approximately 3,800, including military personnel and their dependents, in 1990. Currently, there are 1,841 housing units at CAFB. Base housing is located in the northwest quarter of the base and north of the base, west of New Mexico Highway 277. Base-related employment at CAFB includes approximately 4,900 positions (Woodward-Clyde, 1992). The city of Clovis, New Mexico is located approximately seven miles to the east of the base. In 1990, the population of Clovis was 30,954 persons. Currently, the population potentially exposed to contaminants originating from Landfill No. 4 includes on-base residents and workers, off-base residents and consumers of locally produced agricultural crops and beef and dairy products.

Future on-base land use is not expected to change. The results of groundwater modeling indicate that future contamination of the groundwater is likely to be insignificant. However, in order to assess a worst-case scenario, further supporting a no action decision, the future off-base residential scenario was evaluated in this risk assessment.

6.1.2 Current and Future Land Use

Land use is primarily agricultural within Curry County. As of 1992, total land area in the county is 897,000 acres with 837,200 designated as farm land. Lands surrounding CAFB are classified as irrigated farm land with principal crops including corn, grain, sorghum, wheat, barley, oats, alfalfa, cotton and various vegetables. Cattle ranching and dairy farming occur throughout the county. Currently no land use or zoning controls restrict the type and amount of construction in the proximity of CAFB. The U.S. Air Force has designated Compatible Use Zones (CUZs) around CAFB and provides recommendations for compatible uses in areas subject to noise and accident hazards (Woodward-Clyde, 1992).

CAFB is an active military installation and the home of the 27th Tactical Fighter Wing. There are no plans for closure of the facility in the foreseeable future. The use of CAFB as a military installation is highly specialized and land use cannot be significantly altered (i.e., converted to private commercial or residential use) without the approval of the U.S. Congress and the Secretary of Defense. For security and safety reasons, ingress and egress to the base is restricted (Landfill No. 4 is fenced on the north and east sides, although a local farmer may enter through a private gate and pump water from the playa lake for irrigation purposes). Future land use is not expected to differ significantly from current land use practices.

6.1.3 Current Water Use

The lower portion of the Ogallala Formation is the primary regional aquifer in the vicinity of CAFB for potable and irrigation water. The dissolved solids in the aquifer range from 250 to 500 mg/L (Woodward-Clyde, 1992). The Ogallala aquifer extends continuously from Wyoming and South Dakota into New Mexico and Texas. The Ogallala aquifer rests on Dockum Group redbeds, which serve as the basal confining layer in east central New Mexico. The aquifer has a southeasterly regional gradient of about 10 to 15 feet per mile. CAFB presently obtains water from a system of nine on-base water wells. All of the wells located on the base are completed in the Ogallala aquifer and range from 357 to 415 feet deep and have yields ranging from 50 to 820 gallons per minute (gpm). The wells incorporate multiple screens and derive water from interbedded sands of the Ogallala Formation (Radian, 1992). The location and construction of all on-site wells and all off-site wells located within one-mile of the landfill are presented in Section 2.3.2.

6.2 Identification of Chemicals of Potential Concern

Contaminants of potential concern for Landfill No. 4 were identified following guidance in Chapter 5 (Data Evaluation) of the *Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual (Part A)* (USEPA, 1989a). USEPA guidance stipulates the following nine steps to evaluate analytical data for a comprehensive risk assessment:

1. Gather all data available from the site investigation and sort by medium;
2. Evaluate the analytical methods used;
3. Evaluate the quality of data with respect to sample quantitation limits;

4. Evaluate the quality of data with respect to qualifiers and codes;

5. Evaluate the data with respect to blanks;

6. Evaluate tentatively identified compounds;

7. Compare potential site-related contamination with background;

8. Develop a set of data for use in the risk assessment; and

9. If appropriate, further limit the number of chemicals to be carried through the risk assessment.

6.2.1 Step 1: Data Available from Site Investigation

Analytical data from an RI and on RFI performed at Landfill No. 4 have been used in this risk assessment. The RI was performed in February 1985 under the Installation Restoration Program (IRP) with results reported in a September 1986 document titled *Installation Restoration Program, Phase II - Confirmation/Quantification Stage 1*. The RFI was performed in the fall of 1992 and results are reported in this document which complies with both CERCLA and RCRA requirements.

During the 1985-86 RI, seven borings were drilled 60-feet deep. Soil samples were collected and analyzed for organic and inorganic constituents. All samples were collected between 0 and 12 feet BGL, which was within the landfill confines, and below the landfill between 55 and 60 feet BGL. Metal concentrations were within background levels, oil and grease detections were considered to be from natural sources, and no organic constituents were detected (Radian, 1986). Analytical methods used to determine metal concentrations in soil samples in 1985 were the same as the analytical methods performed in 1992. The 1985 organic analysis reported all concentrations as non-detects; however, the detection limits for the 1985 data were higher than for the 1992 data. Because the organic data were not comparable and Quality Assurance/

Quality Control (QA/QC) were not available, the 1985 organic analyses were not used in this risk assessment.

The purpose of the 1992 RFI was to supplement the 1985 RI data. In the 1992 investigation, 10 borings were drilled 62 feet deep and soil samples were collected at intervals from below the bottom of the landfill to approximately 62 feet BGL. In addition, surface soil samples were collected at five locations. Both organic and inorganic data from the 1992 samples were evaluated in this risk assessment. Appendix D presents analytical data used in the risk assessment.

6.2.2 Step 2: Evaluation of Analytical Methods and Results

A detailed evaluation of the analytical methods used and a QA/QC evaluation of the data are presented under separate cover in the *Quality Control Summary Report* (QCSR) (Radian, December 1992). The QA/QC evaluation of the data was a factor in choosing the list of chemicals of potential concern. Some of the QA/QC concerns presented in the QCSR have been resolved through reanalysis of antimony and thallium. A summary of the QA/QC concerns and resolutions that pertain to this risk assessment are discussed below.

- All 3 equipment blanks and all 7 method blanks analyzed with the field samples were reported as containing diesel. Reporting limits ranged from 47 to 50 μg/L and 2500 to 5000 μg/kg. Although reported as diesel (the contaminant eluted within the diesel retention time), the chromatographic pattern for the blank and field results do not match the characteristic pattern for diesel. Since the chromatographic pattern for the field sample results and the blank results match, the contaminant listed as diesel in the report may be due to laboratory contamination (see Appendix K for further detail). To provide the most conservative estimate of risk, the contaminant was included as diesel in this risk assessment.

- Methylene chloride was detected in 8 of 19 trip blanks. In 3 trip blanks, methylene chloride was reported at less than three time the reporting limit (5 μg/L). In 5 trip blanks, methylene chloride was reported at less than the reporting limit (5 μg/L). Based on the detention in the trip blanks, methylene chloride detected in samples CAN-104-4I-01, CAN-104-4I-03, CAN-104-4I-04, CAN-104-4I-05, CAN-104-4I-06, CAN-104-4I-10, CAN-104-4I-11, CAN-104-4I-13, and CAN-104-4I-14 may be due to contamination.

- Matrix spike results for arsenic may be biased low by about 30 percent. Sample results corrected for this bias were not significantly different from background.

- Seven of the sixteen lead matrix spike samples were recovered below the accuracy objectives which may suggest that lead results are biased low. Sample results corrected for this bias were not different from background.

- All of the selenium matrix spike results are below the acceptance criteria of 75-125% which suggests that the selenium results may be biased low by 50 percent. Sample results corrected for this bias were not different from background.

- Ten percent of the samples for antimony were reanalyzed by graphite furnace atomic absorption (AA). Antimony was not detected in these samples at detection limit of 0.60 mg/kg; however, matrix spikes associated with these samples indicate that the results may be biased low by about 80% which could result in an actual detection limit of 3.0 mg/kg. Sample results corrected for this bias were not different from background.

- Ten percent of the samples were reanalyzed for thallium by graphite furnace AA to achieve a detection limit of 0.5 mg/kg. No thallium was detected in these samples. However, matrix spikes associated with these samples indicate that the results may be biased low by about 30% which could result in an actual detection limit of 0.7 mg/kg.

6.2.3 Step 3: Quantitation Limits

RFI data reports provide reporting limits (RLs) specific to each sample. Sample RLs take into account sample characteristics (e.g., matrix, dry weight), sample

preparation (e.g., sample volumes), and analytical dilutions. RLs represent the lower bound of reliable laboratory data using multiple instruments and are the equivalent of method quantitation limits (the minimum concentration that can be measured and reported). The RL reported for each sample is the lowest concentration available and is used as the sample quantitation limit (SQL) for this risk assessment. RLs are not available for tentatively identified compounds (TICs).

For the purposes of this risk assessment, a positive result included values at and below the RL. If a chemical was not detected in any sample, it was eliminated from the list of chemicals of potential concern. If a chemical was detected in some but not all samples, one-half the RL was used as a proxy concentration for non-detects.

One half the RL was not used as a proxy concentration for chemicals with unusually high RLs to avoid incorporating a high bias in the data. Therefore, for these chemicals (2,4-D, 2-Hexanone, 4-Methyl-2-pentanone (MIBK) and Xylenes) only those samples showing detections were used in this risk assessment.

Chemicals for which positive data are available in at least one sample are listed in Table 6-1. Data associated with the chemicals to which no uncertainties are attached concerning the assigned identity of the chemical or the significance of site-related concentrations compared to background concentrations (inorganic chemicals only) are appropriate for use in the quantitative risk assessment.

6.2.4 Step 4: Data Qualifiers or Codes

Data qualifiers or codes were presented with the analytical results so that uncertainties could be identified and evaluated. Data with qualifiers that indicate known identities, but uncertain concentrations, were used in this risk assessment. Laboratory qualifier codes associated with the 1992 analytical data are described in this subsection.

Table 6-1

Contaminants Positively Detected in Soil at Cannon AFB Landfill No. 4

Analytes	Chemical of Potential Concern	Rationale for Assessment
ORGANICS		
Acetone	yes	Potential historical importance
Aldrin	yes	Detected frequently
alpha-Pinene	no	Tentatively Identified Compound
Benzothiazole	no	Tentatively Identified Compound
beta-BHC	yes	Detected frequently
Bis(2-ethylhexyl)phthalate	no	Less than 10 times the EB
Bromocyclohexane	no	Tentatively Identified Compound
Butoxyethanol	no	Tentatively Identified Compound
Cyclohexenone	no	Tentatively Identified Compound
Cyclohexenol	no	Tentatively Identified Compound
delta-BHC	yes	Detected frequently
Decanal	no	Tentatively Identified Compound
2,4-D	yes	Potential historical importance
4,4'-DDD	yes	Potential historical importance
4,4'-DDE	yes	Detected frequently
4,4'-DDT	yes	Detected frequently
Dichloroprop	yes	Detected frequently
Diesel	yes	Detected frequently*
Endrin	yes	Potential historical importance
2-Ethyl-1-hexanol	no	Tentatively Identified Compound
Ethylacetate	no	Tentatively Identified Compound
gamma-BHC	yes	Potential historical importance
Heptachlor epoxide	yes	Potential historical importance
2-Hexanone	yes	Potential historical importance

Table 6-1

(Continued)

Analytes	Chemical of Potential Concern	Rationale for Assessment
Hydrocarbons	yes	Detected frequently
Hydroxymethylpentanone	no	Tentatively Identified Compound
MCPP	yes	Detected frequently
4-Methyl-2-pentanone	yes	Potential historical importance
Methyl acetate	no	Tentatively Identified Compound
Methylene chloride	yes	Detected frequently
Nonanal	no	Tentatively Identified Compound
2-Propanol	no	Tentatively Identified Compound
2,4,5-T	yes	Detected frequently
Terpineol	no	Tentatively Identified Compound
Trichloropropene	no	Tentatively Identified Compound
Toluene	yes	Detected frequently
Unknown	no	Tentatively Identified Compound
Unknown alchol	no	Tentatively Identified Compound
Unknown aldehyde	no	Tentatively Identified Compound
Unknown alkane	no	Tentatively Identified Compound
Unknown amide	no	Tentatively Identified Compound
Unknown B	no	Tentatively Identified Compound
Unknown carboxylic acid	no	Tentatively Identified Compound
Unknown cyclic ether B	no	Tentatively Identified Compound
Unknown dimethyl naphthalene	no	Tentatively Identified Compound
Unknown phosphates	no	Tentatively Identified Compound
Unknown sterol	no	Tentatively Identified Compound
Xylenes	yes	Potential historical importance

Table 6-1

(Continued)

Analytes	Chemical of Potential Concern	Rationale for Assessment
INORGANICS		
Aluminum	no	Within background concentrations
Antimony	no	Within background concentrations
Barium	no	Within background concentrations
Beryllium	no	Within background concentrations
Cadmium	no	Within background concentrations
Calcium	no	Necessary nutrient
Chromium	no	Within background concentrations
Cobalt	no	Within background concentrations
Copper	no	Within background concentrations
Iron	no	Necessary nutrient
Lead	no	Within background concentrations
Magnesium	no	Necessary nutrient
Manganese	no	Within background concentrations
Mercury	no	Less than 5 times MB
Nickel	no	Within background concentrations
Potassium	no	Necessary nutrient
Sodium	no	Necessary nutrients
Vanadium	no	Within background concentrations
Zinc	yes	Detected frequently

EB - Equipment Blank
MB - Method Blank
* - Result did not match characteristic diesel pattern, but elutes in the assigned retention time window. To provide the most conservative estimate of risk, the contaminant was quantitated or diesel.

6.2.4.1 All Methods

Q Outside acceptance criteria.

C Analyte identification and concentration confirmed by second column.

B Blank subtraction was not performed for analytes detected in associated system, method, or field blank. Use of these data in the risk assessment is discussed in Section 6.2.5.

@ Reported result was less than five times the RL. The reported value was used in the risk assessment.

J The RL is higher than the reported result. The value was used in the risk assessment.

D Sample diluted for analysis of analyte identity.

6.2.4.2 Methods 8080/8150

G Presence of analyte confirmed by second column analyses but concentration is uncertain.

6.2.4.3 Method 8015M

G Result does not match the characteristic diesel pattern, but elutes in the retention time window, so was quantited as diesel (see Appendix K).

6.2.5 Step 5: Blanks

Field and laboratory blanks were included in the analytical program to provide an indication of the introduction of constituents into samples during collection or analysis. Positive results qualified by the presence of the analyte in associated blanks were evaluated according to USEPA guidance (USEPA, 1989a). Sample results for

common laboratory contaminants (acetone, methyl ethyl ketone, methylene chloride, toluene, and the phthalate esters) were considered positive only if the concentration in the sample exceeded ten times the maximum amount detected in any associated blank. If the concentration of a common laboratory contaminant was less than or equal to ten times the blank concentration, the constituent was considered a laboratory contaminant; the blank concentration was considered to be the RL. Chemicals that are not common laboratory contaminants were evaluated in a similar way, using five times the maximum blank-related concentration to distinguish between non-detects and contamination. Table 6-1 identifies those analytes eliminated for these reasons. Appendix D presents analytical data and blank data for the list of positive chemicals.

As discussed in Section 6.2.2 a contaminant listed as diesel was reported in all 3 equipment blanks and all 7 method blanks. All reported blank results were within three times the reporting limit. However, the chromatographic pattern of the contaminant did not match the characteristic pattern for diesel. Therefore, this contaminant may not be diesel. All data reported for this analyte was flagged with a G as discussed in Section 6.2.4.3. Since this analyte appeared in all the blanks and does not match the pattern for diesel, this analyte is considered a laboratory contaminant (see Appendix K).

6.2.6 Step 6: Tentatively Identified Compounds (TICs)

The mass spectral analyses of samples for VOCs and SVOCs result in the identification and quantitation of compounds given in the Target Compound List (TCL). Sometimes the mass spectra indicate the presence of additional organic compounds that are not on the TCL. These spectra are compared to spectra in the mass spectral data library, and the compounds are tentatively identified based on similarities to the library spectra. These compounds are called tentatively identified compounds (TICs), and the assigned identity and quantitation of the compound is, in most cases, highly uncertain. If a compound cannot be identified by the mass spectral data library, then the compound is

listed as an unknown compound or an unknown of a specific organic group (e.g., ester, carboxylic acid, alkane, etc.). TICs listed as unknowns cannot be identified. TICs that are assigned a tentative name could be quantified relative to a standard of the compound. However, this would require recollecting a sample and obtaining a standard containing the TIC. This is not typically done. TICs may be intermediate breakdown or degradation products of larger organic compounds.

Compounds which are unknowns are not included in the list of concern since risk assessments can only be conducted on an identified or tentatively identified compound (a named TIC). The risk associated with a TIC is always uncertain since the actual identity and concentration of the compound is uncertain. SW-846 provides procedures to estimate the concentration of TICs. These estimates, however, are highly uncertain and could be orders of magnitude higher or lower than the actual concentration. When evaluating TIC data, it is important to note that the assigned identity may be incorrect and that the quantitation is likely to be inaccurate. For the Landfill No. 4 evaluation, TICs were eliminated from the risk assessment, as per EPA risk assessment guidance, after reviewing frequencies of detection and estimated concentration ranges.

6.2.7 Step 7: Background Concentration Comparison

Samples for analysis of background metals concentrations at CAFB were collected in December of 1991. Soil samples were taken from two on-base sites outside landfill areas. Analytical results from these two sites were compiled and a range for background concentrations was developed for each metal collected. Appendix F presents background information for metals documented in the Woodward-Clyde (1992) report. Averages of analytical results and the highest detected concentrations for metals collected at Landfill No. 4 in 1992 and 1985 were compared to these background ranges. An evaluation of background versus landfill concentration was performed on the following metals:

- Aluminum;
- Antimony;
- Barium;
- Beryllium;
- Cadmium;
- Chromium;
- Cobalt;
- Copper;
- Lead;
- Manganese;
- Nickel;
- Vanadium; and
- Zinc.

There were no differences between background concentrations and site samples for these metals with the exception of zinc. Concentrations of zinc at the landfill were high enough to be considered in the list of chemicals of potential concern.

The Wilcoxon rank sum test was performed on landfill and background results for aluminum, barium, chromium, cobalt, lead, manganese, nickel, and vanadium. The number of detects in the background data for antimony, copper, cadmium, and zinc were insufficient to run a statistical analysis. For these metals, sample and background concentrations were compared using reporting limit ranges, maximum concentrations detected and averages that included half the detection limit as a proxy result for all non-detects. These comparisons provided a valid method for determining if site samples differed from naturally occurring background concentrations. A discussion of statistical methods and background concentrations is presented in Appendix E.

6.2.8 Steps 8 and 9: Data Set Used in the Risk Assessment

USEPA guidance (USEPA, 1989a) stipulates that the list of chemicals of potential concern include chemicals that were:

1) Positively detected in at least one sample in a given medium, including: a) chemicals with no qualifiers attached (excluding samples with unusually high RLs); and b) chemicals with qualifiers attached that indicate known identities but unknown concentrations (e.g.; J-qualified data);

2) Detected at levels significantly above levels of the same chemicals detected in associated blank samples; and

3) Detected at levels significantly above naturally occurring levels of the same chemicals.

Appendix D presents all analytical data used in this risk assessment for chemicals of potential concern.

6.2.9 Data Limitations/Data Gaps

During this investigation only soil samples were collected and analyzed. Groundwater and air samples were not taken, which limits the assessment of chemicals of concern to contaminants found in the soil on or beneath Landfill No. 4. Limitations of analytical methods in detection of chemicals below the instrument RL, use of estimated values below the RL and values that were close to the RL further limit the data used in this risk assessment. Limited background data prevented a more extensive evaluation of site metal concentration versus background metal concentrations. The limitations associated with analytical methods tend to result in the underestimation of risks. Use of estimated values may result in overestimation of risks, while the use of values close to the RL could either over or underestimate risks.

6.3 Exposure Assessment

Exposure assessment is the determination or estimation (qualitative or quantitative) of the magnitude, frequency, duration, and route of human exposure for the chemicals of potential concern that are present at, or may have migrated from, a site. Sections 2 and 3 of this report provide the detailed description of the physical characteristics of the base and the surrounding area, and a brief description of the exposure setting is presented in Section 6.1. These characterizations were used to assess the potential exposures associated with Landfill No. 4.

A conceptual site model was prepared for the human health and ecological risk assessment. It includes sources of contamination, potential migration pathways and potentially exposed populations.

Human exposure to the chemicals of potential concern were evaluated by performing the following tasks and are discussed separately in this subsection.

1. Identification of releases into various media;
2. Determination of fate and transport in release media;
3. Evaluation of exposure points and exposure routes;
4. Determination of exposure scenarios;
5. Quantification of estimated exposure concentrations; and
6. Estimation of chemical intakes for individual pathways.

The following subsections discuss the conceptual site model, the tasks used to evaluate human exposure for the chemicals of potential concern, and uncertainties associated with the exposure assessment. Appendices G and H present a detailed discussion of how estimated exposure concentrations were calculated.

6.3.1 Conceptual Site Model

Based on available information, a conceptual site model was developed to provide an understanding of the sources of contaminants, potential migration pathways of contaminants, and potential receptors considering geologic and hydrologic information. The conceptual site model is presented schematically in Figure 6-2 and provides the basis for the human health and ecological risk assessment. As discussed in Section 6.2, chemicals of potential concern identified for use in this risk assessment include:

- Acetone;
- Aldrin;
- beta-BHC;
- delta-BHC;
- gamma-BHC;
- 2,4-D;
- 4,4'-DDD;
- 4,4'-DDE;
- 4,4'-DDT;
- Dichloroprop;
- Diesel;
- Endrin;
- Heptachlor epoxide;

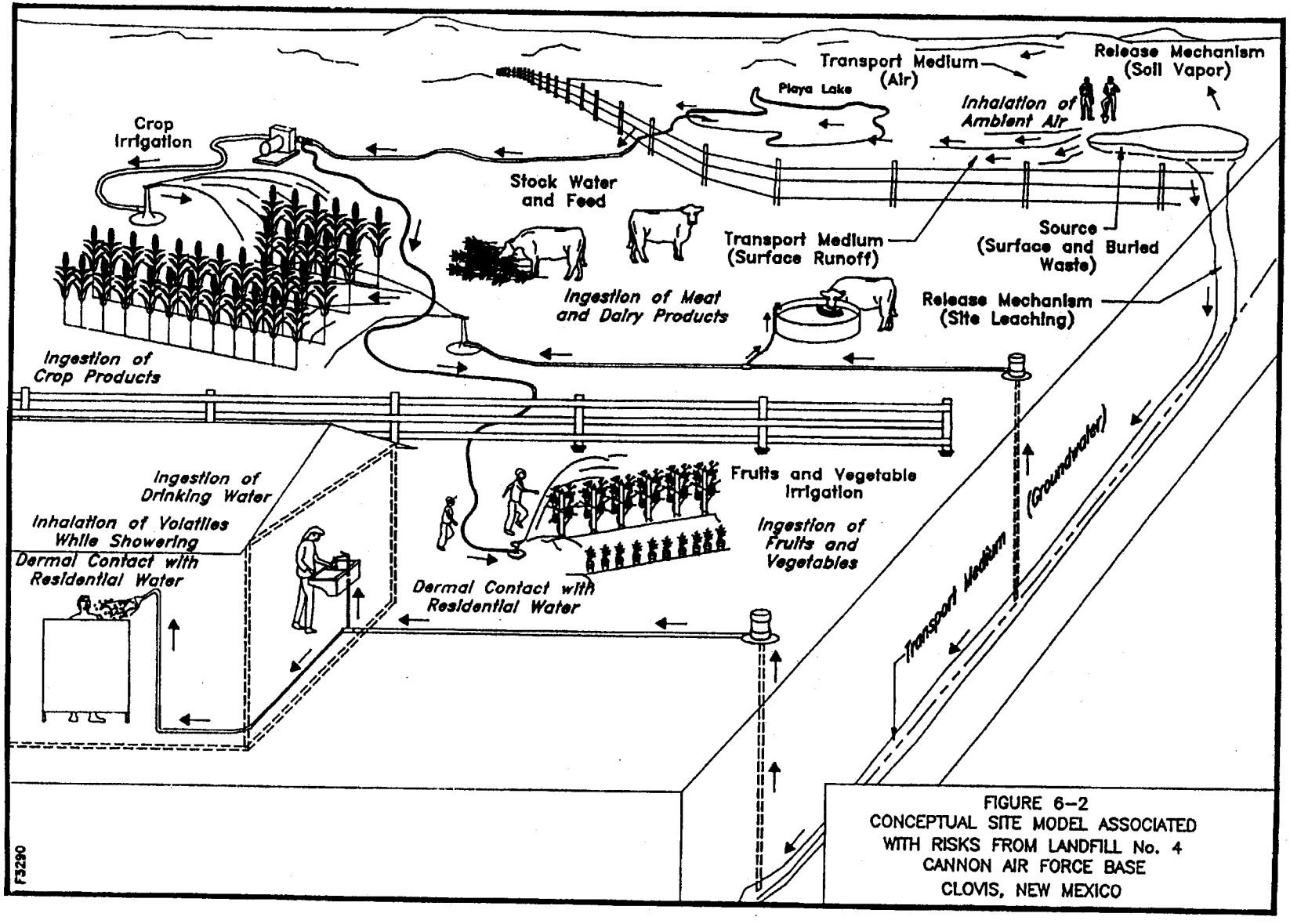

FIGURE 6-2
CONCEPTUAL SITE MODEL ASSOCIATED
WITH RISKS FROM LANDFILL No. 4
CANNON AIR FORCE BASE
CLOVIS, NEW MEXICO

- 2-Hexanone;
- Hydrocarbons;
- Methylene chloride;
- 4-Methyl-2-pentanone;
- MCPP;
- Toluene;
- 2,4,5-T;
- Xylenes; and
- Zinc.

Potentially sensitive members of the population that may be exposed to chemicals originating from Landfill No. 4 include: children, the elderly, and those with preexisting conditions that may be aggravated by exposure to chemicals of potential concern. Locations where sensitive members of the population might reside include hospitals, retirement/nursing homes, schools, nurseries, and day care centers. Medical services for CAFB personnel and their dependents are provided by two general hospitals in the surrounding communities and by the base hospital. The High Plains Hospital is located several miles east of the base, toward Clovis, New Mexico. On-base support facilities, including schools, hospitals, and day care centers are located primarily northwest of the airfield area upgradient and generally upwind of Landfill No. 4. Nearby off-base facilities include a dairy, a barber shop, and a convenience store (Allsups). However, these facilities represent the general population and not sensitive subpopulations.

6.3.2 Task 1: Identification of Releases into Various Media

For the purposes of this risk assessment, the source of contamination is represented by the wastes that have been applied to Landfill No. 4 in the past. No further waste application to Landfill No. 4 is projected in the future. These wastes are the sole source of soil, and potential air, groundwater, and surface water, contamination from the landfill. The potential releases to media from contaminants originating at Landfill No. 4 addressed in this risk assessment are those to 1) ambient air, 2) groundwater, and 3) surface water (playa lake) via runoff from the landfill. Releases to the groundwater have been included even though the time required for the constituents to travel to the groundwater and the assumed attenuation factor indicate that the concentrations of chemicals in the groundwater will be insignificant (See Appendix G-2).

Results of chemical analyses of soil samples collected during the RFI indicated that contaminants are present in the soil beneath Landfill No. 4 to depths of 62 feet BGL. Sections 5.1 through 5.3 summarize the analytical data characterizing contamination at the site. Chemicals detected in soil samples that are above reporting limits and the selection of contaminants of potential concern are discussed in Section 6.2.

The primary source of contamination considered in this risk assessment is soil. While not analyzed during the site investigation, ambient air, groundwater, and surface water could potentially be contaminated with the chemicals of potential concern and may represent a secondary source of contamination. Both primary and secondary sources of contamination are considered in this risk assessment.

6.3.2.1 Releases to Air

Volatilization of organic compounds from surface soil contamination, volatilization of organic compounds from buried wastes and wind entrainment of

contaminated dust were considered to evaluate potential releases to air from Landfill No. 4.

Air impacts were estimated using predictive equations recommended by the USEPA. Emission rates of chemical compounds derived from volatilization and wind entrainment of contaminated dust from Landfill No. 4 were estimated and entered into the USEPA approved Industrial Source Complex Short-Term (ISCST2) dispersion model to estimate worst-case maximum short-term (hourly) and average annual chemical concentrations in the atmosphere at the periphery of the landfill.

Volatile compounds entrained in the soil may volatilize and eventually disperse into the atmosphere above the ground surface by simple diffusion. The chemicals detected at the site during this investigation with the potential to volatilize were hydrocarbons, toluene, methylene chloride, diesel fuel, acetone, 4-methyl-2-pentanone, and 2,4,5-T. No purgeable halocarbons or aromatic compounds were detected in the surficial soil (ranging between 0 to 12 feet) covering the landfill during the previous investigation (Radian, 1986). There is a potential for volatile chemicals to migrate through the soil pores and eventually volatilize to the atmosphere. Release of volatile organics from surface and subsurface soils is considered to occur for purposes of this risk assessment. Metals were also detected in surficial soils, but only zinc was significantly different from background soil concentrations (Radian, 1986 and 1992). However, volatilization of metals is not considered a significant environmental fate mechanism.

Non-volatile chemicals and metals can potentially enter the atmosphere as a result of wind entrainment of contaminated surface soil. Waste must be present in surface soil and uncovered by impervious materials or vegetation to be subject to fugitive dust generation. The generation of fugitive emissions in the form of dust/particulates may be effectively prevented, since Landfill No. 4 is currently vegetated. However,

because of wind conditions in the area, fugitive dust generation was evaluated in order to assume a worst-case scenario that would further support a no-action decision.

Organic materials in the waste are subject to microbial decomposition and will begin to generate a variety of gases that may vent to the atmosphere. Low soil moisture content inhibits waste decomposition resulting in a decreased rate of gas formation. Negligible amounts of organic materials were detected at the site; therefore, soil gases generated at Landfill No. 4 were considered to be negligible and were not evaluated for human health risks.

The playa lake, south of Landfill No. 4, is recharged primarily by treated effluent from the sewage lagoons and by storm water runoff from the site. Without recharge, playa lakes persist for only a few days or weeks. Water is lost from playa lakes by infiltration to the soil and by evaporation (Radian, 1986). Volatilization of organic compounds from the surface water is possible; however, volatilization of organics from the playa lake is not expected to be significant because contamination of the playa lake with volatile organic compounds is predicted to be minimal. Several contaminants were detected at or near the surface soil at Landfill No. 4. However, surface water runoff modeling presented in Appendix G-2 indicates that the concentration of contaminants in the playa lake are low. Therefore, this scenario was not evaluated in the risk assessment.

6.3.2.2 Releases to Groundwater

A secondary release mechanism from the soil includes the potential for leaching of chemicals into groundwater. Leachate is composed of liquid present in the waste, liquid entering the unit from precipitation, and chemical compounds that are dissolved or suspended in this liquid. Many factors affect the potential for contaminant migration including: 1) chemical characteristics; 2) waste application practices; and 3) soil characteristics. Landfill No. 4 is underlain by a caliche profile that extends from the base of the topsoil to a depth of probably less than 60 feet. The physical properties of

the caliche are highly variable. The caliche may serve as a barrier between the landfill and the underlying Ogallala aquifer, 260 feet BGL. Alternately, the caliche could serve as a conduit to the groundwater depending on its porosity. However, the potential for production of leachate to contaminate groundwater is generally considered to be low because of the limited rainfall and high evaporation rate in this arid environment.

Groundwater flow and contaminant transport were modeled using analytical solutions for estimating the time of travel of soil moisture through unsaturated soil from the bottom of the landfill to the Ogallala aquifer, assuming steady-state conditions in the soil column. Appendix G-2 contains a discussion of the methodology used to calculate groundwater concentrations.

Initially, the time of travel of unsaturated soil moisture from the bottom of the landfill to the water table was estimated. The time of travel was estimated to be 173 years. The fate and movement of organic materials in subsurface environments are governed largely by sorption and biodegradation. Sorption affects the rate of travel of organic material, relative to that of water through subsurface systems (McCarty et. al., 1981). Solutes which may be sorbed/desorbed on soil, such as metals and pesticides, are expected to migrate at a slower apparent velocity than the soil moisture, and will require a longer period of time to reach the water table.

The ultimate fate of organic compounds in the subsurface system depends upon biodegradative processes. The attenuation of organic species from biological, chemical, and physical degradation was estimated assuming a first-order decay mechanism. Fate and transport data were obtained from the *Soil Transport and Fate Database* (Sims et. al., 1991).

Significant contamination of the water table with contaminants originating at Landfill No. 4 is highly unlikely in the future. However, in order to assume a worst-

case scenario, further evaluating the basis for a no-action decision, this scenario was evaluated in the risk assessment.

6.3.2.3 Releases to Surface Water

One of the most prominent geomorphic features in the vicinity of CAFB are blowouts. Blowouts are broad shallow depressions which form as a result of soil erosion by wind. Runoff collects in blowouts to form ephemeral playa lakes during periods of rainfall. Generally, drainage in the area of Landfill No. 4 is to the south toward the playa lake. Therefore, direct release of surface contaminants detected at the landfill to surface water may occur at the site. Several contaminants were detected in surficial soils. Results from surface water modeling indicated that contaminants associated with runoff from the site may potentially contaminate the playa lake located just south of the landfill. Modeling results are presented in Appendix G-2.

6.3.3 Task 2: Determination of Fate and Transport in Release Media

Several of the contaminants detected at Landfill No. 4 may be transported from one medium to another by processes of solubilization, adsorption, bioaccumulation, or volatilization. Primary transport media for chemical substances in the environment include the air, groundwater, surface water, and soil. The potentially significant contaminant transport mechanisms considered for this risk assessment include:

- Emissions to ambient air;
- Migration of contaminated groundwater;
- Discharge of groundwater to surface water (playa lake);
- Direct release of contaminants in soil to surface water; and
- Uptake by plants and animals.

6.3.3.1 Release to and Transport in Ambient Air

Organic chemicals in the surficial soils of Landfill No. 4 have the potential to volatilize to the atmosphere. Ambient air monitoring has not been conducted at the landfill to determine the contaminants and/or contaminant concentrations in the air. Several of the contaminants detected in soils at Landfill No. 4 have the potential for volatilization from the soil. Non-volatile organics and metals can enter the atmosphere via wind entrainment of contaminated surface soil. Small particles which carry pesticides or their degradation products may be distributed through the air. Potential contamination of the air at the perimeter of Landfill No. 4 was estimated using conservative assumptions such as: 1) no plume rise; 2) concentration over a reduced area of the landfill; and 3) uniform distribution of subsurface contamination.

6.3.3.2 Release to and Transport in Groundwater

The detection of contaminants beyond the maximum excavation depths of the landfill indicate that contaminants may have migrated downward and suggests a potential for leaching into the underlying Ogallala aquifer. The lower portion of the Ogallala Formation is the primary regional aquifer for both potable and irrigation water. Factors affecting the mobility of waste constituents or their metabolities include potential for adherence to soil particles, and water solubility.

Any leachate reaching the aquifer would mix with the groundwater and flow laterally, generally in the direction of groundwater flow. Groundwater flows to the southeast with a regional gradient of about 10 feet/mile. Some chemicals can float on top of groundwater in a separate immiscible phase because of differing physical and chemical properties. Other chemicals may dissolve and move with the groundwater, or sink to the bottom of the aquifer and move more slowly. The majority of the contaminants detected at Landfill No. 4 were pesticides, which generally are only slightly soluble in water.

6.3.3.3 Discharge to and Transport in Surface Water

Most precipitation that falls in the Clovis area is lost to evapotranspiration and shallow infiltration before runoff occurs. Generally, drainage in the Landfill No. 4 area is to the south, toward the playa lake (Radian, 1986) which was chosen as the closest surface water receptor. Therefore, direct release of contaminants detected at the surface of the landfill to the playa lake is possible. Toluene and methylene chloride are readily leached from soils with low organic content and are moderately soluble in water. However, the majority of the contaminants detected at Landfill No. 4 were pesticides which generally are only slightly soluble in water. The transport of these compounds (pesticides) in runoff is primarily caused by transport of particulates to which these compounds are bound. Because these compounds are bound strongly to soil, they are likely to be subject to sedimentation. Zinc was also detected in surficial soils. Metals are generally not very mobile in most soil systems although the rate of transportation is dependent upon characteristics of the soil. Therefore, erosion by surface water, which is unlikely because of the arid climate, would be required for transport of this contaminant to the playa lake.

Contaminant levels in the playa lake water may also be affected by the rate of groundwater discharge. However, the small concentration of contaminants estimated in the groundwater indicate that groundwater discharge to the playa lake is insignificant.

The playa lake does not discharge to any waterway, but is used to irrigate nearby crops by a local farmer.

6.3.3.4 Uptake by Plants

Land use in the area surrounding CAFB is primarily agricultural. During the site visit, agricultural fields were noted to the east and south of Landfill No. 4. The crops grown on the fields vary depending on the season and the market price. Wheat,

used for human consumption, is the primary crop grown on the fields near Landfill No. 4. However, alfalfa, corn, and milo are also grown on these fields and are used as cattle feed (base Natural Resources Environmental Group, 1992). Agricultural crops are subject to accumulation of contaminants via root uptake of any contaminants present in the soil or water used for irrigation.

The effluent to the playa lake located just south of Landfill No. 4 and groundwater is used by a local farmer for irrigation purposes. Therefore, plants may be potentially exposed to contaminants originating from Landfill No. 4 and it is important to examine the possible accumulation of contaminants in crops. The majority of the chemicals detected at Landfill No. 4 are lipophilic and some have long half lives. As a result, they tend to bioaccumulate in the food chain. While the groundwater modeling (Appendix G-2) indicates that these chemicals are not predicted to enter the groundwater in significant quantities, this pathway was assessed in order to assume a worst-case scenario, further supporting a no-action decision. In addition, irrigation using playa lake water was assessed because several contaminants were predicted to migrate to the playa lake (via runoff).

6.3.3.5 Uptake by Livestock

There is a dairy located within a mile to the northeast of Landfill No. 4 and cattle were seen at the perimeter of the base, northeast of the site during the site visit. Cattle ranching occurs throughout Curry County and the land surrounding CAFB consists of irrigated crops and pasture land used in the cattle ranching and dairy business (Radian, 1986). Livestock, including beef and dairy cattle, may be subject to accumulation of contaminants originating from Landfill No. 4 via ingestion of contaminants in feed. Several crops that are typically used for livestock feed are grown nearby. As cattle ingest contaminated feed, the contaminants can be absorbed by the gastrointestinal tract. The more lipophilic compounds may accumulate in the milk and edible meat following gastrointestinal absorption, providing a mechanism for human

exposure. Locally raised beef and dairy cattle are sustained primarily on locally grown (approximately 80%) agricultural products (New Mexico Agricultural Extension Office, 1992). To evaluate a worst-case scenario, 100% of the feed for beef cattle and dairy cows was assumed to come from crops grown near Landfill No. 4. Although this worst-case scenario is conservative, it provides additional justification for a no-action decision.

6.3.4 Task 3: Evaluation of Exposure Points and Exposure Routes

Normally, potential pathways are segregated into those that currently exist and those that may exist in the future. Current potential exposure pathways are those that may exist as a result of the current extent of contamination combined with existing land use and activity patterns. Future exposure pathways are considered to be those which may exist at some time in the future as a result of the current extent of contamination, combined with future land use and activity patterns. Human exposure to contaminants originating at Landfill No. 4 could potentially occur on-site and in areas adjacent to the landfill. Access to the site is limited and currently there are no ongoing invasive activities occurring. Therefore, direct human contact is currently considered to be unlikely. Incidental ingestion of and dermal contact with soil were assessed as potential sources of exposure to contaminants at Landfill No. 4 for the future occupational scenario, since land use at the site could change in the future. Use of potentially contaminated surface water from the playa lake and groundwater for irrigation of agricultural crops consumed by humans and for feed crops consumed by livestock may serve as indirect pathways of human exposure to contaminants from the landfill. Volatilization of volatile chemicals and fugitive dust generation at the site were also assessed as potential sources of exposure to contaminants originating at Landfill No. 4. Potential site releases are expected to be low-level and relatively continuous in nature. Short-term high level releases are unlikely to occur because the site has been closed since 1968.

6.3.4.1 Receptors

Potential receptors considered in this risk assessment are: 1) animal and plant receptors; 2) people who consume commercially produced agricultural crops grown at the perimeter of the site; 3) people who consume meat and/or milk from livestock fed on crops grown at the site perimeter and; 4) CAFB personnel, on-site workers, and nearby residents exposed to fugitive dust and volatilized chemicals from the site. A groundwater pathway was not considered in the current residential exposure scenario because migration of contaminants was estimated to take 173 years. Future land uses in the vicinity of the base will not significantly alter the exposure points and exposure routes. The size of the potentially exposed populations could change in the future; however, it would likely increase for some exposure routes and decrease for others.

6.3.4.2 Exposure Pathways

Potential exposure pathways associated with identified receptors were evaluated in order to determine whether they were complete and significant. The route can include media other than the source and the receptor must engage in activity that will cause the exposure to occur. Figure 6-3 depicts potential pathways for contaminants originating at Landfill No. 4 to move from the point of release to the point of human exposure. Pathways that are not complete have been crossed out and numbered to correspond with explanatory footnotes. Pathways that are completed but judged insignificant are indicated with dashed-lines. Potentially significant pathways that exist at the site are indicated with a bold, solid line and include:

1) Ingestion of groundwater: leaching to groundwater; groundwater migration to groundwater well; ingestion of groundwater.

2) Dermal contact with groundwater: leaching to groundwater; groundwater migration to groundwater well; dermal contact while showering.

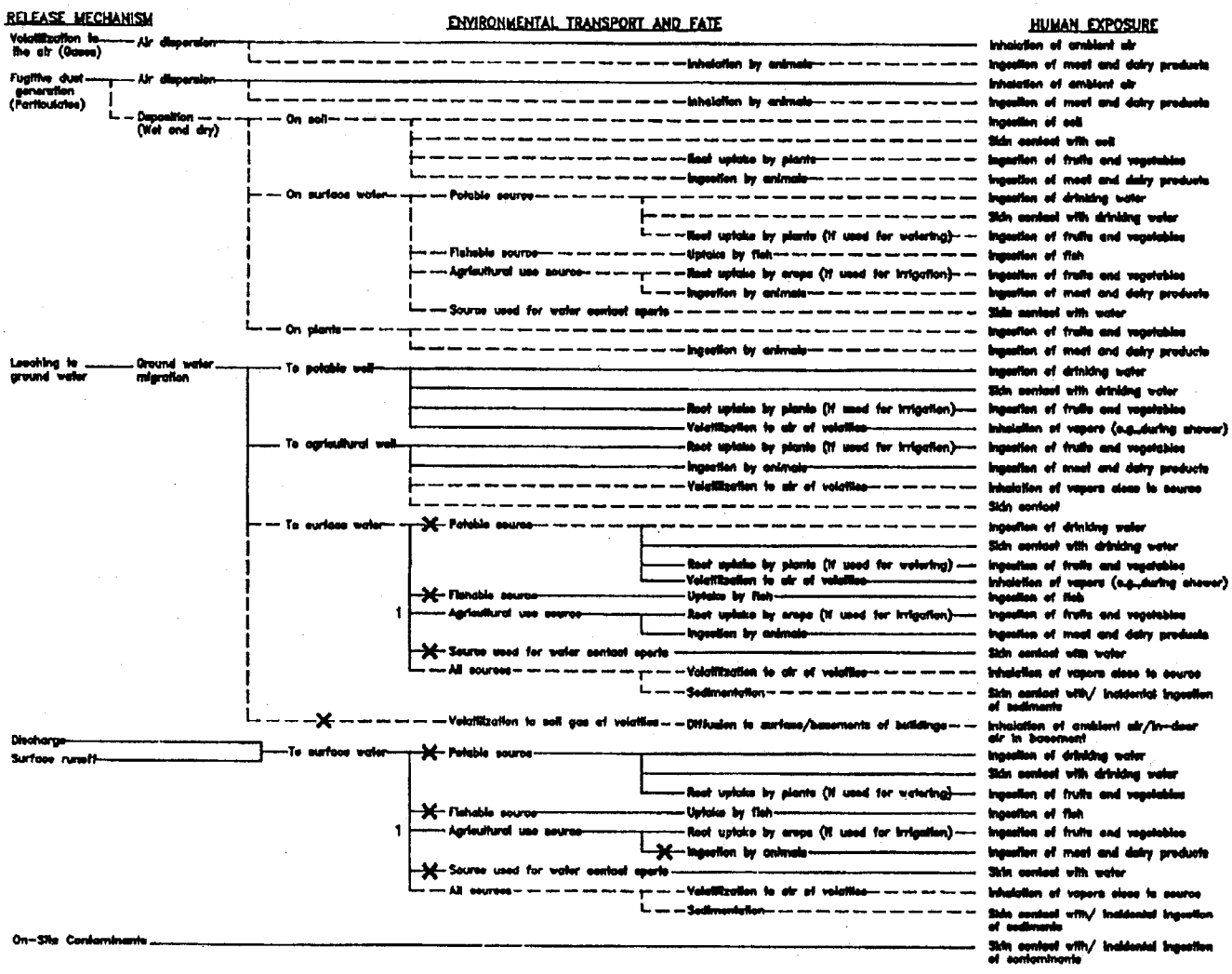

FIGURE 6-3
ENVIRONMENTAL FATE AND TRANSPORT
LANDFILL No. 4
CANNON AIR FORCE BASE
CLOVIS, NEW MEXICO

3) Inhalation of vapor phase chemicals from groundwater: leaching to groundwater; groundwater migration to groundwater well; inhalation of vaporized chemicals while showering.

4) Ingestion of agricultural crops: migration to surface or groundwater; irrigation of crops with surface or groundwater; uptake by plants; ingestion of plants by humans.

5) Ingestion of milk and meat: consumption of contaminated crops by cattle; transfer of contaminants to beef or milk; ingestion of beef or milk by humans.

6) Inhalation of vapor phase chemicals at the site: volatilization from soil; inhalation of volatilized chemicals in ambient air.

7) Inhalation of fugitive dust generated at the site: entrainment of contaminants in soil; dispersion into the atmosphere above the site; inhalation of fugitive dust.

8) Ingestion of/dermal contact with soil: leaching to soil; ingestion of and/or skin contact with soil.

These eight pathways were quantified in this risk assessment.

Pathways that may be complete but are likely to pose insignificant human health risks include: 1) inhalation of vapors volatilized from the playa lake; 2) dermal contact with surficial soils at the site; and 3) dermal contact with surface water drawn from the playa lake for agricultural purposes. The contribution of these exposure pathways is likely to be minor by comparison to exposure following ingestion of groundwater, agricultural crops, and beef or milk. Potentially exposed populations, exposure media, exposure points and exposure routes for complete pathways are identified in Table 6-2. Also noted in this table are the decisions to select pathways for quantitative evaluation and the justification for including or excluding each pathway in the risk assessment.

Table 6-2

Potentially Complete Exposure Pathways at Landfill No. 4, CAFB, New Mexico

Exposure Route, Medium, and Exposure Point	Potentially Exposed Population	Pathway Selected for Evaluation	Reason for Selection or Exclusion
Inhalation of volatile chemicals in ambient air at or nearby site	Base personnel, nearby residents, on-site workers	Yes	Emissions of volatile chemicals can result in inhalation exposure of Base personnel, on-site workers and nearby residents.
Inhalation of fugitive dust in ambient air	Base personnel, residents living nearby, and on-site workers.	Yes	Wind entrainment of contaminated soils can result in inhalation exposure of Base personnel, on-site workers and nearby residents.
Dermal contact with contaminated soil	Future on-site workers.	Yes	There are currently no invasive activities at the site; however, construction may occur on-site in the future.
Ingestion of contaminated soil	Future on-site workers.	Yes	Incidental ingestion of soil could occur during construction activities.
Ingestion of meat and dairy products from cattle exposed to contaminants from playa lake or groundwater (stock water, irrigation of pasture/feed crops).	Consumers of locally produced meat and dairy products and nearby farm families.	Yes	A dairy exists to the northeast of Landfill No. 4 and several stockyards are located in the vicinity of Cannon AFB.
Dermal contact with chemicals in water during agricultural use.	Off-base farmer drawing water from playa lake potentially contaminated with discharge from site and farmers using potentially contaminated groundwater for agricultural purposes.	No	Contribution of dermal contact with water is likely to be minor by comparison to the contribution of ingestion of agricultural products and livestock.
Dermal contact with chemicals in groundwater during home use.	Off-base residents (On-base residents are upgradient).	Yes	This risk assessment assumes use of potentially contaminated groundwater for bathing/showering and other uses, during which dermal contact occurs.
Inhalation of chemicals volatilized from groundwater during home use (while showering).	Off-base residents (On-base residents are upgradient)	Yes	This risk assessment assumes use of potentially contaminated groundwater for bathing/showering and other uses during which inhalation of vapor may occur.

Table 6-2

(Continued)

Exposure Route, Medium, and Exposure Point	Potentially Exposed Population	Pathway Selected for Evaluation	Reason for Selection or Exclusion
Ingestion of contaminated groundwater migrating from site to potable water wells downgradient from site.	On-base workers, base personnel, off-base residents living downgradient from site (on-base residents are upgradient).	Yes	Although groundwater modeling indicates that leaching of contaminants into the water table will only occur in insignificant quantities and far in the future, residents connected to the municipal water supply may be exposed to a limited extent in the future.
Ingestion of fruits and vegetables irrigated with surface water drawn from playa lake currently impacted by runoff from site or potentially contaminated groundwater in the future.	Consumers of locally grown agricultural crops and nearby farm families.	Yes	One farmer draws water from the potentially contaminated playa lake for agricultural purposes. There are agricultural wells in the vicinity of Landfill No. 4 that may potentially be contaminated with groundwater migrating from the site.

6.3.5 Task 4: Determination of Exposure Scenarios

CAFB personnel, on-site workers, and individuals living in areas downgradient and down wind from Landfill No. 4 represent the significant populations potentially exposed to chemicals originating from the site that leach into groundwater, migrate to the playa lake, or are emitted into the atmosphere above the site. The concentration of contaminants in the air originating from Landfill No. 4 is expected to be highest at the site perimeter and this assumption was corroborated by air dispersion modeling results. In order to assume a worst-case scenario that would further evaluate the basis for a no-action decision, contaminant concentrations at the site perimeter (highest) were used for predicting risks associated with all inhalation exposure scenarios.

For chemicals released to the air, the highest concentrations are typically found in the direction that is predominantly downwind of the site. It is anticipated that inhalation exposure will primarily occur on-site and downwind from the site. Therefore, on-base residents (located north of the site) are not likely to be significantly exposed to airborne contaminants via dispersion because prevailing winds in the area are to the south. CAFB personnel and on-site workers working at or near Landfill No. 4 may be exposed chronically or subchronically to air emissions originating from the site depending on length of employment (tour of duty).

If contaminants originating from Landfill No. 4 reach the groundwater, direct human exposure to contaminants could occur in homes where groundwater is used as a potable source or for showering, etc. Human exposure could also occur from the consumption of beef and dairy products from farm animals exposed to potentially contaminated groundwater and feed crops, as well as from human consumption of contaminated agricultural products. Residents living adjacent to the site, who grow and consume agricultural crops grown at the site perimeter as well as beef and dairy products from livestock fed with these crops, represent a "worst-case" scenario. These individuals may be subject to chronic (long-term) exposure to site-related contaminants. Individuals

who consume commercially produced crops grown at the site perimeter and commercially produced beef and milk from livestock sustained on crops grown on the site perimeter were not assessed because any contaminated commercial products would be widely distributed, thus reducing the potential for individual exposure by comparison to the farm family scenario.

Chronic and subchronic exposure scenarios are based on current and future predicted lifetime exposures. These scenarios assume exposure to contaminant levels predicted by modeled results at the nearest receptor. The scenarios that were evaluated in the risk assessment are:

Lifetime, off-base residential (current and future)

1) adult, average
2) adult, reasonable maximum
3) child, average
4) child, reasonable maximum

Occupational (current and future)

1) adult, average
2) adult, reasonable maximum

Chronic exposure to adults and children was evaluated for: 1) an average case, using 50th percentile values for exposure parameters (i.e. exposure duration and frequency) when available and appropriate; and 2) a reasonable maximum case, using 90th or 95th percentile values for exposure parameters when available and appropriate. Risk estimates for noncarcinogenic effects were predicted for adults and children. Risk estimates for carcinogenic effects were predicted based on an exposure duration of 70 years.

6.3.6 Task 5: Quantification of Estimated Exposure Concentrations

This section describes the methodology used to estimate the magnitude, frequency, and duration of exposures for the populations and exposure pathways selected for quantitative evaluation. The various exposure media quantified for this risk assessment included ambient air, indoor air from residential water use, groundwater, surface water, fruits, vegetables, meat and dairy. The exposure concentration estimates in the various exposure media and the methodologies used to obtain these estimates are discussed. Table 6-3 summarizes the average measured soil concentrations used to estimate exposure concentrations from the various media. Tables 6-4, 6-5A and 6-5B summarize the exposure concentration estimates for all exposure media (i.e., groundwater, surface water, meat, dairy, fruits, vegetables). In addition, the exposure assumptions and algorithms used to calculate human intake are described.

6.3.6.1 Ambient Air

Emission rates of chemical compounds derived from volatilization and wind entrainment of contaminated dust from Landfill No. 4 were estimated using predictive equations recommended by the USEPA. The emission rates were input into the ISCST2 dispersion model to estimate average chemical concentrations in the atmosphere at on-site occupational and off-site residential receptors. The estimated average and reasonable maximum concentrations in air are presented in Table 6-4. The predicted concentrations were then used to estimate health risks to the exposed populations. The maximum contaminant concentrations predicted at the site perimeter were used to assess risks associated with all inhalation exposure scenarios.

The area source algorithm is based on the equation for a finite crosswind line source and requires that each individual area source have the same north-south and east-west dimensions. Since the landfill is irregularly shaped, it was modeled as several area sources by dividing the area into multiple squares that approximate the geometry of

Table 6-3

Average Measured Soil Concentrations From 12 Soil Borings at Landfill No. 4, CAFB, New Mexico

Chemicals	Surface Soil Concentration (μg/kg)	Subsurface Soil Concentration (μg/kg)
Aldrin	3.1E-01	1.7E-01
β-BHC	2.0E-01	1.8E-01
δ-BHC	1.8E-01	2.1E-01
Dichloroprop	1.0E+01	1.8E+01
Diesel Fuel	0.0E+00	4.0E+03
4,4'-DDE	4.0E-01	4.4E-01
4,4'-DDT	7.3E-01	7.7E+00
Hydrocarbons	3.0E+04	2.4E+04
Methylene chloride	3.7E+00	5.4E+00
MCPP	6.30E+03	3.3E+03
Toluene	2.4E+00	2.8E+00
2,4,5-Trichlorophenol	5.5E+00	3.0E+00
Acetone	5.5E+01	5.2E+00
γ-BHC	1.8E-01	1.8E-01
4,4'-DDD	1.8E-01	8.8E-01
2,4'-D	0.0E+00	8.2E+00
Endrin	1.8E-01	1.9E-01
Heptachlor epoxide	1.8E-01	6.3E-01
2-Hexanone	0.0E+00	2.0E+00
4-Methyl 2-pentanone	0.0E+00	1.1E+00
Xylenes	0.0E+00	1.2E+00
Zinc	3.1E+04	1.6+04

Table 6-4

Estimated Exposure Concentrations Associated with Landfill No. 4 CAFB, New Mexico

Chemical	Ambient Air mg/m³				Indoor Air from Showing mg/m³		Groundwater mg/L		Surface Water mg/L	
	Chronic		Subchronic							
	Average	Reasonable Maximum	Average	Reasonable Maximum	Average	Reasonable Maximum	Average	Reasonable Maximum	Average	Reasonable Maximum
Acetone	1.25E-02	1.25E-02	3.30E-01	3.30E-01	0.00+00	0.00+00	0.00+00	0.00+00	5.5E-02	5.50E-02
Aldrin	2.94E-09	2.94E-09	7.74E-08	7.74E-08	0.00+00	0.00+00	0.00+00	0.00+00	2.07E-03	2.07E-03
β-BHC	1.88E-09	1.88E-09	4.95E-08	4.95E-08	0.00+00	0.00+00	0.00+00	0.00+00	5.60E-04	5.60E-04
δ-BHC	1.73E-09	1.73E-09	4.56E-08	4.56E-08	0.00+00	0.00+00	0.00+00	0.00+00	5.00E-04	5.00E-04
γ-BHC	1.74E-09	1.74E-09	4.57E-08	4.57E-08	2.64E-74	4.76E-74	6.70E-73	6.70E-73	5.05E-04	5.05E-04
2,4-D	0.00+00	0.00+00	0.00+00	0.00+00	1.75E-06	3.2E-06	4.45E-05	4.45E-05	NA	NA
4,4'-DDD	1.74E-09	1.74E-09	4.57E-08	4.57E-08	0.00+00	0.00+00	0.00+00	0.00+00	3.00E-05	3.00E-05
4,4'-DDE	3.85E-09	3.85E-09	3.85E-09	3.85E-09	1.99E-17	3.43E-17	9.70E-16	9.70E-16	6.00E-05	6.00E-05
4,4'-DDT	3.48E-09	3.48E-09	3.48E-09	3.48E-09	3.90E-51	6.72E-51	1.90E-49	1.90E-49	1.20E-04	1.20E-04
Dichloroprop	9.82E-08	9.82E-08	9.82E-08	9.82E-08	0.00+00	0.00+00	0.00+00	0.00+00	NA	NA
Diesel Fuel	6.47E-07	6.47E-07	6.47E-07	6.47E-07	0.00+00	0.00+00	0.00+00	0.00+00	NA	NA
Endrin	1.74E-09	1.74E-09	4.57E-08	4.57E-08	3.57E-44	6.44E-44	9.07E-43	9.07E-43	1.82E-04	1.82E-04
Heptachlor epoxide	1.74E-09	1.74E-09	4.57E-08	4.57E-08	0.00+00	0.00+00	0.00+00	0.00+00	1.82E-04	1.82E-04
2-Hexanone	9.19E-07	9.19E-07	2.42E-05	2.42E-05	0.00+00	0.00+00	0.00+00	0.00+00	NA	NA
MCPP	3.00E-05	3.00E-05	3.00E-05	3.00E-05	0.00+00	0.00+00	0.00+00	0.00+00	NA	NA
4-Methyl 2-pentanone	2.74E-08	2.74E-08	7.21E-07	7.21E-07	0.00+00	0.00+00	0.00+00	0.00+00	NA	NA
Methylene chloride	1.90E-03	1.90E-03	1.90E-03	1.90E-03	6.30E-09	1.14E-08	1.60E-7	1.60E-7	5.33E-03	5.33E-03

Table 6-4

(Continued)

Chemical	Ambient Air mg/m³				Indoor Air from Showing mg/m³		Groundwater mg/L		Surface Water mg/L	
	Chronic		Subchronic							
	Average	Reasonable Maximum	Average	Reasonable Maximum	Average	Reasonable Maximum	Average	Reasonable Maximum	Average	Reasonable Maximum
2,4,5-Trichlorophenol	1.10E-05	1.10E-05	1.10E-05	1.10E-05	0.00+00	0.00+00	0.00+00	0.00+00	2.72E-03	2.72E-03
Toluene	8.66E-05	8.66E-05	8.66E-05	8.66E-05	0.00+00	0.00+00	0.00+00	0.00+00	2.56E-03	2.56E-03
Xylenes	2.00E-08	2.00E-08	5.28E-07	5.28E-07	0.00+00	0.00+00	0.00+00	0.00+00	NA	NA
Zinc	2.01E-03	2.01E-03	5.28E-02	5.28E-02	0.00+00	0.00+00	1.17E-01	1.17E-01	3.06E+01	3.06E+01

NA - Not Available

Table 6-5A

Estimated Future Exposure Concentrations in Foods Associated with Landfill No. 4 CAFB, New Mexico

Chemical	Fruits mg/kg		Vegetables mg/kg		Meat mg/kg		Dairy mg/kg	
	Average	Reasonable Maximum	Average	Reasonable Maximum	Average	Reasonable Maximum	Average	Reasonable Maximum
Acetone	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00
Aldrin	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00
β-BHC	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00
δ-BHC	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00
γ-BHC	9.94E-79	9.94E-79	9.94E-79	9.94E-79	8.71E-78	8.71E-78	2.68E-78	2.68E-78
2,4-D	2.22E-10	2.22E-10	2.22E-10	2.22E-10	7.12E-11	7.12E-11	2.22E-11	2.22E-11
4,4'-DDD	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00
4,4'-DDE	1.05E-19	1.05E-19	1.05E-19	1.05E-19	1.16E-15	1.16E-15	3.88E-16	3.88E-16
4,4'-DDT	1.03E-53	1.03E-53	1.03E-53	1.03E-53	1.08E-48	1.08E-48	3.42E-49	3.42E-49
Dichloroprop	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00
Diesel Fuel	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00
Endrin	1.43E-49	1.43E-49	1.43E-49	1.43E-49	1.45E-45	1.45E-45	1.81E-46	1.81E-46
Heptachlor epoxide	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00
2-Hexanone	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00
MCPP	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00
4-Methyl-2-pentanone	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00
Methylene chloride	0.00+00	0.00+00	0.00+00	0.00+00	8.00E-12	8.00E-12	3.20E-12	3.20E-12
2,4,5-Trichlorophenol	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00

Table 6-5A

(Continued)

Chemical	Fruits mg/kg		Vegetables mg/kg		Meat mg/kg		Dairy mg/kg	
	Average	Reasonable Maximum	Average	Reasonable Maximum	Average	Reasonable Maximum	Average	Reasonable Maximum
Toluene	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00
Xylenes	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00
Zinc	5.70E-04	5.70E-04	9.50E-04	9.50E-04	1.17E+00	1.17E+00	1.17E-01	1.17E-01

Table 6-5B

Estimated Present Exposure Concentrations in Foods Associated with Landfill No. 4 CAFB, New Mexico

Chemical	Fruits mg/kg		Vegetables mg/kg		Meat mg/kg		Dairy mg/kg	
	Average	Reasonable Maximum	Average	Reasonable Maximum	Average	Reasonable Maximum	Average	Reasonable Maximum
Acetone	0.00+00	0.00+00	0.00+00	0.00+00	1.14E-11	1.14E-11	3.74E-12	3.74E-12
Aldrin	3.77E-07	3.77E-07	3.77E-07	3.77E-07	1.68E-07	1.68E-07	5.85E-08	5.85E-08
β-BHC	7.00E-07	7.00E-07	7.00E-07	7.00E-07	2.77E-09	2.77E-09	1.17E-09	1.17E-09
δ-BHC	6.25E-07	6.25E-09	6.25E-07	6.25E-07	2.48E-09	2.48E-09	1.04E-09	1.04E-09
γ-BHC	7.49E-07	7.49E-07	7.49E-07	7.49E-07	1.75E-09	1.75E-09	7.78E-10	7.78E-10
2,4-D	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00
4,4'-DDD	2.73E-09	2.73E-09	2.73E-09	2.73E-09	7.44E-09	7.44E-09	2.43E-09	2.43E-09
4,4'-DDE	6.50E-09	6.50E-09	6.50E-09	6.50E-09	1.13E-08	1.13E-08	3.96E-09	3.96E-09
4,4'-DDT	6.50E-09	6.50E-09	6.50E-09	6.50E-09	1.04E-07	1.04E-07	3.38E-09	3.38E-09
Dichloroprop	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00
Diesel Fuel	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00
Endrin	2.87E-08	2.87E-08	2.87E-08	2.87E-08	4.67E-08	4.67E-08	6.29E-09	6.29E-09
Heptachlor expoxide	2.87E-08	2.87E-08	2.87E-08	2.87E-08	1.75E-08	1.75E-08	6.29E-09	6.29E-09
2-Hexanone	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00
4-Methyl-2-pentanone	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00
MCPP	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00
Methylene chloride	0.00+00	0.00+00	0.00+00	0.00+00	3.93E-11	3.93E-11	1.57E-11	1.57E-11
2,4,5-Trichlorophenol	0.00+00	0.00+00	0.00+00	0.00+00	5.22E-09	5.22E-09	1.69E-09	1.69E-09
Toluene	0.00+00	0.00+00	0.00+00	0.00+00	1.51E-10	1.51E-10	4.54E-11	4.54E-11

Table 6-5B

(Continued)

Chemical	Fruits mg/kg		Vegetables mg/kg		Meat mg/kg		Dairy mg/kg	
	Average	Reasonable Maximum	Average	Reasonable Maximum	Average	Reasonable Maximum	Average	Reasonable Maximum
Xylenes	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00	0.00+00
Zinc	1.49E-01	1.49E-01	2.48E-01	2.48E-01	2,44E-01	2.44E-01	4.43E-02	4.43E-02

the land. Contaminants with a Henry's Law constant of 1×10^5 atm-m^3/mole or greater and molecular weight less than 200 g/mole were considered volatile. These compounds were evaluated for various volatilization emission mechanisms. The remaining compounds were considered to be non-volatile and were evaluated for various entrained dust emission mechanisms. Appendix G-1 presents a detailed discussion of the air dispersion calculations.

EPA recommends comparing the concentrations of chemicals in ambient air with a reference concentration (RfC) rather than a reference dose (RfD) for assessing inhalation exposure (EPA, 1990). The estimated concentrations and the effective air concentrations (EAC) were equivalent for the residential exposure scenario because RfCs assume 24-hour exposure and an inhalation rate of 20 m^3/day for adults and 16 to 24 m^3/day for children. For the occupational or recreational exposure, an EAC is derived by normalizing the exposure duration on site, at the moderate inhalation rate, to a 24-hour day at the average daily inhalation rate. This EAC is then compared to the RfC when available for a chemical. Refer to Appendix H, Table H-6, for the equation used to estimate the EAC.

6.3.6.2 Indoor Air from Residential Water Use

Use of contaminated water for bathing/showering may contribute concentrations of volatile chemicals to indoor air. The method used to estimate concentrations in air while showering is based on results of shower volatilization experiments (Andelman, 1986). The experiments involved pumping a tracer chemical (aqueous trichloromethane) solution through an experimental shower chamber and measuring resulting concentrations of the tracer in the air.

Experimental data on percent volatilization in showers are not available for the chemicals of potential concern for this assessment. By considering the relative volatility of a specific chemical compared to the volatility of trichloromethane, the

volatilization transfer coefficient can be estimated for the chemicals of potential concern. This approach is applicable to chemicals with vapor pressures lower than the vapor pressure of trichloromethane as well as chemicals with vapor pressures higher than the vapor pressure of trichloromethane but less than or equal to 400 mm. The model utilizes the following assumptions:

1) Water flow rate = 20 L/min [based on a U.S. Department of Housing and Urban Development survey which found the mean and maximum value for water flow rate in showers to be between 10 L/min and 30 L/min (Andelman, 1989)];

2) Air exchange rate = 1 per hour [a conservative value suggested by Andelman et. al., 1989 (Andelman, 1989)];

3) Dimensions of the shower stall = 5.5 × 3 × 8 ft (volume = 3.736 m^3); and

4) Shower duration = 7 minutes for the average shower duration and 15 minutes for the reasonable maximum (EPA, 1989a).

A detailed discussion of the calculations is presented in Appendix H, Section 3. Table 6-4 summarizes the estimated average and reasonable maximum concentrations in the shower stall used in the risk assessment to estimate indoor inhalation exposures from residential water use.

EPA recommends comparing the concentrations of chemicals in the shower stall with a reference concentration (RfC) rather than a reference dose (RfD) for assessing inhalation exposure (EPA, 1990). Because RfCs assume 24-hour exposure, and an adult inhalation rate of 20 m^3/day, a direct comparison of inhalation in the shower to an RfC is inappropriate. Instead, an EAC was derived by normalizing the short-duration exposure received in the shower, at the shower inhalation rate, to a 24-hour day at the average daily inhalation rate. This EAC was then compared to the RfC when available for a chemical. Table H-11, presented in Appendix H, summarizes the assumptions and algorithms used to estimate exposure to volatile chemicals while showering.

6.3.6.3 Groundwater

A series of mathematical models was used to estimate the transport and fate of groundwater contaminants migrating from Landfill No. 4 at CAFB. The objective of the analysis was to provide conservative estimates of the maximum concentrations of chemicals of potential concern that would be expected at targeted receptor sites. Appendix G-2 presents a detailed discussion of calculations.

Migration of soil water and contaminants in the vadose zone beneath Landfill No. 4 was analyzed using analytical solutions for steady state unsaturated flow. Groundwater flow and contaminant transport in the unconfined aquifer were analyzed with a separate analytical model. From a hydraulic perspective, two categories of receptors were considered to represent the potential for human exposure to contaminants originating at Landfill No. 4. These are hydraulically active and hydraulically passive receptors.

Hydraulically active receptors are defined as those that impact the nature of the groundwater flow field and therefore the contaminant concentrations at the receptor as well. A hypothetical agricultural well placed at the southeast perimeter of Landfill No. 4 and the nine potable water wells located on-base fall into this category. Hydraulically, the wells draw groundwater towards them by creating a cone of depression that does not exist naturally. The hypothetical well was positioned to capture groundwater and contaminants migrating from site.

The travel time of soil moisture through unsaturated soil from the bottom of the landfill to the water table was estimated to be 173 years. Solutes that may be sorbed/desorbed on soil, such as metals and pesticides, are expected to migrate at a slower apparent velocity than the soil moisture and will require a longer period of time to reach the water table. The attenuation of organic species from biological, chemical, and physical degradation was estimated assuming a first-order decay mechanism. Given

the extended time of travel, even the most persistent species for which data were available (2,4-D) is expected to be attenuated by a factor of more than 10^8. Less persistent species are expected to be attenuated to a greater degree. Therefore, organic chemicals of potential concern are predicted to be reduced to near zero concentrations in the water table.

6.3.6.4 Surface Water

An estimated concentration at the surface water receptor was derived for several chemicals. Although zinc was detected in the surficial soils, it adsorbs strongly to soils. Metals generally are not very mobile in most soil systems although the rate of transportation is dependent on characteristics of the soil. Even though erosion, which is unlikely because of the arid climate, would be required for transport of this contaminant to the playa lake, this scenario was addressed in order to further evaluate the basis for a no-action decision.

The concentration of contaminants in the playa lake was estimated based on their distribution coefficients (K_d) in sandy soils. The K_d describes the equilibrium concentration ratio of the solute sorbed to the solid phase (the soil) to the solute in the liquid phase (soil water). The estimated concentrations are presented in Table 6-4 and were used to estimate the average and reasonable maximum concentrations of chemicals in fruits, vegetables, meat and dairy products for the chronic and subchronic exposure scenarios for off-base residents. Under actual field conditions, contaminant concentrations in the playa lake water are likely to be less because of non-equilibrium conditions. Appendix G-2 presents a detailed discussion of the calculations.

6.3.6.5 Fruits and Vegetables

Potentially contaminated surface water in the vicinity of Landfill No. 4 (playa lake) is used by a local farmer for irrigation purposes. In addition, many agricultural wells are located in the vicinity of CAFB. For this risk assessment, it was assumed that the use of contaminated water for irrigating farm crops contributes to concentrations of contaminants in edible portions of plants. The concentration of chemicals in plants irrigated with contaminated water depends on the concentration of the chemical in the irrigation water, subsequent concentration of the chemical in the soil, the plant type, and other factors.

To derive a concentration in soil from irrigation with water containing contaminants, an irrigation rate of 3,000 L/m^2/year was assumed (an average of approximately 39 inches of water applied over a six-month growing period in this geographic region) (Base, et. al., 1984; Base Natural Resources Environmental Group, 1992). Irrigation was assumed to continue for 30 years for evaluation of long-term exposures because soil concentration of inorganic chemicals may build up over time. Degradation, chemical transformation, or other soil removal processes were not considered, although these processes likely occur. It was further assumed that the total mass of contaminants resides in the top 15 cm of soil and the soil bulk density was 1333 kg/m^3. Volatile organic chemicals (acetone, diesel fuel, 2-hexanone, hydrocarbons, toluene, methylene chloride, 2,4,5-T and xylenes) were not evaluated for this pathway because these chemicals can be largely expected to volatilize from the irrigation water and soil surface before significant plant uptake can occur.

Appendix H provides the algorithm and spreadsheet calculations for quantifying concentrations in soil as a result of irrigation and subsequent uptake into fruits and vegetables. The estimated average and reasonable maximum contaminant concentrations in vegetables resulting from irrigation of farm crops with water potentially contaminated with toluene are listed in Tables 6-5A and 6-5B.

6.3.6.6 Meat and Dairy Products

The use of potentially contaminated groundwater for stock water is assumed to contribute to concentrations of contaminants in the edible meat of beef cattle and in milk and dairy products. However, there is no evidence to suggest that surface water (playa lake) is currently being used or will be used in the future for stock water (Base Natural Resources Environmental Group, 1992). While grazing, cattle also ingest surface soil, which can build up contaminant concentrations if the pasture is irrigated with contaminated water sources. As cattle ingest contaminated feed, water, and soil, some chemicals may be absorbed in the animals' gastrointestinal tract. The more lipophilic chemicals may then accumulate in meat.

To estimate the chemical concentration in meat and dairy products, an equation derived from the *Multi-Pathway Health Risk Assessment Input Parameters Guidance Document* (Clement, 1988) was used. Appendix H provides the algorithm and spreadsheet calculations for quantifying concentrations in meat and dairy products as a result of contaminated stock water and feed crops irrigated with contaminated surface water.

Contaminated food sources included in the evaluation are stock water from potentially contaminated groundwater, feed crops irrigated with surface water drawn from the playa lake or groundwater, and incidentally ingested soil. The fraction of feed from a contaminated source was assumed to be 100% for water (groundwater scenario), feed, and soil. One-hundred percent of all contaminants in the water, feed, and soil was assumed to be bioavailable. While these assumptions are not necessarily realistic and tend to be overly conservative, they allow assessment of a worst-case scenario and assess the basis for a no-action decision. A cattle water ingestion rate of 150 kg/day, and a consumption rate of 16 kg/day for lactating cows and 8 kg/day for nonlactating cows and cattle (Base Natural Resources Environmental Group, 1992), and a soil ingestion rate of

0.6 kg/day, or 4% of the feed consumption rate (Clement, 1988), per head of cattle was assumed.

Significant accumulation in meat and milk is not expected because of the relatively low concentrations of non-volatiles estimated to reach surface and groundwater (refer to Appendix H). The estimated average and reasonable maximum concentrations in beef and dairy products, assuming the cattle feed on corn, milo, and alfalfa irrigated with potentially contaminated surface water drawn from the playa lake and potentially contaminated groundwater, are presented in Table 6-5A and 6-5B.

6.3.7 Task 6: Estimation of Chemical Intakes for Individual Pathways

Exposure is defined as the contact rate of an organism with a chemical or physical agent. Intake is defined as exposure normalized for time and body weight and is expressed in units of mg chemical/kg body weight-day (USEPA, 1989a).

There are three categories of variables that are used to estimate intake:

1) Chemical-related variables (exposure concentration);

2) Variables that describe the exposed population (contact rate, exposure frequency and duration, and body weight); and

3) Assessment-related variables (averaging time).

The chemical-related variables (exposure concentrations) are presented in Tables 6-4, 6-5A and 6-5B. Tables H-11 through H-19 presented in Appendix H, summarize the assumptions and algorithms used to estimate exposure for each exposure pathway. The rationale for selecting individual values is explained in footnotes to the tables. The tables in Appendix H also document the equations used for calculating

pathway-specific intakes. The generic equation for calculating chemical intakes is presented in Appendix H. Calculated intakes are presented in Appendix I.

Exposure assumptions recommended in the *Human Health Evaluation Manual, Supplemental Guidance: Standard Default Exposure Factors* (USEPA, 1991), the *Risk Assessment Guidance for Superfund* (USEPA, 1989a), and the *Exposure Factors Handbook* (USEPA, 1989b) were used when available and applicable. Site-specific and chemical-specific values were used when available data justified their use; otherwise conservative default values were substituted.

6.3.8 Exposure Assessment Uncertainties

Major sources of uncertainty associated with the exposure assessment include:

1) The ability of fate and transport models to realistically simulate the behavior of chemicals in the environment; and

2) The accuracy of exposure assumptions in representing the degree and way in which individuals are exposed.

Uncertainty is addressed in this risk assessment by:

1) Incorporating both average and reasonable maximum values to provide a range of results rather than single values.

2) Using conservative estimates when defining reasonable maximum exposure assumptions in order to protect human health and the environment; and

3) Identifying and discussing the major sources of uncertainty and their effects on the exposure estimates in order that the results can be properly interpreted and used for estimation of risks.

6.3.8.1 Fate and Transport Modeling

Release rates to the air, groundwater, and surface water were based on analytical data from the 1992 RFI. Estimated releases to various media were assumed to be steady state, indicating that they will not increase or decrease over the assumed periods of time for exposure duration. Therefore, the estimated release rates are biased toward conservatism and most likely are overestimated because contaminant concentrations in the soil should decrease over time as chemicals volatilize to the air, degrade in the soil, and are flushed from the site.

Modeling the fate and transport of contaminants in air and water requires the use of overly simplistic assumptions that do not simulate the environment. Realistically, migration of contaminants from the source to receiving media involves numerous complex processes that are not necessarily addressed by the available models.

In many cases, conservative values were used for model input parameters. No pollutant removal processes were considered and a decay coefficient of 0 was used in the ISCST2 dispersion model for calculating ambient air concentrations. Therefore, concentrations predicted at each receptor are conservative estimates. These conservative assumptions result in higher ground level concentration estimates. In addition, subsurface contamination was assumed to be uniformly mixed. This assumption may or may not be overly conservative. The model used for transport of contaminants in groundwater and surface water uses conservative modeling assumptions to provide estimates of the maximum concentrations at the receptor sites. For groundwater modeling, results were based on time of travel calculations for soil moisture. Solutes, which may sorb/desorb on soil, would be expected to migrate at a slower apparent velocity than soil moisture and, therefore, would require a longer period of time to reach the water table. In addition, the most conservative K_d values were used to estimate concentrations of contaminants in the playa lake and may have resulted in overestimation of the exposure concentration.

6.3.8.2 Exposure Parameter Estimation

The standard assumptions regarding body weight, exposure period, life expectancy, population characteristics, and lifestyle may not accurately represent site-specific exposure situations. The assumptions used most likely overestimate human exposures but may underestimate them in some cases. The purpose of exposure parameter estimations are to reflect realistic, site-specific exposures. However, because exact current and future exposure that more accurately depict all scenarios cannot be determined, assumptions were made which most likely err on the conservative (safe) side to protect human health.

Assumptions regarding exposure parameters that are conservative and may overestimate exposures include:

1) The use of modeled concentrations to represent exposure point concentrations for most exposure scenarios.

2) The amount of media intake is assumed to be constant and representative of the exposed population.

3) Exposure is assumed to occur 350 days/year for chronic exposure scenarios for off-base residents involving inhalation of ambient air and consumption of locally produced agricultural, beef, and dairy products. Hypothetical on-site workers are assumed to be exposed by inhalation of ambient air at the perimeter of Landfill No. 4, where contaminant concentrations are expected to be highest, 100 or 200 days/year or for 2 or 8 hours/day. It is conservative to assume that off-base residents would consume milk, meat, fruit, or vegetables that come from the contaminated source 350 days/year. It is even more conservative to assume that on-site workers would be at the site perimeter 250 days/year for 8 hours/day, since there are no known activities which take place at the site presently. All future occupational exposures were assumed to occur over a 25 year (chronic) time period, which represents an upperbound estimate for occupational exposures, and may further overestimate exposures.

4) Ambient air concentrations predicted at the site perimeter were used to estimate risks associated with residential exposure. This assumption is overly conservative because contaminant concentrations in the air would be expected to be diluted at distant sites, such as off-base residences.

5) The use of feed-to-beef and feed-to-milk transfer coefficients that do not account for metabolism and/or disposition of chemicals may also lead to overestimation of exposure.

6) One hundred percent absorption of inhaled and ingested contaminants is assumed. 100% bioavailability is assumed for all inhaled, ingested, and dermally absorbed contaminants.

All of the above exposure assumptions tend to overestimate exposures. No assumptions that tend to underestimate exposures have been identified with respect to exposure parameter estimation.

Exposure parameters used in the assessment represent exposures that may occur considering both current and future land use. Future off-base land use is not expected to differ significantly from current land use practices. However, CAFB is an expanding base and, therefore, current land use at Landfill No. 4 may not reflect future uses.

6.4 Toxicity Assessment

Toxicity assessment involves determining whether exposure to an agent can increase the incidence of a particular adverse effect (e.g., cancer, birth defects) in humans, characterizing the nature and strength of evidence of causation, and, if sufficient data are available, quantifying the relationship between the dose of the contaminant and the incidence of adverse health effects in the exposed population. Toxicity values are derived from the quantitative dose-response relationship. These values can be used to estimate the incidence of or potential for adverse effects as a function of human

exposure to the contaminant. This section summarizes the toxicity values used for the risk assessment.

6.4.1 Background

USEPA has performed the toxicity assessment step for numerous chemicals, and the resulting toxicity information and toxicity values have undergone extensive peer review. Toxicity values used to evaluate noncarcinogenic effects (effects other than cancer) include:

- Reference dose (RfD) in units of mg/kg-day; and
- Reference concentration (RfC) in units of mg/m^3.

The RfD and RfC are estimates (with uncertainty spanning an order of magnitude) of the daily exposure to the human population (including sensitive subgroups) that is likely to be without an appreciable risk of deleterious effects during a portion of the lifetime, in the case of a subchronic RfC or RfD, or during the lifetime in the case of a chronic RfC or RfD. The RfD is used to evaluate oral and dermal exposures and the RfC is used to evaluate inhalation exposures.

Toxicity values used to evaluate carcinogenic effects include:

- Weight of evidence classification;
- Slope factor (SF) in units of $(mg/kg\text{-}day)^{-1}$; and
- Unit risk for inhalation exposure in units of $(\mu g/m^3)^{-1}$.

The weight of evidence classification is a USEPA classification system for characterizing the extent to which the available data indicate that an agent is a human carcinogen. In assessing the carcinogenic potential of a chemical, USEPA classifies the chemical into

one of the following groups, according to the weight of evidence from epidemiological studies and animal studies:

Group A	-	Human Carcinogen (sufficient evidence of carcinogenicity in humans);
Group B	-	Probable Human Carcinogen (B1 - limited evidence of carcinogenicity in humans; B2 - sufficient evidence of carcinogenicity in animals with inadequate or lack of evidence in humans);
Group C	-	Possible Human Carcinogen (limited evidence of carcinogenicity in animals and inadequate or lack of human data);
Group D	-	Not Classifiable as to Human Carcinogenicity (inadequate or no evidence); or
Group E	-	Evidence of Noncarcinogenicity for Humans (no evidence of carcinogenicity in adequate studies).

USEPA performs quantitative carcinogenic risk assessments for chemicals in Groups A and B, and on a case-by-case basis for chemicals in Group C. Classification of a chemical as Group D or E precludes performance of quantitative risk assessment. Cancer slope factors are estimated through the use of mathematical extrapolation models, most commonly the linearized multistage model, for estimating the largest possible linear slope (within the 95% confidence limit) at low extrapolated doses that is consistent with the data. The slope factor is characterized as a plausible upper-bound estimate of the probability of a response per unit intake of a chemical over a lifetime. The slope factor is used to estimate an upper-bound probability of an individual developing cancer as a result of a lifetime of exposure to a particular level of a potential carcinogen. The unit risk for drinking water and inhalation is the risk per concentration unit in water (risk per $\mu g/L$) and air (risk per $\mu g/m^3$), respectively.

6.4.2 Sources of Information

This assessment used only toxicity values that have been developed by USEPA. The following sources of information, in order of priority, were consulted to identify toxicity values for chemicals of concern with potential for human exposure:

- USEPA's Integrated Risk Information System (IRIS) - IRIS is updated monthly, provides verified RfDs and slope factors, and is the Agency's preferred source of toxicity information;
- USEPA's Health Effects Assessment Summary Tables (HEAST) - HEAST provides information on interim (not yet verified by US EPA Workgroups) as well as verified RfDs and slope factors and is used only to obtain toxicity values for chemicals not listed in IRIS;
- Other USEPA documents, such as the Drinking Water Regulations and Health Advisories (USEPA, 1991c).

6.4.3 Toxicity Values Used in the Risk Assessment

This section summarizes the available toxicity information for each of the chemicals of concern with potential for human exposure. Chemicals of concern that were screened out by the exposure assessment (see Section 6.3, Exposure Assessment) are not included in the toxicity assessment. The relevant information includes standard USEPA toxicity values and toxicity values derived for use in risk assessment. The information in this section was used in determining the risks associated with noncarcinogenic effects RfDs, carcinogenic potential (slope factors), and weight of evidence classification. These values are defined and discussed in Section 6.4.1 of the report.

6.4.3.1 Toxicity Values for Noncarcinogenic Effects

The RfD values for the chemicals of concern are presented in Table 6-6 and were obtained from IRIS dated November 24, 1992, or from the USEPA, HEAST, 1992. Oral RfD values were not available for β-BHC, δ-BHC, 4,4'-DDD, 4,4'-DDE, dichloroprop and 2-hexanone. Unless a specific dermal RfD was listed by IRIS or HEAST, the RfD for dermal exposures was assumed to be the same as for oral exposures. When available, inhalation RfDs or RfCs were included.

6.4.3.2 Toxicity Values for Carcinogenic Effects

The slope factors for chemicals of potential concern classified by USEPA as carcinogens are also presented in Table 6-6 and were obtained from an IRIS search dated 24 November 1992 or from HEAST, 1992. When available, inhalation unit risk factors were included.

6.4.4 Health Effects Summaries

This section of the report summarizes the toxicity information available for the noncarcinogenic and carcinogenic effects associated with the chemicals of potential concern. General information on the potential health effects of exposures to the chemicals of potential concern is provided. Toxicity information on noncarcinogenic effects is provided for each contaminant that has an RfD value and includes the data that formed the basis for the determination of the RfD. Information on the potential carcinogenic risks includes supporting data for the USEPA carcinogenic classification. Table 6-7 summarizes the available information on human health effects of exposure to chemicals of potential concern. Unless otherwise stated, the information presented below on each of the chemicals of concern is summarized from the information available on IRIS as of 12 October 1992.

Table 6-6

Toxicity Values for Chemicals Specific to Landfill No. 4

Chemical	EPA Class	Chronic Oral RfD (mg/kg-day)	Subchronic Oral RfD (mg/kg-day)	Chronic Inhalation RfC (mg/m³)	Subchronic Inhalation RfC (mg/m³)	Oral Slope Factor (mg/kg-day)⁻¹	Inhalation Unit Risk 1/(µg/m³)	Inhalation Slope Factor (mg/kg-day)⁻¹
Acetone	D	1.00E-01[i]	1.00E+00[h]	–	–	–	–	–
Aldrin	B2	3.00E-05[i]	3.00E-05[h]	–	–	1.70E+01[i]	4.90E-03[i]	1.70E+01[h]
beta-BHC	C	–	–	–	–	1.80E+00[i]	5.3E-04[i]	–
delta-BHC	D	–	–	–	–	–	–	–
gamma-BHC	B2/C	3.00E-04[i]	3.00E-03[h]	–	–	1.30E+00[h]	3.70E-05[i]	–
2,4'-D		1.00E-02[i]	1.00E-02[h]	–	–	–	–	–
4,4'-DDD	B2	–	–	–	–	2.40E-01[i]	–	–
4,4'-DDE	B2	–	–	–	–	3.40E-01[i]	–	–
4,4'-DDT	B2	5.00E-04[i]	5.00E-04[h]	–	–	3.40E-01[i]	9.70E-05[i]	3.40E-01[h]
Dichloroprop	–	–	–	–	–	–	–	–
Diesel	D	8.00E-03[p]	8.00E-03[p]	–	–	–	–	–
Endrin	D	3.00E-04[i]	3.00E-04[h]	–	–	–	–	–
Heptachlor epoxide	B2	1.30E-05[i]	1.30E-05[h]	–	–	9.1E+00[i]	2.60E-03[i]	–
2-Hexanone		–	–	–	–	–	–	–
MCPP	–	1.00E-03[i]	1.00E-02[h]	–	–	–	–	–
Methylene chloride	B2	6.00E-02[i]	6.0E-02[h]	3.00E+00[h]	3.00E+00[h]	7.50E-03[i]	4.7E-07[i]	–
4-Methyl-2-pentanone		5.00E-02[h]	5.00E-01[h]	8.00E-02[h]	8.00E-01[h]	–	–	–
Toluene	D	2.00E-01[i]	2.00E+00[h]	4.00E-01[i]	2.00E+00[h]	–	–	
2,4,5-T	–	1.00E-01[i]	1.00E+00[h]	–	–	–	–	–
Xylenes	D	2.00+00[i]	4.00E+00[h]	–	–	–	–	–
Zinc	D	3.00E-01[i]	2.00E-01[h]	–	–	–	–	–

[h] - HEAST, March 1992
[i] - IRIS on line search (1/92).
[p] - Provisional Oral RfD.

Table 6-7

Chronic Toxicities

Chemical	Noncarcinogenic Effect		Carcinogenic Effect	
	Target Organ	Critical Effect	Target Organ/ Tumor Type	EPA Class
Acetone	Liver Kidney	Increased relative and absolute organ weights have been noted following oral intubation of rats with acetone. Tubular degeneration of the kidneys and hyalin droplet formation have also been observed.		D - Not Classifiable as to Human Carcinogenicity.
Aldrin/Dieldrin	Liver Kidney	Lesions occur in both the liver and kidneys after chronic ingestion by laboratory animals.	Liver - hepatomas, hyperplasia, carcinoma.	B2 - Probable Human Carcinogen.
	Central Nervous System (CNS)	Chronic exposure to moderate levels in humans can cause headaches, dizziness, irritability, vomiting, or uncontrolled muscle movements.		

Table 6-7

(Continued)

Chemical	Noncarcinogenic Effect		Carcinogenic Effect	
	Target Organ	Critical Effect	Target Organ/ Tumor Type	EPA Class
BHC (beta, delta, and gamma)	Liver	Hypertrophy was seen in a chronic ingestion study in rats.	Liver - hepatocellular carcinomas	C - Possible Human Carcinogen (beta-BHC) D - Not Classifiable as to Human Carcinogenicity (delta-BHC). B2/C - Probable/ Possible Human Carcinogen (gamma-BHC)
	Kidney	Tubular degenerating hyalin droplet accumulation, and interstitial nephritis have been observed in rats fed BHC in the diet.		
4,4'-DDD	Thyroid	Atrophy of the thymus has been observed following short-term exposure of mice to 4,4'-DDD in the diet.	Thyroid - tumors Lung - tumors	B2 - Probable Human Carcinogen
4,4'-DDE	Liver Thyroid	Hypertrophy may result after chronic oral exposure of rodents.	Liver - hepatocellular carcinomas.	B2 - Probable Human Carcinogen.

Table 6-7

(Continued)

Chemical	Noncarcinogenic Effect		Carcinogenic Effect	
	Target Organ	Critical Effect	Target Organ/ Tumor Type	EPA Class
4,4'-DDT	Liver	Chronic exposure may result in changes in enzyme levels in rodents.	Liver - carcinomas.	B2 - Probable Human Carcinogen.
	Reproductive System	Some evidence in laboratory animals indicates that heptachlor may decrease fertility and may adversely affect offspring.		
2,4'-D	Blood	Reduced hemoglobin levels, hematocrit values, red blood cells, and reticulocytes have been observed in rats following ingestion of 2,4-D.		Not Classified
	Liver	Decreases in liver enzymes, SGOT and SGPT have been reported in rats exposed orally.		
	Kidney	Increased organ weight (relative and absolute) has been reported following subchronic exposure to high levels of 2,4-D.		

Table 6-7

(Continued)

Chemical	Noncarcinogenic Effect		Carcinogenic Effect	
	Target Organ	Critical Effect	Target Organ/ Tumor Type	EPA Class
Dichloroprop	Liver	Slight liver hypertrophy has been observed in mice following administration of dichloroprop in the diet.		Not Classified
Diesel Fuel	Liver	Fatty changes in the livers of mice have been reported following subchronic inhalation exposure.		D - Not Classifiable as to Human Carcinogenicity
Endrin	Liver	Slightly increased relative liver weights and mild histopathological effects in the liver have been noted in dogs fed endrin.		D - Not Classifiable as to Human Carcinogenicity
2-Hexanone	Liver Kidney	Hepatic and renal effects have been noted in rats following acute and intermediate exposures to 2-hexanone via gavage.		Not Classified

Table 6-7

(Continued)

Chemical	Noncarcinogenic Effect		Carcinogenic Effect	
	Target Organ	Critical Effect	Target Organ/ Tumor Type	EPA Class
MCPP	Liver	Increased absolute and relative organ weight has been observed in rats exposed to MCPP in the diet.		Not Classified
	Kidney	Increased absolute and relative organ weight, increased creatinine and decreased glucose levels have been observed in rats exposed to MCPP in the diet.		
Methylene Chloride	Liver	Histological alterations of the liver were noted in a chronic drinking water study conducted on rats.	Liver-hepatocellular neoplasms. Lung-alveolar/bronchiolar neoplasms. Hematopoietic-leukemia.	B2 - Probable Human Carcinogen

Table 6-7

(Continued)

Chemical	Noncarcinogenic Effect		Carcinogenic Effect	
	Target Organ	Critical Effect	Target Organ/ Tumor Type	EPA Class
4-Methyl-2-pentanone (MIBK)	Liver Kidney	Increased relative and absolute organ weights have been noted in laboratory animals exposed to MIBK.		Not Classified
	CNS	Inhalation of MIBK causes headache and nausea in humans. Narcosis may occur with additional symptoms of weakness, light-headedness, dizziness, and incoordination.		
Toluene	Skin	Irritation to the skin and eyes has been seen in humans.		D - Not Classifiable as to Human Carcinogenicity.
	Liver Kidney	The weights of the liver and kidneys increased in a subchronic study in rats at moderate to high levels.		

Table 6-7

(Continued)

Chemical	Noncarcinogenic Effect		Carcinogenic Effect	
	Target Organ	Critical Effect	Target Organ/ Tumor Type	EPA Class
2,4,5-Trichlorophenol	Liver	Degenerative changes in the liver have been observed in rats exposed to 2,4,5-Trichlorophenol in the diet.		Not Classified (pending)
	Kidney	Degenerative changes in the kidney as well as mild diuresis have been observed in rats exposed to 2,4,5-Trichlorophenol in the diet.		
Xylenes	CNS	Mice given high doses of xylene mixtures experience hyperactivity.		D - Not Classifiable as to Human Carcinogenicity
	Liver Kidneys	Possible changes in the liver and kidneys have been noted in humans following short-term exposure to high concentrations of xylenes.		

Table 6-7

(Continued)

Chemical	Noncarcinogenic Effect		Carcinogenic Effect	
	Target Organ	Critical Effect	Target Organ/ Tumor Type	EPA Class
Zinc	Gastrointestinal System	Signs of zinc intoxication may include gastrointestinal distress, emesis, and decreased food consumption.		D - Not Classifiable as to Human Carcinogenicity
	Blood	Anemia and hemorrhage have been noted in several species following exposure to high zinc concentrations.		

6.4.4.1 Acetone

Studies indicate that exposure to less than 2150 ppm acetone for less than 8 hour/day causes no significant toxic effects although transient eye and nose irritation have been reported by some exposed workers (EPA, 1984). In two occupational exposure studies, workers exposed to acetone vapors at concentrations of 19-920 ppm reported irritation of the mucosal membranes which included conjunctivitis, pharyngitis, inflammatory bronchitis, and gastroduodenitis. Data regarding the teratogenicity of acetone were not located in the literature, however, acetone has been reported to cross the placenta (USEPA, 1984). Several studies indicate that acetone potentiates the hepatotoxic effects of carbon tetrachloride (Plaa, et. al., 1975, 1982) and 1,1,1-trichloromethane (Plaa, et. al., 1975; Hewitt, et. al., 1983). Data regarding the carcinogenic potential of acetone in humans or laboratory animals were not located in the available literature, however, acetone does not demonstrate mutagenic activity in microbial assay systems or in cell transformations systems. Acetone was reported to cause chromosomal aberrations but not sister chromatid exchange in one study (Kawachi, et. al., 1980) but gave negative results in all other assays that tested for chromosomal aberrations, sister chromatid exchange, point mutations, and transfection (USEPA, 1984).

IRIS lists the chronic oral RfD for acetone as 1.0E-01 mg/kg-day while HEAST lists the subchronic oral RfD as 1.0E+00 mg/kg-day. These values were determined from a ninety-day study in albino rats using acetone. The experimental groups were orally intubated at 0, 100, 500, or 2500 mg/kg-day. Body weights, food consumption, clinical chemistry, hematology, and histopathology parameters, as well as organ weights and organ-to-body weight ratios, were measured and analyzed. After sacrifice, no effects were seen in the 100 mg/kg-day group. Statistical analysis of the absolute and relative organ weight data revealed significantly increased kidney weights for females in the 500 and 2500 mg/kg-day groups and increased kidney-to-body and brain weight ratios for males and females in the 2500 mg/kg-day groups. Liver weight and liver/body weight ratios were elevated in both sexes for the high dose group.

and liver/body weight ratios were elevated in both sexes for the high dose group. Histopathologic studies revealed a marked increase of severity in tubular degeneration of the kidneys and hyaline droplet accumulation. A dose response was observed.

The No Observable Adverse Effect Level (NOAEL) is set at 100 mg/kg-day and the Lowest Observable Adverse Effect Level (LOAEL) is 500 mg/kg-day due to the increased liver and kidney weights in conjunction with nephrotoxicity found in the above study. An uncertainty factor of 1000 is incorporated in the RfD calculation since uncertainty of 10X exists when extrapolating from each: inter- and intraspecies, and subchronic to chronic exposure. Confidence in this study is medium since a moderate number of animals was used and an extensive number of clinical parameters were analyzed. However, the overall confidence rating for the acetone RfD is low because of the small number of studies on this compound and the lack of significant supporting data.

Inhalation RfDs and RfCs were not available in IRIS or HEAST. The EPA has designated acetone as Group D (Not Classifiable as a Human Carcinogen) based on lack of data concerning carcinogenicity in humans or animals.

6.4.4.2 Aldrin

Exposure to aldrin is limited because it is broken down very rapidly to dieldrin in the environment. No increase in mortality from any cause has been reported in workers who had been employed in the manufacture of aldrin for more than four years. Information regarding the respiratory effects of aldrin in humans is limited and conflicting. One occupational exposure study indicated that exposed workers demonstrated no new pulmonary disease or deterioration of existing pulmonary disease (ATSDR, *Toxicological Profile for Aldrin/Dieldrin*, 1991) although a similar study reported significantly increased incidence of pneumonia and other pulmonary diseases (ATSDR, *Draft Toxicological Profile for Aldrin/Dieldrin*, 1991). Central nervous system (CNS)

excitation culminating in convulsions was the principal toxic effect noted in occupational studies of workers employed in the manufacture or application of aldrin. Short-term exposure to high levels of aldrin caused convulsions and kidney damage. Long-term exposures to lower levels of aldrin may also cause convulsions as a result of aldrin's potential to accumulate within the body. Long-term exposure to moderate levels of aldrin caused headaches, dizziness, irritability, vomiting, or uncontrollable muscle movements. A condition in which aldrin causes the body to destroy its own blood cells has been noted in some sensitive people.

The carcinogenic and reproductive/developmental effects of aldrin in humans are currently unknown. Experimental studies indicate that animals born to mothers that were fed aldrin did not live long. Conflicting results have been obtained in animal studies with regard to the teratogenic potential of aldrin as well as its effects on reproductive performance. One study revealed detectable levels of dieldrin (a lipid soluble metabolite of aldrin that is toxic and is stored in adipose tissue) in the human placenta, amniotic fluid, and fetal blood. These results suggest that dieldrin can pass through the human placenta and accumulate in the developing fetus. A limited number of epidemiologic studies examining the incidence of cancer in workers exposed to aldrin or dieldrin exist. No evidence for a carcinogenic effect of aldrin in humans was observed in these studies (ATSDR, *Toxicological Profile for Aldrin/Dieldrin*, 1991).

IRIS lists the chronic oral RfD for aldrin as 3.0E-05 mg/kg-day. This value was determined from a two year chronic study in rats using aldrin. The experimental groups were orally dosed with 0, 0.5, 2, 10, 50, 100 or 150 ppm (in the diet) for two years. Liver lesions characteristic of chlorinated insecticide poisoning were observed at dose levels of 0.5 ppm and greater. These lesions were characterized by enlarged centrilobular hepatic cells, with increased cytoplasmic oxyphilic, and peripheral migration of basophilic granules. A statistically significant increase in liver-to-body weight ratio was observed at all dose levels. Kidney lesions occurred at the highest dose levels.

Survival was markedly decreased at dose levels of 50 ppm and greater. A LOAEL of 0.5 ppm was established in this study. A NOAEL was not established.

Additional data are fairly supportive of the findings from the critical study. Effect and no-effect levels are similar to those found for rats and for liver effects in dogs after 15 months exposure to aldrin in the diet. Liver effects were observed at slightly higher doses in several other subchronic-to-chronic rat and dog studies. Short-term exposure to higher doses resulted in mortality for a number of species.

The uncertainty factor used to derive the RfD for aldrin is 1,000. This factor encompasses the uncertainty of extrapolation from animals to humans, the uncertainty in the range of human sensitivities, and an additional uncertainty because the RfD is based on a LOAEL rather than a NOAEL. The confidence level for the RfD value is medium. The supporting study performed histopathologic analysis but lacked other toxicologic parameters. Confidence in the data base was also medium. There is no inhalation RfD or RfC for aldrin. HEAST lists the subchronic RfD as 3.0E-05 mg/kg-day.

Human carcinogenicity studies are inadequate but animal carcinogenicity studies are sufficient to classify aldrin as Group B2 - Probable Human Carcinogen. The oral slope factor for aldrin is listed in IRIS as 1.7E+01 $(mg/kg\text{-}day)^{-1}$ and the inhalation unit risk is listed as 4.9E-03 $(\mu g/m^3)^{-1}$. After chronic ingestion of 10 ppm in the diet of mice, a statistically significant increase in hepatomas was observed. Most of these tumors were evaluated to be liver carcinomas. Adequate numbers of animals were treated for a large proportion of their lifetime and the route of treatment was appropriate. HEAST listed an inhalation slope factor of 1.70E+01 $(mg/kg\text{-}day)^{-1}$.

6.4.4.3 BHC (Beta and Delta)

People generally are not exposed to the beta and delta-forms of benzene hexachloride (BHC) separately but to lindane (gamma-BHC) or to technical-grade BHC (a mixture of the alpha, beta, and delta-forms). Therefore, the health effects of the BHC isomers are considered jointly. The adverse health effects of lindane and the other BHC isomers (alpha, beta, and delta) that have been seen in humans include lung irritation, heart disorders, blood disorders, headache, convulsions, and alterations in levels of sex hormones. These effects were observed in individuals exposed to BHC vapors during its manufacture and/or in individuals accidentally exposed to very large quantities of BHC. Death can result in humans and animals exposed to large amounts of BHC. Liver disease has been reported in animals fed lindane or alpha, beta, or technical-grade BHC and liver cancer has been reported in rodents which received long-term administration of these compounds (ATSDR *Toxicological Profile for α,β,γ, and δ-Hexachlorocyclohexane*, 1989).

Beta-BHC--There are no oral or inhalation RfD or RfC values listed in IRIS or HEAST for beta-BHC. Beta-BHC is listed as Class C - Possible Human Carcinogen. This classification is supported by an increase in benign liver tumors when mice were exposed to beta-BHC in the diet. The oral slope factor is listed in IRIS as 1.8E+00 $(mg/kg/day)^{-1}$ and the inhalation slope factor is listed in HEAST as 1.8E+00 $(mg/kg\text{-}day)^{-1}$. IRIS lists an inhalation unit risk of 5.3E-04 $(\mu g/m^3)^{-1}$.

Delta-BHC--Neither a RfD nor a slope factor is given for delta-BHC in IRIS or HEAST. It is classified as Group D - Not Classifiable as to Human Carcinogenicity.

6.4.4.4 Gamma-BHC (Lindane)

The oral RfD for gamma-BHC is listed in IRIS as 3.0E-04 mg/kg-day. This value is supported by a 12 week study which dosed rats with 0, 0.2, 0.8, 4, 20, or 100 ppm gamma-BHC in the diet. After 12 weeks, 15 animals/sex/group were sacrificed. The remaining rats were fed the control diet for an additional six weeks before sacrifice. Treatment-related effects were noted in mortality, hematology, clinical chemistry, and urinalysis. Rats receiving 20 and 100 ppm gamma-BHC were observed to have greater-than-control incidence of the following: liver hypertrophy, kidney tubular degeneration, hyaline droplets, tubular distension, interstitial nephritis, and basophilic tubules. Because these effects were mild or rare in animals receiving 4 ppm, this value represents a NOAEL. The reviewers of the study calculated the dose to be 0.29 mg/kg/day for males and 0.33 mg/kg/day for females based on measured food intake. A LOAEL of 20 ppm (converted to 1.55 mg/kg-day for males) was also established.

An uncertainty factor of 1,000 was used to determine the RfD for gamma-BHC. A factor of 10 each was employed for use of a subchronic assay, to account for interspecies variation and to protect sensitive human subpopulations. A confidence rating of medium is associated with the RfD for gamma-BHC. This rating reflects that the principal study used an adequate number of animals and measured multiple endpoints. There are no inhalation RfD or RfC values currently available. However, a risk assessment for development of an inhalation RfD is under review for this agent. HEAST listed the subchronic RfD as 3.0E-03 mg/kg-day.

Gamma-BHC is classified as a Group B2/C - Carcinogen. HEAST lists the oral slope factor as 1.3E+00 $(mg/kg\text{-}day)^{-1}$. No inhalation unit risk was given.

6.4.4.5 2,4-D

2,4-Dichlorophenoxyacetic acid (2,4-D) is a defoliant and a major component of Agent Orange. Studies in laboratory animals suggest that conjugates of 2,4-D induce allergic antibody production in mice following intraperitoneal exposure (Dean and Murray, 1991).

An oral RfD of 1.0E-02 mg/kg-day was listed in IRIS for 2,4-D. This value was based on a 90-day oral bioassay and a 1-year Interim Report from a 2-year oral bioassay conducted in rats. 2,4-D (97% pure) was added to lab chow and rats were fed doses calculated to be 0, 1, 5, 15, or 45 mg/kg-day for 91 days. The critical effects noted in the study were significantly reduced hemoglobin levels, hematocrit values, red blood cells, and reticulocyte levels (males only) at the 5 mg/kg-day dose. One and 5 mg/kg-day were established as the NOAEL and LOAEL, respectively. Statistically significant reductions in liver enzymes, LDH (lactate dehydrogenase), SGOT (serum glutamate oxylate transaminase), SGPT (serum glutamate pyruvate transaminase), and alkaline phosphatase were observed at week 14 in animals treated with 15 mg/kg-day. Histopathologic examinations indicated cortical and subcortical pathology. Statistically significant increases in kidney weight (absolute and relative) at 15 mg/kg-day and higher were also noted at the end of the treatment protocol.

In the second part of the study, mice were fed lab chow mixed with 2,4-D and received doses calculated to be 0, 5, 15, 45, or 90 mg/kg-day for 91 days. Increased weight of the adrenals in females (5 mg/kg-day) was the only adverse effect noted. Chronic toxicity and reproduction studies indicate that 2,4-D causes no adverse effects at doses up to 500 ppm in dogs (14.5 mg/kg-day), 1,250 ppm in rats (62.5 mg/kg-day), or at levels of 1,000 ppm in drinking water (50-100 mg/kg-day) in pregnant rats or their offspring. An uncertainty factor of 100 was used in derivation of the RfD to account for both interspecies and interhuman variability in lieu of specific data. A confidence rating in the RfD of medium reflects that a moderate number of animals of each sex was used,

multiple doses were given, and a number of parameters were examined. Several studies support both the observation of critical toxic effects and the levels at which they occur. HEAST lists a subchronic oral RfD of 1.0E-02 mg/kg-day.

USEPA has not classified 2,4-D as to its carcinogenic potential.

6.4.4.6 4,4'-DDD, 4,4'-DDE and 4,4'-DDT

Typically, people are not exposed to 4,4'-DDT, -DDD, or -DDE individually, but rather to a mixture of all three, since 4,4'-DDE and 4,4'-DDD are contaminants of and degradation and metabolic products of 4,4'-DDT. Therefore, the toxicities of DDT, DDE, and DDD should be considered jointly. The human and animal health effects that result from inhalation of 4,4'-DDT, -DDE, or -DDD are currently unknown. The health effects resulting from human exposure to 4,4'-DDT, -DDE, or -DDD in water are also unknown at this time. However, single human exposures to 4,4'-DDT, -DDE, or -DDD in food at doses of 214-571 ppm have resulted in headache, nausea, vomiting, increased heart rate, and convulsions. Long-term human exposures (18 months) to lower doses (22 ppm) of the three compounds in food caused no adverse health effects (ATSDR, *Toxicological Profile for p,p'-DDT, DDE, DDD*, 1989).

4,4'-DDD--The health effects resulting from exposure of animals to 4,4'-DDD in water are not known. A NOAEL of 26 mg/kg-day was identified during short-term exposure (1 week) of mice to 4,4'-DDD in the diet. Exposure of rats to 1221 mg/kg-day 4,4'-DDD for 16 days resulted in atrophy of the thymus. NOAELs of 165 and 107 mg/kg-day were identified in chronic studies (78 weeks) using rats and mice, respectively. However, at 85 mg/kg-day, exposure to 4,4'-DDD resulted in thyroid tumors in rats. In a separate study, exposure to 32.5 mg/kg-day 4,4'-DDD caused lung tumors in mice (ATSDR, *Toxicological Profile for p,p'-DDT, DDE, DDD*, 1989).

Neither IRIS nor HEAST list an oral RfD, inhalation RfD or inhalation RfC.

4,4'-DDD is a Group B2 - Probable Human Carcinogen. This classification is based on the induction of lung tumors in male and female mice, liver tumors in male mice and thyroid tumors in male rats. There are no human carcinogenicity data. The oral slope factor is 2.4E-01 $(mg/kg\text{-}day)^{-1}$. The supporting study used an adequate number of animals, but the slope factor was derived using tumor incidence data from one dose. There is no inhalation unit risk at this time.

4,4'-DDE--The health effects resulting from exposure of animals to 4,4'-DDE in water are not known. Exposure of mice (by gavage) to 26 mg/kg/day 4,4'-DDE for 24 hr/day for one week caused alterations in the liver. When rats were exposed to 28 mg/kg/day 4,4'-DDE by gavage on gestation days 15-19, a decrease in the weight of the ovaries was noted. A NOAEL of 42 mg//kg/day was identified in a long-term (78 weeks) study in which rats were fed 4,4'-DDE in the diet. Hamsters fed 41.5 mg/kg/day 4,4'-DDE for 128 weeks exhibited necrosis of the liver and when 4,4'-DDE was administered by gavage, tumors of the liver were observed. When mice were exposed to 19 mg/kg/day 4,4'-DDE in the diet for 78 weeks, liver tumors were also observed (ATSDR, *Toxicological Profile for p,p'-DDT, DDE, DDD*, 1989).

4,4'-DDE is classified as a group B2 - Probable Human Carcinogen. This classification is based on increased incidence of liver tumors including carcinomas in two strains of mice and in hamsters and thyroid tumors in female rats when 4,4'-DDE is given in the diet. Human data are not available. The oral slope factor is 3.4E-01 $(mg/kg/day)^{-1}$. This value is the geometric mean of six slope factors computed from incidence data by sex.

4,4'-DDT--The primary effect of short-term exposure to high levels of 4,4'-DDT is on the nervous system. Oral ingestion of large quantities of 4,4'-DDT have

resulted in excitability, tremors, and seizures in humans. Irritation of the eyes, nose, and ythroat have been reported by people who have come in contact with 4,4'-DDT. Exposure to low doses of DDT on a long-term basis has resulted in changes in the levels of liver enzymes involved in metabolism of drugs and chemicals but there was no indication that 4,4'-DDT caused irreversible damage (ATSDR *Toxicological Profile for p,p' - DDT, DDE, DDD*, 1989).

Studies conducted in laboratory animals suggest that exposure to 4,4'-DDT may have harmful effects on reproduction and may result in an increased occurrence of liver tumors. However, five studies of 4,4'-DDT exposure in humans did not show increases in the number of deaths or cancers (ATSDR, *Toxicological Profile for p,p' - DDT, DDE, DDD*, 1989). Increasing evidence indicates that pesticides, including 4,4'-DDT, can alter immune function in rodents although studies in humans are limited and ambiguous. In a study of pesticide formulators in India, 73% of workers exposed to 4,4'-DDT had altered levels of serum immunoglobulins although no increase in infections was noted (Dean, et. al., 1991).

The oral RfD for 4,4'-DDT is listed in IRIS as 5E-04 mg/kg-day. This value is based on a chronic rat feeding study in which 4,4'-DDT was provided in the diet. Weanling rats were fed commercial DDT in doses of 0, 1, 5, 10, or 50 ppm for 15-27 weeks. Increasing hepatocellular hypertrophy was seen at doses of 5 ppm and greater. Therefore, 5 ppm was established as a LOAEL. A NOAEL of 1 ppm (converted to 0.05 mg/kg-day) was also established in the study. An uncertainty factor of 100 was used to account for interspecies conversion and to protect sensitive human subpopulations (10x each). An uncertainty factor for subchronic to chronic conversion was not included because of corroborating chronic data in the data base. A confidence rating of medium was associated with the RfD and reflects that the principal study was adequate but of shorter duration than desired. There are no values for the inhalation RfD or RfC at this time. HEAST lists the subchronic oral RfD as 5.0E-04 mg/kg-day.

4,4'-DDT is classified as Group B2 - Probable Human Carcinogen. This classification is based on tumors (usually liver) in various mouse strains and three rat studies. Human carcinogenicity data is inadequate. The oral slope factor listed in IRIS is 3.4E-01 $(mg/kg\text{-}day)^{-1}$. The inhalation unit risk is listed in IRIS as 9.7E-05 $(mg/m^3)^{-1}$. HEAST lists an inhalation slope factor of 3.4E-01 $(mg/kg\text{-}day)^{-1}$.

6.4.4.7 Diesel Fuel

Fuels are complex hydrocarbon mixtures produced by distillation of crude oil. Therefore, they may contain hundreds of hydrocarbon components as well as additives. Diesel fuels are middle distillates that are composed of less volatile hydrocarbons, generally coming off the distillation column at temperatures of 150-360 °C. Diesel fuels consist primarily of C_9 and C_{20} hydrocarbons. Marine diesel fuels are comprised roughly of 13% paraffins, 44% aromatics, and 44% naphthalenes (NTP, 1986). Marine diesel fuel may also contain greater than 10% PAHs (polyaromatic hydrocarbons). Soluble, volatile components of these fuel mixtures may consist of benzene, toluene, xylenes, and ethylbenzene.

The data are sufficient to derive a provisional oral RfD for marine diesel fuel based on subchronic inhalation studies. Studies on marine diesel fuel were conducted in beagle dogs, Fischer-344 rats, and C57BL/6 mice. Animals were exposed continuously to 300 mg/m^3 marine diesel fuel for 90 days. A LOAEL of 50 mg/m^3 (converted to 81 mg/kg-day) was identified in the study. This value was based on findings of fatty changes in the livers of female C57BL/6 mice. A provisional RfD of 8.0E-03 mg/kg-day was calculated for diesel fuel. An uncertainty factor of 10,000 was used and accounts for five areas of uncertainty: variation between and within species, use of a LOAEL (in lieu of a NOAEL), extrapolation to chronic duration, and deficiencies in the database (10x each). Overall confidence in this provisional RfD is low reflecting that only two doses were examined, the failure to identify a NOAEL, and the use of subchronic inhalation studies for development of a chronic oral RfD (USEPA, 1992).

Based on the available data, diesel fuel can be classified as Group D - Not Classifiable as to Human Carcinogenicity. Epidemiological studies provided no conclusive evidence for carcinogenicity of diesel fuels to humans and skin painting studies in laboratory animals were inconclusive. Classification of a chemical in weight-of-evidence Group D precludes quantitative risk assessment (USEPA, 1992)

6.4.4.8 Dichloroprop

Dichloroprop is considered to be a moderately toxic herbicide (Hawley, 1981). The acute LD_{50} (Lethal Dose for 50% of experimental animals) is 800 mg/kg for rats and 400 mg/kg for mice. The acute percutaneous LD_{50} in mice is 1400 mg/kg. It is not an irritant to the eyes at 10 g/L or to skin at 24 g/L. In a 98-day feeding study conducted in rats, no toxic effects were observed in animals receiving 12.4 mg/kg-day although slight liver hypertrophy was observed at the 50 mg/kg-day dose (Worthington and Walker, 1983).

Neither IRIS nor HEAST list an oral RfD for dichloroprop. However, a risk assessment for this compound is currently under review by an USEPA work group.

6.4.4.9 Endrin

No long-term health effects have been noted in workers employed in endrin manufacture or field application that were exposed dermally or by inhalation. Endrin causes death within a few hours upon ingestion of large quantities. Acute studies demonstrate that death due to CNS stimulation is the primary acute lethal effect associated with endrin exposure. In less severe cases of exposure to high levels, endrin causes headache, dizziness, nausea, vomiting, nervousness, and confusion. Some of these symptoms can continue for weeks. Liver, kidney, heart, and brain damage was reported following oral and inhalation exposures. However, endrin is no longer used commercially and, therefore, the general public is not likely to encounter levels sufficient

to lead to toxic neurological effects or to cause death (ATSDR, *Toxicological Profile for Endrin/Endrin aldehyde*, 1990).

Studies conducted on laboratory animals confirm that the primary target organ for endrin toxicity is the brain and nervous system. Birth defects, such as abnormal bone formation, have been observed in some animals studies. These data suggest that endrin exposure during pregnancy could pose a human health risk to the developing fetus at relatively high levels, although no human data are available concerning the developmental effects of endrin (ATSDR, *Toxicological Profile for Endrin/Endrin aldehyde*, 1990).

It is not known whether endrin can be expected to increase the risk of humans for developing certain types of cancer. Studies using rodents and dogs indicated that endrin did not cause cancer in these animals. However, there were deficiencies in these studies that precluded accurately evaluating the carcinogenic potential of endrin (ATSDR, *Toxicological Profile for Endrin/Endrin aldehyde*, 1990).

IRIS lists the oral RfD for endrin as 3E-04 mg/kg/day. This value was derived from a chronic oral bioassay in dogs. Three to seven dogs/sex were fed diets containing 0.1, 0.5, 1.0, 2.0, or 4.0 ppm endrin for two years. The 2 and 4 ppm dose groups experienced occasional convulsions, slightly increased relative liver weights, and mild histopathological effects in the liver. The NOEL was 1 ppm while the LOAEL was 2 ppm. The 1 ppm dose was equivalent to 0.025 mg/kg/day. The uncertainty factor is 100 to account for uncertainty in the extrapolation of dose levels from animals to humans and for uncertainty in the threshold for sensitive humans. The confidence level is medium because information on reproductive effects is lacking. A subchronic RfD of 3E-04 is listed in HEAST.

Endrin is classified as Group D - Not Classifiable as to Human Carcinogenicity. This classification is based on the fact that it did not produce carcinogenic

effects in two strains of rats or three strains of mice when given orally. Several of the bioassays had inadequacies which cast doubt on the strength of the negative findings. Human carcinogenicity data is inadequate for use in classification. No slope factor was given for endrin.

6.4.4.10 Heptachlor Epoxide

Upon entering the body, heptachlor is metabolized to heptachlor epoxide and other related chemicals. Heptachlor is a major component of the pesticide chlordane. Information regarding human health effects from exposures to heptachlor is sparse. Tremors and convulsions have been reported in experimental animals exposed orally to high levels of heptachlor for short periods of time. Long-term exposure to heptachlor may adversely affect the liver. Animals fed heptachlor in an experimental setting have been reported to have enlarged livers, liver damage, kidney damage, and increased red blood cell count. Tremors and convulsions have also been reported in animals exposed to heptachlor on a long-term basis (ATSDR *Toxicological Profile for Heptachlor/Heptachlor Epoxide*, 1992).

Heptachlor epoxide is more harmful than heptachlor, primarily because of its ability to be stored in fat for long periods of time. The other breakdown products of heptachlor epoxide generally are less toxic. Long-term exposure to heptachlor epoxide may adversely affect the liver. Animals fed heptachlor epoxide in an experimental setting have been reported to have enlarged livers, liver damage, kidney damage, and increased red blood cell count.

Placental transfer of heptachlor epoxide has been reported following inhalation exposure. Heptachlor epoxide has also been identified in breast milk. This compound has been detected in stillborn infant brain, adrenal, lung, heart, liver, kidney, spleen, and adipose tissues. However, the studies reporting these findings were limited by lack of data concerning route, duration, extent of exposure, and number of cases

examined. No gross malformations were reported in any of the stillborn infants. Although a developing fetus could be exposed to heptachlor epoxide transplacentally, the existing data are inadequate to establish a relationship between exposure and human developmental toxicity (ATSDR *Toxicological Profile for Heptachlor/Heptachlor Epoxide*, 1992).

The oral RfD for heptachlor epoxide is listed as 1.3E-05 mg/kg-day in IRIS. This value is based on a chronic feeding study conducted in beagle dogs. Dogs from 23 to 27 weeks of age were fed diets containing 0,0.5, 2.5, 5, or 7.5 ppm of heptachlor epoxide for 60 weeks. The critical effect noted in the study was treatment-related increases in liver-to-body weight ratios. Effects were noted in both males and females and a LEL of 0.5 ppm was established. A NOAEL was not established in this study. An uncertainty factor of 1000 was used to account for inter- and intraspecies differences and to account for the fact that a NOAEL was not established in the study. The confidence associated with the oral RfD was low, reflecting that the principal study was of low quality and that the database on chronic toxicity is complete but consists of low quality studies. The subchronic RfD listed in HEAST is the same as the chronic RfD (1.3E-05 mg/kg-day) listed in IRIS.

Heptachlor epoxide is classified by the USEPA as Group B2 - Probable Human Carcinogen. Sufficient evidence exists from rodent studies in which liver carcinomas were induced in two strains of mice of both sexes and in CFN female rats. It is also structurally similar to several other liver carcinogens. There are no published epidemiologic evaluations of heptachlor epoxide. The oral slope factor listed in IRIS is 9.1E+00 $(mg/kg\text{-}day)^{-1}$. An inhalation unit risk of 2.63E-03 $\mu g/m^3$ was calculated from oral data.

6.4.4.11 2-Hexanone

Workers exposed to 2-Hexanone for almost a year experienced weakness, numbness, and tingling in the skin of the hands and feet. In animals that ingested or breathed 2-Hexanone, weakness, clumsiness and paralysis were seen. Subchronic effects in animals that inhaled pure 2-Hexanone included nerve damage, weakness in the legs, a decreased number of white blood cells, and decreased weight of testes. Paralysis was seen in rats who ingested 2-Hexanone for more than 14 days and similar effects were seen after dermal contact (*Toxicological Profile for 2-Hexanone*, 1991).

An outbreak of distal polyneuropathy was reported in a fabric plant using 2-hexanone for about 10 months. Eight of 86 employees showing symptoms had weight losses of 3 to 60 pounds and moderate to severe neurological impairment. Other employees had mild sensory impairment and electrodiagnostic abnormalities. The concentration of 2-hexanone averaged 9.2 ppm in front of fabric printing machines and about 36 ppm behind the machines. After use of 2-hexanone was discontinued, weight gain was uniformly noted in those that had lost weight. Other chemicals, such as methyl ethyl ketone, may have been present in the atmosphere *(Toxicological Profile for 2-Hexanone*, 1991).

Developmental effects in rats exposed to 1,000 ppm or 2,000 ppm 2-hexanone (purity not stated) during gestation included hyperactivity in the young and decreased activity in the geriatric stage. Also noted was decreased rate of avoidance learning in puberty-aged females of treated dams and increased random movement in puberty-aged and adult offspring of treated dams (*Toxicological Profile for 2-Hexanone*, 1991).

Toxicity values for 2-hexanone were not available in IRIS or HEAST. An LD_{50} of 2,590 mg/kg was calculated for gavage administration of 2-hexanone to rats. No deaths occurred in 24 hours in rats given 1,500 mg/kg by gavage. The NOAEL for acute

exposure resulting in hepatic and renal effects was reported to be 1,500 mg/kg-day in rats. A LOAEL of 660 mg/kg-day was reported for a 90 day study resulting in weight loss in rats. For intermediate exposure (40 weeks), a NOAEL of 400 mg/kg-day resulting in hepatic and renal effects in rats was reported. In guinea pigs, a LOAEL of 600 mg/kg-day resulted in abnormal pupil response and in hens, a LOAEL of 100 mg/kg-day resulted in ataxia (*Toxicological Profile for 2-Hexanone*, 1991).

6.4.4.12 2-(2-Methyl-4-Chlorophenoxy)Propionic Acid

The RfD for 2-(2-methyl-4-chlorophenoxy)propionic acid (MCPP) is listed in IRIS as 1E-03 mg/kg/day. This is supported by a 90-day study in which rats were dosed with 0, 50, 150, or 450 ppm (0, 3, 9, or 26 mg/kg/day) MCPP in the diet. There was an increase in absolute and relative kidney weights in males and increased relative kidney weights in females at 150 ppm (9 mg/kg-day). Increased relative and absolute kidney weights in both sexes, increased creatinine levels in females and decreased glucose levels in males were observed at 450 ppm (26 mg/kg-day). The NOAEL established in this study was 3 mg/kg-day. A LEL (Lowest Effect Level) of 9 mg/kg-day was also established. An uncertainty factor of 1000 accounts for the inter- and intraspecies differences and for the duration of the study (10x each). An additional factor of 3 accounts for the lack of a second species toxicity feeding study (e.g. dog) and lack of a reproductive study in rats (total UF = 3000). The confidence level for the oral RfD is medium due to the lack of a second species and a reproductive study. HEAST lists a subchronic RfD of 1E-02 mg/kg/day.

No information on carcinogenicity is available in IRIS or HEAST at this time.

6.4.4.13 Methylene Chloride

Based on the results from experimental studies, exposure to methylene chloride vapors may cause eye irritation and cornea damage. One study reported these effects at 400 ppm, however, the effects usually disappeared within a few days. Inhalation of 300 ppm or greater concentrations of methylene chloride for short periods of time (3 to 4 hours), may result in a slight, but temporary hearing loss and slight vision impairment. Inhalation of higher concentrations (800 ppm) may result in slowed reaction time, loss of balance and stability, and decreased ability to perform tasks requiring fine motor skills. Longer exposures may cause dizziness, nausea, tingling or numbness of the fingers and toes, and drunkenness. In most cases, these effects disappear upon cessation of exposure. Studies conducted in experimental animals suggest that exposure to higher concentrations (greater than 1,000 ppm) can lead to unconsciousness and death (ATSDR, *Draft Toxicological Profile for Methylene Chloride*, 1992).

Inhalation of methylene chloride has been reported to cause changes in the liver and kidneys of animals but similar effects have not been observed in humans. Studies conducted with laboratory animals indicated that inhalation of methylene chloride does not cause birth defects or affect reproduction, even at high concentrations. Methylene chloride has not been associated with cancer in humans exposed to vapors in the workplace. However, inhalation of high concentrations for long periods of time did cause cancer in mice. No information was located in the available literature regarding the effects of methylene chloride in humans following oral exposure. Methylene chloride has resulted in the death of rats orally exposed to large quantities over a short period of time. No information was located on the health effects associated with dermal contact with methylene chloride (ATSDR, *Draft Toxicological Profile for Methylene Chloride*, 1992).

IRIS lists a chronic oral RfD of 6.0E-02 mg/kg-day. The subchronic RfD listed in HEAST is the same value. This is based on a chronic drinking water bioassay conducted in rats. Rats received 5, 50, 125 or 250 mg/kg-day methylene chloride for two years. Histologic alterations of the liver were evident at doses of 50 mg/kg-day or higher. The low dose of 5 mg/kg-day was established as a NOAEL.

An uncertainty factor of 100 was applied to account for intra- and interspecies variability to the toxicity in lieu of specific data (10x each). The level of confidence in the oral RfD is medium. This rating reflects that the critical study was well performed but that only a few studies support the NOAEL. HEAST listed both the chronic and subchronic inhalation RfC as 3.0E+00 mg/m^3. However, the chronic RfC is currently under review by USEPA work group and, therefore, the number may change.

USEPA has classified methylene chloride as a Group B2 - Probable Human Carcinogen. There is sufficient evidence of carcinogenicity in animals including increased incidence of hepatocellular neoplasms and alveolar/bronchiolar neoplasms in mice, benign mammary tumors in rats, salivary gland sarcomas in male rats and leukemia in female rats. However, the human carcinogenicity data are considered inadequate for use in classifying this compound. IRIS lists the oral slope factor as 7.5E-03 (mg/kg-day)$^{-1}$. IRIS also lists an inhalation unit risk factor of 4.7E-07 (μg/m^3)$^{-1}$.

6.4.4.14 4-Methyl-2-pentanone

High vapor concentrations of 4-methyl-2-pentanone (MIBK) cause irritation of the conjunctiva and mucous membranes of the nose and throat. Narcosis may occur with additional symptoms of weakness, headache, nausea, light headedness, vomiting, dizziness, and incoordination.

Rats, mice, and dogs exposed to 100 and 200 ppm MIBK exhibited no signs of toxicity during two weeks of exposure. Increased relative and absolute kidney weights

were reported. Increased absolute liver weights were noted at the 200 ppm dose. Microscopic examination revealed toxic nephrosis of the proximal tubules in rats at both doses.

Twelve men and women were subjected to various concentrations of MIBK for 15 minute time periods in a sensory threshold study. Most subjects considered 100 ppm to be satisfactory for 8 hours. MIBK vapor was irritating to the eyes at 200 ppm.

A group of workers exposed to 100 ppm of MIBK during the waterproofing of boots complained of headache and nausea. Tolerance to MIBK was developed by this group but was lost over the weekend when the workers were no longer exposed. Another group with similar exposures reported respiratory irritation. Based on these reports and the animal data cited, a time-weighted average threshold limit value (TWA-TLV) of 50 ppm and a STEL of 75 ppm were adopted to protect workers from the irritant effects of MIBK and its potential adverse effects on the kidney (ACGIH Documentation, 1986).

Neither IRIS or HEAST listed toxicity values for MIBK. USEPA has not classified MIBK as to carcinogenic potential.

6.4.4.15 Toluene

Toluene has the ability to dissolve fats. As a result, it causes pain when it comes in contact with the eye. Damage to the skin may occur upon dermal contact as a result of scattered loss of epithelial cells and solution of some of the fats that occur in these cells. Factory workers handling organic solvents such as toluene have been reported to have low sperm counts, abnormal sperm and varying degrees of infertility (Thomas, 1991). Toluene has also been reported to cause a decrement of pulmonary function (FEV_1) (Gordon and Amdur, 1991).

A chronic oral RfD value of 2.0E-01 mg/kg-day is listed in IRIS. The subchronic oral RfD listed in HEAST is 2.0E-00 mg/kg-day. These values are based primarily on a subchronic gavage study in which rats were administered varying doses of toluene for 13 weeks. All animals receiving the highest dose (5000 mg/kg) died within the first week. In males, absolute and relative weights of both the liver and kidney were significantly increased at doses greater than or equal to 625 mg/kg. Absolute and relative weights of the liver, kidney, and heart were significantly increased at doses greater than or equal to 1250 mg/kg in females. The NOAEL for this study was 312 mg/kg-day based on liver and kidney weight changes in male rats at 625 mg/kg. Because the exposure was for 5 days/week, this dose is converted to 223 mg/kg-day. The LOAEL was 625 mg/kg, which is 446 mg/kg-day when converted.

An uncertainty factor of 1000 was applied to derive the RfD to account for inter- and intraspecies extrapolations, for subchronic to chronic extrapolation and for limited reproductive and developmental toxicity data. The level of confidence in the oral RfD was medium. This rating reflects that a sufficient number of animals/sex were tested in six dose groups and that many parameters were studied, but that there was no reproductive study and that the oral studies were all subchronic. The chronic RfC of 4.0E-01 mg/m^3 has been verified according to the new interim methods for developing RfCs and is listed in IRIS. The subchronic inhalation RfC is listed in HEAST as 2.0E+00 mg/m^3.

USEPA has classified toluene as Group D - Not Classifiable as to Human Carcinogenicity. This classification reflects the lack of human carcinogenicity data and inadequate animal data. Therefore, no slope factor is listed.

6.4.4.16 2,4,5-Trichlorophenol

A chronic RfD for 2,4,5-trichlorophenol (2,4,5-T) of 1.0E-01 mg/kg-day is listed in IRIS. HEAST lists a subchronic RfD of 1.0E+00 mg/kg-day. These values are

based on a subchronic feeding study conducted in rats. Ten rats of each sex group were exposed to different levels (100-1000 ppm) of 2,4,5-T in the diet for 98 days. The critical effects observed in the study were liver and kidney pathology. Mild diuresis and degenerative changes in the liver and kidneys were observed in rats of both sexes in the 3000 ppm and higher dose groups. Therefore, a LOAEL of 3000 ppm was established. 1000 ppm of diet (or 100 mg/kg-day based on food consumption as 10% of body weight in young adults) was considered to be a NOAEL based on behavior, mortality, food consumption, growth, body and organ weights, and histopathology.

An uncertainty factor of 1000 was applied to derive the RfD and accounts for both intra- and interspecies variability to the toxicity of 2,4,5-T in lieu of specific data (10x each) and for extrapolation of a subchronic effect level to its chronic equivalent. The confidence in the RfD is low reflecting that an adequate number of doses were employed and several parameters were monitored but that only a few animals were tested per dose and that additional chronic/reproductive toxicity studies are needed. This was the only subchronic oral study in rodents found in the available literature. Until further chronic/reproductive studies become available, this RfD is recommended. The health effects of 2,4,5-T were reviewed by the USEPA RfD/RfC workgroup and determined to be inadequate for derivation of an inhalation RfC. The status of the chronic RfC for this substance is currently not verifiable.

The USEPA has not classified 2,4,5-T as to its carcinogenicity.

6.4.4.17 Xylenes

Short-term exposure of humans to high levels of xylene or chemical mixtures containing xylene causes irritation of skin, eyes, nose, and throat, increased reaction time to visual stimuli, impaired memory/stomach discomfort, and possible changes in the liver and kidneys. Short-term exposure of individuals to very high concentrations of xylene can result in death. Both short- and long-term exposure of

humans to xylenes can also cause a number of effects on the nervous system such as headaches, lack of muscle coordination, dizziness, confusion, and loss of balance (ATSDR, *Toxicological Profile for Total Xylenes*, 1990).

Information obtained from experimental studies conducted on animals is not adequate to determine whether xylene causes human cancer. However, studies on animals indicate that xylene may cause increased numbers of deaths, decreased weight, skeletal changes, delayed skeletal development, birth defects, and enzyme changes in organs of unborn animals (ATSDR, *Toxicological Profile for Total Xylenes*, 1990).

An oral RfD of 2.00E+00 mg/kg-day is listed in IRIS for the xylenes. This value is based on a chronic rat gavage study in which males and females were given doses of 0, 250, or 500 mg/kg/day, 5 days/week for 103 weeks. In addition, similar studies were conducted in male and female mice at doses of 0, 500, or 1000 mg/kg/day. A dose-related increase in mortality was observed in male rats at the high-dose level (500 mg/kg-day converted to 357 mg/kg-day). Increases in mortality were also seen at the 250 mg/kg-day dose (converted to 179 mg/kg-day) but these increases were not statistically significant. Many of the early deaths were caused by gavage error. Mice given the high-dose (1000 mg/kg-day) exhibited CNS toxicity (hyperactivity). No treatment-related histopathologic lesions were observed and the high-dose (500 mg/kg-day) is a FEL (Frank Effect Level) and the low dose (250 mg/kg-day) a NOAEL. An uncertainty factor of 100 was chosen for species extrapolation and to protect sensitive individuals (10x each). A confidence rating of medium was given for the RfD even though the study was well designed and contained adequately sized groups of two species which were tested over a substantial portion of their lifespan. This rating reflects the fact that clinical chemistries, blood enzymes, and urinalyses were not performed. HEAST lists a subchronic RfD of 4.0E+00 mg/kg-day.

EPA classifies xylene as Group D - Not Classifiable as to Human Carcinogenicity due to an inability of orally administered technical grade xylene to induce increased tumor response in rats and mice and lack of human data.

6.4.4.18 Zinc

Zinc is an important essential element and is only acutely toxic at relatively high levels. For most species, overt signs of toxicoses appear around 1000 ppm in a natural-ingredient diet. Signs of intoxication may include gastrointestinal distress, emesis, decreased food consumption, decreased growth, anemia, poor bone mineralization, damage to the pancreas, arthritis, and internal hemorrhaging. Patients taking 10 times the Recommended Daily Allowance for zinc for a chronic duration have not shown any adverse health effects. Long-term inhalation exposure may produce gastrointestinal disturbances, clinically latent liver dysfunction, or bouts with metal fume fever (Carson, et al., 1987); however, there is limited evidence in humans or laboratory animals supporting this (ATSDR, *Toxicological Profile for Zinc*, 1989).

IRIS lists an oral RfD of 3.0E-01 mg/kg-day for zinc. This value was based on a clinical study which investigated the effects of oral zinc supplements on copper and iron balance. This study is supported by several other studies which indicate that zinc supplementation can alter copper and iron biochemistry. Alterations in iron and copper balance are of concern since deficiencies have the potential to cause significant adverse effects such as anemia and alterations in high density lipoproteins, antioxidant defense mechanisms, and various enzyme activities. Declines in serum ferritin and hematocrit values have also been noted.

An intake of 50 mg/day (1.0 mg/kg-day) of supplemental zinc is considered a LOAEL. Healthy men given 25 mg of zinc twice daily for a 6-week duration displayed a significant decrease in erythrocyte superoxide dismutase. A NOAEL was not established in this study. An uncertainty factor of 3 was used in derivation of the RfD

based on a minimal LOAEL from a moderate duration study of the most sensitive humans and consideration of a substance that is an essential nutrient. A confidence rating in the RfD of medium reflects that the clinical studies were well-conducted and investigated numerous biochemical parameters but that only a few people were tested. HEAST lists a subchronic RfD of 2.0E-01 mg/kg-day. This is based on a human study in which 2.14 mg/kg-day of zinc was administered for therapeutic reasons. Anemia was the critical effect.

Zinc is classified as Group D -- Not Classifiable as to Human Carcinogenicity. This classification reflects the lack of both human and animal evidence.

6.4.5 Uncertainties Associated with Toxicity Information

Toxicity information for some of the chemicals of concern for this risk assessment was limited. Therefore, varying degrees of uncertainty are associated with the toxicity values presented in this document. Uncertainty associated with toxicity values used in this risk assessment arises from several sources.

A primary source of uncertainty results from the use of information obtained from alternate sources when USEPA-verified toxicity values are not available. It is difficult to assign a level of confidence to these values, although it is appropriate and necessary to use them. Greater uncertainty would result if chemicals that do not have published toxicity values were to be excluded from the assessment.

Physical and chemical descriptions of the exposure atmospheres, amounts to which individuals are exposed, and tissue retention patterns are generally not available for accidental human exposures. Therefore, studies conducted on laboratory animals (under controlled experimental conditions) must, of necessity, be used to provide the exposure, dose, and biological effects data needed to evaluate the toxicity of potentially hazardous materials to which humans may be exposed. However, there are striking

differences between laboratory animals and humans in anatomy and physiology. These differences are sources for variation in the toxic responses exhibited between different species. Complicating extrapolations from animals to man are differences in life span, body size, metabolic routes, and routes of exposure. Occasionally adjustments are made, on a case-by-case basis, for species differences in the rate of metabolism or retention within tissues. However, comparisons between species are usually made by use of standardized sizes or weights. These dose terms do not scale-up identically and are in some cases sources of uncertainty themselves.

Another source of uncertainty related to toxicity information is the use of dose-response information from effects observed at high doses to predict adverse health effects that may occur at the low levels to which humans are likely to be exposed in the environment. Sources of uncertainty occur in the USEPA potency estimates (slope factors) when they are applied to humans exposed to levels of putative carcinogens far below those administered to laboratory animals under experimental conditions. Many substances induce or enhance cancer in animals through processes for which a possible threshold can be identified. These effects usually only occur at very high doses and assuming that a lesser degree of the same effect occurs at lower doses is not necessarily an accurate portrayal of toxicity. This assumption may result in gross overestimation of the health risks associated with a particular chemical.

Two major factors that influence toxicity of chemicals are the duration and frequency of exposure. For many agents, the toxic effects following a single exposure are quite different from those produced by repeated and long-term exposures. In general, fractionation of the dose (or exposure) of a chemical reduces its toxicity. Therefore, a single exposure to a substance may produce an immediate severe effect and yet the same dose divided into multiple exposures may produce an attenuated response or no response at all. Such fractionation effects are generally the result of excretion between successive doses or to partial or full reversal of the injury produced by each exposure prior to the next exposure. Chronic (long-term) toxic effects occur if a chemical accumulates

(absorption exceeds excretion), if it produces irreversible toxic effects, or if there is insufficient time for the individual to recover from the injury within the exposure interval. Therefore, use of information obtained from short-term exposure studies to predict health effects in humans exposed on a long-term basis may be a source of uncertainty.

Uncertainties arise when information gathered in studies using homogenous animal populations (inbred strains) or healthy human populations (occupational exposures) to predict the effects that are likely to occur in the general human population. Human populations are a heterogenous group with variations in genetic constitution, diet, living environments (previous environmental exposures), activity patterns, and cultural patterns. All of these factors may influence metabolism, distribution of chemicals within the body, and susceptibility to the damaging effects of those chemicals. It is now well established that individuals exposed to several chemicals simultaneously or sequentially may exhibit altered pharmacologic or toxicologic responses. Interactions have been noted with respect to hepatotoxicity. For example, many of the chlorinated solvents induce enzymes in the liver that are involved in metabolism of chemicals. Therefore, an individual who is exposed to these chemicals may experience increased or decreased toxicity subsequent to exposure to other chemicals that undergo metabolism.

6.4.6 Summary of Toxicity Assessment

An understanding of the degree of uncertainty associated with toxicity information is an important part of interpreting and using that information to calculate toxicity values. The degree of confidence ascribed to toxicity values depends on both the quality of the critical study from which it was derived and the quantity of supporting data. USEPA-verified RfDs published in IRIS are accompanied by a statement of the confidence that the evaluators have in the RfD. A discussion of confidence ratings and USEPA's classification as to carcinogenicity are presented below.

Oral RfD values were available for 15 of the 21 individual contaminants of potential concern. Diesel fuel was the only chemical for which EPA-derived toxicity values were available that was not published in IRIS or HEAST. USEPA has derived a provisional oral RfD for diesel fuel. This value was obtained from a USEPA memorandum in response to a request for oral systemic and carcinogenic toxicity values for JP-4, JP-5, diesel fuel, and gasoline (AVGAS) found to contaminate soils and groundwater at McChord AFB (Wash Rack/Treatment), Tacoma, WA. The level of confidence in the 13 RfDs given on IRIS ranged from low (one chemical) to medium (five chemicals). One RfD (4-Methyl-2-pentanone) was obtained from HEAST, which does not provide information regarding the level of confidence associated with RfDs. Confidence in the provisional RfD for diesel fuel developed by the USEPA was low. Low confidence indicates that the toxicity value may change if additional toxicity data become available. Oral RfDs were not available for six chemicals of potential concern.

Inhalation RfCs were available only for toluene and methylene chloride. Confidence ratings cannot be ascribed to these values.

Fifteen of the 21 contaminants of potential concern have been classified by the USEPA as to carcinogenic potential. Seven chemicals were classified as Group D (Not Classifiable as to Human Carcinogenicity), indicating inadequate or no evidence of carcinogenicity. One of the chemicals of concern (β-BHC) was classified as Group C (Possible Human Carcinogen) based on limited evidence of carcinogenicity in animals and inadequate or lack of human data. Six chemicals were classified as Group B (Probable Human Carcinogen), indicating that there is sufficient evidence of the chemical's carcinogenicity in animals and inadequate or no evidence in humans. One chemical (γ-BHC) was classified as Group B2/C because of uncertainty about its weight-of-evidence classification. No chemicals were classified as Group A (Human Carcinogen) or Group E (Evidence of Noncarcinogenicity for Humans).

USEPA-derived oral slope factors were available for all of the chemicals of potential concern that have been classified as Group A, B, or C carcinogens. Inhalation slope factors (USEPA-derived) were available for two chemicals. Inhalation unit risk factors were available for six of the chemicals.

6.5 Risk Characterization

Risk characterization involves integrating the possible exposure pathways and estimated chemical intakes with the appropriate toxicity values to form quantitative and qualitative expressions of potential health risk. Measured contaminant exposure levels, as well as those predicted by fate and transport modeling, are compared to chemical-specific toxicity information to determine if current or future levels of contamination, at or near the site, warrant concern for human health. The following subsections briefly describe the methodology used to characterize risk, present and future noncarcinogenic and carcinogenic risk estimates for each exposure scenario, uncertainties associated with predicting risk, and identify the key chemicals of potential concern and exposure pathways that drive the risk assessment.

6.5.1 Risk Characterization Methodology

6.5.1.1 Carcinogenic Effects

The cancer slope factor converts estimated daily intakes to an estimate of incremental risk. Because the slope factor is often an upper 95th percentile confidence limit of the probability of a response based on experimental animal data and an assumption of linearity in the low dose portion of a dose-response curve, the carcinogenic risk estimate is generally an upper-bound estimate. This means "true risk" probably does not exceed the risk estimates generated in this assessment and is likely to be less than the predicted risk (USEPA, 1991).

For carcinogens, probabilities that an individual will develop cancer over a lifetime of exposure are estimated from projected exposure and the cancer slope factor. Exposure is quantified as the amount of a chemical available at the exchange boundary (i.e., skin, lungs, etc.) and available for absorption. The carcinogenic risk is calculated for each exposure scenario using the following equation:

$$\text{Risk} = \text{Exposure} \times \text{Slope Factor.}$$

The USEPA Superfund site remediation goal set forth in the NCP allows a cancer risk of 1.0E-5 (1 in 10,000) to 1.0E-8 (1 in 10,000,000). This range is designed to be protective of human health.

6.5.1.2 Noncarcinogenic Effects

To characterize potential noncarcinogenic effects, comparisons are made between projected intakes of substances over a specified time period and toxicity values, primarily oral, dermal, and inhalation reference doses. The ratio of exposure to toxicity value is the hazard quotient (HQ) and the HQ is calculated for each exposure scenario using the following equation:

$$\text{HQ} = \text{Exposure/RfD or RfC}$$

Note that the HQ is not a statistical probability of a noncarcinogenic effect occurring and should not be interpreted as such. If the exposure level exceeds the appropriate toxicity value (i.e., the hazard quotient is greater than one), there may be cause for concern regarding the potential noncarcinogenic effects as set forth in the NCP.

6.5.2 Potential Exposure Scenarios

To ensure adequate characterization of risk that may be incurred at Landfill No. 4 presently or in the future, two chronic scenarios and one subchronic scenario were identified for human exposure. The chronic exposure scenarios are: 1) off-site residential; and 2) on-site worker. The subchronic exposure scenario is for the on-site worker.

6.5.3 Combining Risks Associated with Chemicals and Exposure Pathways

For each scenario addressed in this risk assessment, the estimated carcinogenic risk for potential carcinogens is generated on a chemical-specific basis for each relevant pathway of exposure. The estimated risk is then summed for each chemical associated with a specific pathway to determine total risk by pathway. To determine the total exposure scenario risk, total risks for all pathways are summed.

The total risk number assumes that different carcinogens affect the same target organ to produce a cancer response, ignoring potential antagonistic or synergistic effects or disparate effects on different target organs. It also assumes that the individual in the exposure scenario is exposed to site-related contaminants at estimated exposure concentrations by all pathways that compose the scenario. The scenarios were constructed to include all potential pathways of exposure and it is possible for a single individual to be exposed by all pathways in a scenario. It is less likely, however, that a single individual will be exposed by each pathway at the conservatively estimated concentrations in the exposure media. For example, it is unlikely that an individual would be chronically exposed to maximum on/off-site ambient air concentrations and to maximum off-site concentrations predicted in agricultural products, because the sources of contamination are in different locations.

Likewise, the estimated hazard quotient for noncarcinogenic effects is generated on a chemical-by-chemical basis for each relevant pathway of exposure. The hazard quotients are then summed for each chemical associated with a specific pathway to determine the hazard index by pathway. The hazard indices for all pathways are finally summed to determine the total hazard index for the exposure scenario.

6.5.4 Documentation of Risk Characterization Results

The exposure and risk calculations were performed by a model (QSMART) developed by Radian to automate the exposure quantification and risk characterization process. The model automates the equations for chemical intake and generates chemical-specific hazard indices for noncarcinogenic effects using RfDs and chemical-specific carcinogenic risk estimates using cancer slope factors. The model sums the resultant values for chemicals in each of the exposure pathways, and across pathways, to generate a total scenario hazard index for noncarcinogenic effects and a total scenario cancer risk for carcinogenic effects. The program also calculates the percentage of the total risk contributed by each individual chemical and pathway of exposure. Appendix I contains the exposure and risk model output.

6.5.5 Risk Characterization for the Present Off-Site Residential Exposure Scenario

This scenario addresses pathways of exposure considered to be complete for off-site residents at the present time based on current use of the land and water. It assumes that land and water use will not change significantly over the duration of exposure.

The present off-site residential scenario assumes exposure to site-related contaminants at off-base locations via three pathways of exposure: 1) ingestion of fruits and vegetables; 2) ingestion of meats and dairy products; and 3) inhalation of volatiles

and particulates in the ambient air. There is little likelihood that contaminants detected in the soil at Landfill No. 4 will impact off-site surface soils because there is no feasible migration pathway. Therefore, surface soil pathways are not applicable. Currently, one farmer uses surface water drawn from the playa lake for agricultural purposes. Widespread exposure resulting from dermal contact or inhalation of volatiles is unlikely because of the single user of this potentially contaminated source. Therefore, these pathways have not been included in this risk assessment.

Exposure concentrations were based on: 1) modeled on-site concentrations in surface water for purposes of predicting uptake and accumulation in fruits, vegetables, meat, and dairy products; 2) predicted contaminant concentrations in groundwater; and 3) predicted contaminant concentrations in ambient air, based on concentrations in on-site surficial and deep soil samples.

Carcinogenic effects were estimated for adults only. Chronic exposure was evaluated for 1) an average case, using average or 50th percentile values for exposure parameters (e.g., contaminant concentration, body weight, intake rates, exposure duration and frequency); and 2) a reasonable maximum case, using the 95th (occasionally 90th) percentile values for exposure parameters when available and appropriate. Noncarcinogenic effects were evaluated for adults and children with both average and reasonable maximum exposure parameters.

Several chemicals were detected in surficial soil samples and were therefore modeled to the playa lake in order to estimate the potential contribution of surface runoff from Landfill No. 4 to human exposure scenarios associated with the site. based on modeled air emission results, several chemicals are predicted to enter the atmosphere above the site via volatilization or wind entrainment of contaminated dust.

6.5.5.1 Carcinogenic Effects

Adults--Tables 6-8 and 6-9 characterize the average and reasonable maximum carcinogenic risk for adults, respectively. The total hazard indices for average and reasonable maximum exposure were 1E-9 and 1E-8, respectively. These hazard indices are well within the Superfund site remediation risk range goal and suggest that contaminants migrating off-site are not likely to cause adverse carcinogenic health effects in residential adults under current exposure conditions. Aldrin contributes 81% and 86% of the average and reasonable maximum chemical-specific risk, respectively. Ingestion pathways contribute the majority of the risk for average and reasonable maximum exposure scenarios. Ingestion of fruit, vegetables, meat, and milk contribute 26%, 47%, 16%, and 11%, respectively, of the pathway-specific risk for average exposure and 18%, 34%, 31%, and 18% of the pathway-specific risk for reasonable maximum exposure.

6.5.5.2 Noncarcinogenic Effects

Adults--Tables 6-10 and 6-11 characterize the average and reasonable maximum noncarcinogenic risk for adults, respectively. The total hazard indices were 2E-3 and 5E-3 for average and reasonable maximum exposure, respectively. These hazard indices suggest that contaminants migrating off-site are not likely to cause adverse noncarcinogenic health effects in residential adults under current exposure conditions. Zinc contributed 64% of the average and 83% of the reasonable maximum chemical-specific risk. Methylene chloride contributed 26% and 12% of the average and reasonable maximum chemical-specific risks. The inhalation pathway contributed 35% of the total average risk. Ingestion of meat contributed 47% of the total reasonable maximum risk.

USEPA recommends comparing the concentrations of chemicals in ambient air with a reference concentration (RfC) rather than a reference dose (RfD) for

Table 6-8

Average Cancer Risk for Off-Site Residential Adult - Present

Chemical	Inhalation of Ambient Air	Ingestion of Fruits	Ingestion of Vegetables	Ingestion of Meat	Ingestion of Milk	Total	Percent Contribution
Aldrin	2E-15	3E-10	6E-10	2E-10	2E-10	1E-09	81
beta-BHC	1E-16	6E-11	1E-10	4E-13	4E-13	2E-10	11
gamma-BHC	8E-18	5E-11	9E-11	2E-13	2E-13	1E-10	8
4,4'-DDD	0E+00	3E-14	6E-14	2E-13	1E-13	3E-13	<1
4,4'-DDE	0E+00	1E-13	2E-13	3E-13	2E-13	8E-13	<1
4,4'-DDT	4E-17	1E-13	2E-13	3E-12	2E-12	5E-12	<1
Methylene chloride	1E-13	0E+00	0E+00	3E-17	2E-17	1E-13	<1
Total by pathway	1E-13	4E-10	7E-10	3E-10	2E-10		
% Contribution by pathway	<1	26	47	16	11		
Scenario Total						1E-09	

Table 6-9

Reasonable Maximum Cancer Risk for Off-Site Residential Adult - Present

Chemical	Inhalation of Ambient Air	Ingestion of Fruits	Ingestion of Vegetables	Ingestion of Meat	Ingestion of Milk	Total	Percent Contribution
Aldrin	6E-15	2E-09	3E-09	4E-09	2E-09	1E-08	86
beta-BHC	4E-16	3E-10	6E-10	6E-12	5E-12	9E-10	8
gamma-BHC	3E-17	2E-10	5E-10	3E-12	2E-12	7E-10	6
4,4'-DDD	0E+00	2E-13	3E-13	2E-12	1E-12	4E-12	<1
4,4'-DDE	0E+00	5E-13	1E-12	5E-12	3E-12	9E-12	<1
4,4'-DDT	1E-16	5E-13	1E-12	4E-11	2E-11	6E-11	<1
Methylene chloride	4E-13	0E+00	0E+00	4E-16	3E-16	4E-13	<1
Total by pathway	4E-13	2E-09	4E-09	4E-09	2E-09		
% Contribution by pathway	<1	18	34	31	18		
Scenario Total						1E-08	

Table 6-10

Average Non-Cancer Risk for Off-Site Residential Adult - Present

Chemical	Inhalation of Ambient Air	Ingestion of Fruits	Ingestion of Vegetables	Ingestion of Meat	Ingestion of Milk	Total	Percent Contribution
Acetone	0E+00	0E+00	0E+00	8E-14	5E-14	1E-13	<1
Aldrin	0E+00	5E-06	9E-06	4E-06	3E-06	2E-05	<1
gamma-BHC	0E+00	1E-06	2E-06	4E-09	3E-09	3E-06	<1
4,4'-DDT	0E+00	5E-09	9E-09	1E-07	9E-08	2E-07	<1
Endrin	0E+00	4E-08	7E-08	1E-07	3E-08	2E-07	<1
4-Methyl-2-pentanone	3E-07	0E+00	0E+00	0E+00	0E+00	3E-07	<1
Methylene chloride	6E-04	0E+00	0E+00	4E-13	3E-13	6E-04	26
Toluene	2E-04	0E+00	0E+00	5E-13	3E-13	2E-04	9
2,4,5-T	0E+00	0E+00	0E+00	4E-11	2E-11	6E-11	<1
Zinc	0E+00	2E-04	6E-04	5E-04	2E-04	2E-03	64
Total by pathway	8E-04	2E-04	6E-04	5E-04	2E-04		
% Contribution by pathway	35	8	25	24	9		
Scenario Total						2E-03	

Table 6-11

Reasonable Maximum Non-Cancer Risk for Off-Site Residential Adult - Present

Chemical	Inhalation of Ambient Air	Ingestion of Fruits	Ingestion of Vegetables	Ingestion of Meat	Ingestion of Milk	Total	Percent Contribution
Acetone	0E+00	0E+00	0E+00	3E-13	2E-13	5E-13	<1
Aldrin	0E+00	7E-06	1E-05	2E-05	1E-05	5E-05	<1
gamma-BHC	0E+00	1E-06	3E-06	2E-08	1E-08	4E-06	<1
4,4'-DDT	0E+00	7E-09	1E-08	6E-07	3E-07	9E-07	<1
Endrin	0E+00	6E-08	1E-07	5E-07	1E-07	7E-07	<1
4-Methyl-2-pentanone	3E-07	0E+00	0E+00	0E+00	0E+00	3E-07	<1
Methylene chloride	6E-04	0E+00	0E+00	2E-12	1E-12	6E-04	12
Toluene	2E-04	0E+00	0E+00	2E-12	1E-12	2E-04	4
2,4,5-T	0E+00	0E+00	0E+00	2E-10	8E-11	2E-10	<1
Zinc	0E+00	3E-04	9E-04	2E-03	7E-04	4E-03	83
Total by pathway	8E-04	3E-04	9E-04	2E-03	8E-04		
% Contribution by pathway	16	6	18	47	14		
Scenario Total						5E-03	

assessing inhalation exposure (USEPA, 1990). USEPA has been involved for the last three years in developing a method for derivation of inhalation RfCs. This decision was meant to more clearly distinguish between oral and inhalation exposure. Currently, RfCs are available only for a limited number of compounds. Inhalation RfCs were not available for some contaminants predicted to enter the atmosphere via volatilization (acetone, diesel fuel, 2-hexanone, hydrocarbons, 2,4,5-T and xylenes) or wind entrainment of contaminated surface soil (aldrin, 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, dichloroprop, endrin, heptachlor epoxide, MCPP, β-BHC, δ-BHC, γ-BHC, and zinc). Therefore, the contribution of these chemicals to the total noncarcinogenic risks associated with the inhalation pathway could not be assessed.

Children--Tables 6-12 and 6-13 illustrate the average and reasonable maximum noncarcinogenic risk for children, respectively. The hazard index was 7E-3 for average and 1E-2 for reasonable maximum exposure, suggesting that estimated exposure to children is unlikely to result in adverse noncarcinogenic health effects. Zinc contributed the majority (86% and 93% for average and reasonable maximum, respectively) of the chemical-specific risk. Ingestion of vegetables was responsible for 41% of the total risk for average exposure and ingestion of meat was responsible for 36% of the risk for reasonable maximum exposure.

6.5.6 Risk Characterization for the Present On-Site Worker Exposure Scenario

This scenario addresses pathways of exposure considered to be complete for an on-site worker at the present time. Surficial and deep soil samples were taken at the site. Laboratory analyses indicated contamination with a variety of chemicals, primarily pesticides, at depths ranging from 0 to 60 feet. The presence of snakes, small animals, and tall grasses indicates little or no disturbances by humans in the area. There are currently no invasive activities at the site. Therefore, direct human contact with contaminants in the soil is currently unlikely.

Table 6-12

Average Non-Cancer Risk for Off-Site Residential Child - Present

Chemical	Inhalation of Ambient Air	Ingestion of Fruits	Ingestion of Vegetables	Ingestion of Meat	Ingestion of Milk	Total	Percent Contribution
Acetone	0E+00	0E+00	0E+00	2E-13	2E-13	4E-13	<1
Aldrin	0E+00	2E-05	4E-05	9E-06	1E-05	8E-05	1
gamma-BHC	0E+00	4E-06	8E-06	9E-09	2E-08	1E-05	<1
4,4'-DDT	0E+00	2E-08	4E-08	3E-07	4E-07	8E-07	<1
Endrin	0E+00	2E-07	3E-07	2E-07	1E-07	8E-07	<1
Methylene chloride	6E-04	0E+00	0E+00	1E-12	2E-12	6E-04	9
4-Methyl-2-pentanone	3E-07	0E+00	0E+00	0E+00	0E+00	3E-07	<1
Toluene	2E-04	0E+00	0E+00	1E-12	1E-12	2E-04	3
2,4,5-T	0E+00	0E+00	0E+00	8E-11	1E-10	2E-10	<1
Zinc	0E+00	9E-04	3E-03	1E-03	9E-04	6E-03	86
Total by pathway	8E-04	9E-04	3E-03	1E-03	9E-04		
% Contribution by pathway	12	14	41	19	14		
Scenario Total						7E-03	

Table 6-13

Reasonable Maximum Non-Cancer Risk for Off-Site Residential Child - Present

Chemical	Inhalation of Ambient Air	Ingestion of Fruits	Ingestion of Vegetables	Ingestion of Meat	Ingestion of Milk	Total	Percent Contribution
Acetone	0E+00	0E+00	0E+00	8E-13	9E-13	2E-12	<1
Aldrin	0E+00	3E-05	6E-05	4E-05	5E-05	2E-04	1
gamma-BHC	0E+00	7E-06	1E-05	4E-08	6E-08	2E-05	<1
4,4'-DDT	0E+00	3E-08	7E-08	1E-06	2E-06	3E-06	<1
Endrin	0E+00	3E-07	5E-07	1E-06	5E-07	2E-06	<1
Methylene chloride	6E-04	0E+00	0E+00	5E-12	6E-12	6E-04	4
4-Methyl-2-pentanone	3E-07	0E+00	0E+00	0E+00	0E+00	3E-07	<1
Toluene	2E-04	0E+00	0E+00	5E-12	5E-12	2E-04	1
2,4,5-T	0E+00	0E+00	0E+00	4E-10	4E-10	8E-10	<1
Zinc	0E+00	1E-03	4E-03	6E-03	3E-03	1E-02	93
Total by pathway	8E-04	1E-03	4E-03	6E-03	3E-03		
% Contribution by pathway	5	9	28	36	22		
Scenario Total						1E-02	

The present on-site worker scenario assumes exposure to site-related contaminants via inhalation of contaminants emitted to the atmosphere above the site. Exposure concentrations were based on predicted concentrations at the site perimeter calculated from measured concentrations in surficial and deep soil samples taken from soil borings within the confines of the landfill. Concentrations of contaminants in the air are expected to be highest at this location.

On-site workers were assumed to be adults. Therefore, noncarcinogenic and carcinogenic effects were evaluated with both average and reasonable maximum exposure parameters. Noncarcinogenic effects were evaluated assuming both chronic (25 years) and subchronic (7 years) exposures.

6.5.6.1 Carcinogenic Effects

Tables 6-14 and 6-15 show the carcinogenic risk resulting from average and reasonable maximum on-site worker exposure, respectively. For average exposure, the risk value was 2E-14. The risk value associated with reasonable maximum on-site worker exposure was 7E-14. Both of these risk values are within the Superfund site remediation goal. Inhalation of methylene chloride accounts for 98% of the chemical-specific risk for both average and reasonable maximum exposure scenarios.

6.5.6.2 Noncarcinogenic Effects

Tables 6-16 and 6-17 illustrate the noncarcinogenic risks resulting from average and reasonable maximum on-site worker chronic exposure scenarios, respectively. Tables 6-18 and 6-19 characterize the noncarcinogenic risks resulting from average and reasonable maximum on-site worker subchronic exposure scenarios, respectively. The hazard indices for the average chronic and subchronic exposure scenarios were 5E-5 and 1E-3, respectively. The hazard indices associated with the

Table 6-14

Average Cancer Risk for On-Site Worker - Present

Chemical	Inhalation of Ambient Air	Total	Percent Contribution
Aldrin	3E-16	3E-16	<1
beta-BHC	2E-17	2E-17	<1
gamma-BHC	1E-18	1E-18	<1
4,4'-DDT	7E-18	7E-18	<1
Methylene chloride	2E-14	2E-14	98
Total by pathway	2E-14		
% Contribution by pathway	100		
Scenario Total		2E-14	

Table 6-15

Reasonable Maximum Cancer Risk for On-Site Worker - Present

Chemical	Inhalation of Ambient Air	Total	Percent Contribution
Aldrin	1E-15	1E-15	2
beta-BHC	8E-17	8E-17	<1
gamma-BHC	5E-18	5E-18	<1
4,4'-DDT	3E-17	3E-17	<1
Methylene chloride	7E-14	7E-14	98
Total by pathway	7E-14		
% Contribution by pathway	100		
Scenario Total		7E-14	

Table 6-16

Average Non-Cancer Risk for On-Site Worker - Present (Chronic)

Chemical	Inhalation of Ambient Air	Total	Percent Contribution
Methylene chloride	4E-05	4E-05	74
4-Methyl-2-pentanone	2E-08	2E-08	<1
Toluene	1E-05	1E-05	26
Total by pathway	5E-05		
% Contribution by pathway	100		
Scenario Total		5E-05	

Table 6-17

Reasonable Maximum Non-Cancer Risk for On-Site Worker - Present (Chronic)

Chemical	Inhalation of Ambient Air	Total	Percent Contribution
Methylene chloride	1E-04	1E-04	74
4-Methyl-2-pentanone	8E-08	8E-08	<1
Toluene	5E-05	5E-05	26
Total by pathway	2E-04		
% Contribution by pathway	100		
Scenario Total		2E-04	

Table 6-18

Average Non-Cancer Risk for On-Site Worker - Present (Subchronic)

Chemical	Inhalation of Ambient Air	Total	Percent Contribution
Methylene chloride	1E-03	1E-03	93
4-Methyl-2-pentanone	5E-08	5E-08	<1
Toluene	7E-05	7E-05	7
Total by pathway	1E-03		
% Contribution by pathway	100		
Scenario Total		1E-03	

Table 6-19

Reasonable Maximum Non-Cancer Risk for On-Site Worker - Present (Subchronic)

Chemical	Inhalation of Ambient Air	Total	Percent Contribution
Methylene chloride	4E-03	4E-03	95
4-Methyl-2-pentanone	2E-07	2E-07	<1
Toluene	2E-04	2E-04	5
Total by pathway	4E-03		
% Contribution by pathway	100		
Scenario Total		4E-03	

reasonable maximum chronic and subchronic exposure scenarios were 2E-4 and 4E-3, respectively. Inhalation of methylene chloride was responsible for 74% of the total risk associated with average and reasonable maximum chronic exposure. Inhalation of toluene contributed the other 26 percent. The risks associated with the subchronic exposure scenarios were calculated from maximum hourly average concentrations and therefore, resulted in higher hazard indices. Hourly averages are a function of local turbulence and meteorological conditions and represent the highest estimated air concentrations. Inhalation of methylene chloride was responsible for 93% and 95% of the total risk associated with average and reasonable maximum subchronic exposure, respectively. Inhalation of toluene contributed the rest of the risk.

6.5.7 Risk Characterization for the Future Off-Site Residential Exposure Scenario

This scenario addresses pathways of exposure considered to be complete for off-site residents at a point in the future, assuming that contaminants originating from Landfill No. 4 migrate to the groundwater. Although groundwater samples were not taken during the 1992 sampling event, groundwater modeling based on soil contaminant concentrations found at Landfill No. 4 indicated that future contamination of the groundwater with contaminants originating at Landfill No. 4 is likely to be insignificant. However, the groundwater ingestion, dermal contact and inhalation of vapor phase chemicals during domestic use pathways were included in this assessment in order to reflect the potential, although limited, for future exposure to contaminants present at Landfill No. 4. The scenario is based on predicted future lifetime exposures using current on-site contaminant concentrations in the soil and assuming that the release of contaminants will remain constant over time.

The future off-site residential scenario assumes exposure to contaminants via five exposure pathways: 1) ingestion of contaminated drinking water; 2) inhalation of vapor phase chemicals while showering; 3) dermal contact with residential water; 4)

ingestion of fruits and vegetables irrigated with contaminated groundwater; and 5) ingestion of meat and milk from farm animals exposed to contaminants in the groundwater and contaminated feed crops.

Exposure concentrations are based on: 1) predicted contaminant concentrations in groundwater (off-site), based on measured concentrations in deep soils and sediments and assuming steady state conditions; 2) predicted concentrations in the shower, based on predicted groundwater concentrations; 3) calculated uptake and accumulation in fruits, vegetables, meat, and milk, based on predicted groundwater concentrations; and 4) predicted contaminant concentrations in ambient air, based on soil concentrations.

Carcinogenic effects were estimated for adults only, using average and reasonable maximum exposure parameters. Noncarcinogenic effects were estimated for both adults and children, assuming average and reasonable maximum exposure parameters.

6.5.7.1 Carcinogenic Effects

Adults--The average and reasonable maximum carcinogenic risks for future off-site residential adults are presented in Tables 6-20 and 6-21, respectively. The total cancer risk for average exposure was 3E-12. The reasonable maximum cancer risk for this scenario was 1E-11. These values are well within the Superfund site remediation risk range for carcinogens and suggest that future off-site contaminant migration is not likely to result in a significant increase in the number of cancers in off-site residential adults as a result of exposure conditions. Ingestion of methylene chloride contaminated groundwater is responsible for the majority of the pathway- and chemical-specific risk for both average and reasonable maximum exposure (91% and 88% for average and reasonable maximum exposure, respectively). Dermal contact with methylene chloride

Table 6-20

Average Cancer Risk for Off-Site Residential Adult - Future

Chemical	Ingestion of Groundwater	Inhalation while Showering	Dermal Contact While Showering	Ingestion of Fruits	Ingestion of Vegetables	Ingestion of Meat	Ingestion of Milk	Total	Percent Contribution
gamma-BHC	2E-75	4E-85	6E-77	6E-80	1E-79	1E-78	6E-79	2E-75	<1
4,4'-DDE	8E-19	0E+00	1E-21	2E-24	3E-24	3E-20	2E-20	9E-19	<1
4,4'-DDT	2E-52	2E-61	2E-55	2E-58	3E-58	3E-53	2E-53	2E-52	<1
Methylene chloride	3E-12	1E-21	3E-13	0E+00	0E+00	5E-18	4E-18	3E-12	100
Total by pathway	3E-12	1E-21	3E-13	2E-24	3E-24	5E-18	4E-18		
% Contribution by pathway	91	<1	9	<1	<1	<1	<1		
Scenario Total								3E-12	

Table 6-21

Reasonable Maximum Cancer Risk for Off-Site Residential Adult - Future

Chemical	Ingestion of Groundwater	Inhalation while Showering	Dermal Contact While Showering	Ingestion of Fruits	Ingestion of Vegetables	Ingestion of Meat	Ingestion of Milk	Total	Percent Contribution
gamma-BHC	1E-74	4E-84	4E-76	3E-79	6E-79	1E-77	7E-78	1E-74	<1
4,4'-DDE	4E-18	0E+00	8E-21	9E-24	2E-23	5E-19	3E-19	5E-18	<1
4,4'-DDT	8E-52	1E-60	2E-54	9E-58	2E-57	5E-52	2E-52	1E-51	<1
Methylene chloride	1E-11	1E-20	2E-12	0E+00	0E+00	8E-17	5E-17	1E-11	100
Total by pathway	1E-11	1E-20	2E-12	9E-24	2E-23	8E-17	5E-17		
% Contribution by pathway	88	<1	12	<1	<1	<1	<1		
Scenario Total								1E-11	

while showering accounts for virtually all of the remaining risk for both average and reasonable maximum exposure.

6.5.7.2 Noncarcinogenic Effects

Adults--Tables 6-22 and 6-23 characterize the average and reasonable maximum noncarcinogenic risk for future off-site adults, respectively. The total hazard index was 1E-2 for average exposure and 2E-2 for reasonable maximum exposure. Both values are below the Superfund site remediation goal of 1 for noncarcinogens. These hazard indices suggest that contaminant migration off-site is not likely to cause adverse noncarcinogenic health effects in off-site residential adults under future exposure conditions. Ingestion of contaminated groundwater contributed the majority of the pathway-specific risk for the average exposure scenario (71%). Ingestion of meat contributed most of the pathway-specific risk (47%) associated with reasonable maximum exposure. Zinc was responsible for the majority of the chemical-specific risk (99%).

Children--The average and reasonable maximum noncarcinogenic risk for children living off-site under future exposure conditions are presented in Tables 6-24 and 6-25, respectively. The hazard indices for the average and reasonable maximum exposure scenarios were 3E-2 and 6E-2, both of which are below the Superfund site remediation goal for noncarcinogens. These hazard indices suggest that contaminant migration off-site is not likely to cause adverse noncarcinogenic health effects in off-site residential children under future exposure conditions. Ingestion of contaminated groundwater contributed the majority of the pathway-specific risk (75%) for the average exposure scenario while ingestion of meat contributed most of the pathway-specific risk (43%) associated with reasonable maximum exposure. Again, zinc was responsible for the majority of the chemical-specific risk (99%).

Table 6-22

Average Non-Cancer Risk for Off-Site Residential Adult - Future

Chemical	Ingestion of Groundwater	Inhalation while Showering	Dermal Contact While Showering	Ingestion of Fruits	Ingestion of Vegetables	Ingestion of Meat	Ingestion of Milk	Total	Percent Contribution
gamma-BHC	4E-71	0E+00	1E-72	1E-75	2E-75	2E-74	1E-74	4E-71	<1
2,4-D	9E-05	0E+00	1E-07	9E-09	2E-08	5E-09	3E-09	9E-05	<1
4,4'-DDT	7E-48	0E+00	1E-50	8E-54	1E-53	1E-48	9E-49	9E-48	<1
Endrin	6E-41	0E+00	8E-44	2E-46	3E-46	3E-42	8E-43	6E-41	<1
Methylene chloride	5E-08	7E-12	5E-09	0E+00	0E+00	9E-14	7E-14	6E-08	<1
Zinc	7E-03	0E+00	1E-05	7E-07	2E-06	3E-03	5E-04	1E-02	99
Total by pathway	7E-03	7E-12	1E-05	7E-07	2E-06	3E-03	5E-04		
% Contribution by pathway	71	<1	<1	<1	<1	24	5		
Scenario Total								1E-02	

Table 6-23

Reasonable Maximum Non-Cancer Risk for Off-Site Residential Adult - Future

Chemical	Ingestion of Groundwater	Inhalation of Showering	Dermal Contact While Showering	Ingestion of Fruits	Ingestion of Vegetables	Ingestion of Meat	Ingestion of Milk	Total	Percent Contribution
gamma-BHC	6E-71	0E+00	2E-72	2E-75	4E-75	9E-74	4E-74	6E-71	<1
2,4-D	1E-04	0E+00	2E-07	1E-08	2E-08	2E-08	1E-08	1E-04	<1
4,4'-DDT	1E-47	0E+00	2E-50	1E-53	2E-53	6E-48	3E-48	2E-47	<1
Endrin	8E-41	0E+00	2E-43	3E-46	5E-46	1E-41	3E-42	9E-41	<1
Methylene chloride	7E-08	2E-11	1E-08	0E+00	0E+00	4E-13	3E-13	8E-08	<1
Zinc	1E-02	0E+00	2E-05	1E-06	3E-06	1E-02	2E-03	2E-02	99
Total by pathway	1E-02	2E-11	2E-05	1E-06	3E-06	1E-02	2E-03		
% Contribution by pathway	44	<1	<1	<1	<1	47	8		
Scenario Total								2E-02	

Table 6-24

Average Non-Cancer Risk for Off-Site Residential Child - Future

Chemical	Ingestion of Groundwater	Inhalation of Showering	Dermal Contact While Showering	Ingestion of Fruits	Ingestion of Vegetables	Ingestion of Meat	Ingestion of Milk	Total	Percent Contribution
gamma-BHC	1E-70	0E+00	4E-72	6E-75	1E-74	5E-74	6E-74	1E-70	<1
2,4-D	3E-04	0E+00	4E-07	4E-08	7E-08	1E-08	1E-08	3E-04	<1
4,4'-DDT	2E-47	0E+00	4E-50	4E-53	7E-53	3E-48	4E-48	3E-47	<1
Endrin	2E-40	0E+00	3E-43	9E-46	2E-45	8E-42	4E-42	2E-40	<1
Methylene chloride	2E-07	2E-11	2E-08	0E+00	0E+00	2E-13	3E-13	2E-07	<1
Zinc	2E-02	0E+00	4E-05	3E-06	1E-05	6E-03	2E-03	3E-02	99
Total by pathway	2E-02	2E-11	4E-05	3E-06	1E-05	6E-03	2E-03		
% Contribution by pathway	75	<1	<1	<1	<1	18	7		
Scenario Total								3E-02	

Table 6-25

Reasonable Maximum Non-Cancer Risk for Off-Site Residential Child - Future

Chemical	Ingestion of Groundwater	Inhalation while Showering	Dermal Contact While Showering	Ingestion of Fruits	Ingestion of Vegetables	Ingestion of Meat	Ingestion of Milk	Total	Percent Contribution
gamma-BHC	1E-70	0E+00	4E-72	9E-75	2E-74	2E-73	2E-73	1E-70	<1
2,4-D	3E-04	0E+00	4E-07	6E-08	1E-07	5E-08	5E-08	3E-04	<1
4,4'-DDT	2E-47	0E+00	4E-50	6E-53	1E-52	1E-47	2E-47	5E-47	<1
Endrin	2E-40	0E+00	3E-43	1E-45	2E-45	3E-41	1E-41	2E-40	<1
Methylene chloride	2E-07	2E-11	2E-08	0E+00	0E+00	9E-13	1E-12	2E-07	<1
Zinc	2E-02	0E+00	4E-05	5E-06	2E-05	3E-02	9E-03	6E-02	99
Total by pathway	2E-02	2E-11	4E-05	5E-06	2E-05	3E-02	9E-03		
% Contribution by pathway	42	<1	<1	<1	<1	43	15		
Scenario Total								6E-02	

6.5.8 Risk Characterization for the Future On-Site Worker Exposure Scenario

This scenario addresses pathways of exposure considered to be complete for an on-site worker at some time in the future. It was assumed that on-site contamination will not increase. However, CAFB is an expanding base and it is possible that land use at the site will change significantly in the future. The future on-site worker scenario assumes exposure to site-related contaminants via three pathways: 1) inhalation of contaminants in the air (volatilized chemicals or fugitive dust generation); 2) incidental ingestion of contaminated soil; and 3) dermal contact with contaminated soil.

Noncarcinogenic and carcinogenic effects were evaluated with both average and reasonable maximum exposure parameters. Noncarcinogenic effects were evaluated assuming both chronic (25 years) and subchronic (7 years) exposures. Carcinogenic effects were evaluated only for the chronic exposure scenario.

6.5.8.1 Carcinogenic Effects

Tables 6-26 and 6-27 show the carcinogenic risk resulting from average and reasonable maximum on-site worker exposure, respectively. For average exposure, the risk value was 1E-5. The risk value associated with reasonable maximum on-site worker exposure was also 2E-5. Dermal contact with aldrin contaminated soil accounts for the majority of the chemical- and pathway-specific risk. These risk values do not exceed the Superfund site remediation goal of 10^{-4} (1 in 10,000) for carcinogens and suggest that carcinogenic effects are not likely to occur as a result of this exposure scenario.

6.5.8.2 Noncarcinogenic Effects

Tables 6-28 and 6-29 illustrate the noncarcinogenic risks resulting from average and reasonable maximum on-site worker chronic exposure scenarios, respectively. Tables 6-30 and 6-31 summarize the noncarcinogenic risks associated with

Table 6-26

Average Cancer Risk for On-Site Worker - Future

Chemical	Inhalation of Ambient Air	Ingestion of Soil	Dermal Contact with Soil	Total	Percent Contribution
Aldrin	1E-15	1E-06	1E-05	1E-05	90
beta-BHC	1E-16	1E-07	1E-06	1E-06	9
gamma-BHC	7E-18	1E-10	1E-09	1E-09	<1
4,4'-DDD	0E+00	8E-11	8E-10	9E-10	<1
4,4'-DDE	0E+00	6E-11	6E-10	7E-10	<1
4,4'-DDT	3E-17	1E-09	1E-08	1E-08	<1
Methylene chloride	9E-14	2E-11	2E-10	2E-10	<1
Total by pathway	9E-14	1E-06	1E-05		
% Contribution by pathway	<1	9	91		
Scenario Total				1E-05	

Table 6-27

Reasonable Maximum Cancer Risk for On-Site Worker - Future

Chemical	Inhalation of Ambient Air	Ingestion of Soil	Dermal Contact with Soil	Total	Percent Contribution
Aldrin	3E-15	5E-06	1E-05	2E-05	90
beta-BHC	2E-16	5E-07	1E-06	2E-06	9
gamma-BHC	1E-17	4E-10	1E-09	1E-09	<1
4,4'-DDD	0E+00	3E-10	8E-10	1E-09	<1
4,4'-DDE	0E+00	2E-10	6E-10	8E-10	<1
4,4'-DDT	7E-17	4E-09	1E-08	1E-08	<1
Methylene chloride	2E-13	7E-11	2E-10	2E-10	<1
Total by pathway	2E-13	6E-06	1E-05		
% Contribution by pathway	<1	29	71		
Scenario Total				2E-05	

Table 6-28

Average Non-Cancer Risk for On-Site Worker - Future (Chronic)

Chemical	Inhalation of Ambient Air	Ingestion of Soil	Dermal Contact with Soil	Total	Percent Contribution
Acetone	0E+00	6E-07	6E-06	7E-06	<1
Aldrin	0E+00	7E-03	7E-02	8E-02	61
gamma-BHC	0E+00	7E-07	7E-06	8E-06	<1
4,4'-DDT	0E+00	2E-05	2E-04	2E-04	<1
2,4-D	0E+00	1E-06	1E-05	1E-05	<1
Diesel	0E+00	6E-04	6E-03	7E-03	5
Endrin	0E+00	7E-07	7E-06	8E-06	<1
Methylene chloride	2E-04	1E-07	1E-06	2E-04	<1
4-Methyl-2-pentanone	1E-07	3E-08	3E-07	4E-07	<1
MCPP	0E+00	4E-03	4E-02	4E-02	33
Toluene	6E-05	2E-08	2E-07	6E-05	<1
2,4,5-T	0E+00	4E-08	4E-07	4E-07	<1
Xylenes	0E+00	7E-10	7E-09	8E-09	<1
Zinc	0E+00	6E-05	6E-05	1E-04	<1
Total by pathway	3E-04	1E-02	1E-01		
% Contribution by pathway	<1	9	91		
Scenario Total				1E-01	

Table 6-29

Reasonable Maximum Non-Cancer Risk for On-Site Worker - Future (Chronic)

Chemical	Inhalation of Ambient Air	Ingestion of Soil	Dermal Contact with Soil	Total	Percent Contribution
Acetone	0E+00	2E-06	6E-06	8E-06	<1
Aldrin	0E+00	3E-02	7E-02	1E-01	61
gamma-BHC	0E+00	3E-06	7E-06	1E-05	<1
4,4'-DDT	0E+00	7E-05	2E-04	2E-04	<1
2,4-D	0E+00	4E-06	1E-05	1E-05	<1
Diesel	0E+00	2E-03	6E-03	8E-03	5
Endrin	0E+00	3E-06	7E-06	1E-05	<1
Methylene chloride	3E-04	4E-07	1E-06	3E-04	<1
4-Methyl-2-pentanone	2E-07	1E-07	3E-07	6E-07	<1
MCPP	0E+00	2E-02	4E-02	6E-02	33
Toluene	1E-04	7E-08	2E-07	1E-04	<1
2,4,5-T	0E+00	2E-07	4E-07	6E-07	<1
Xylenes	0E+00	3E-09	7E-09	1E-08	<1
Zinc	0E+00	3E-04	6E-05	3E-04	<1
Total by pathway	4E-04	5E-02	1E-01		
% Contribution by pathway	<1	29	71		
Scenario Total				1E-01	

Table 6-30

Average Non-Cancer Risk for On-Site Worker - Future (Subchronic)

Chemical	Inhalation of Ambient Air	Total	Percent Contribution
Methylene chloride	5E-03	5E-03	94
4-Methyl-2-pentanone	3E-07	3E-07	<1
Toluene	3E-04	3E-04	6
Total by pathway	5E-03		
% Contribution by pathway	100		
Scenario Total		5E-03	

Table 6-31

Reasonable Maximum Non-Cancer Risk for On-Site Worker - Future (Subchronic)

Chemical	Inhalation of Ambient Air	Total	Percent Contribution
Methylene chloride	9E-03	9E-03	94
4-Methyl-2-pentanone	5E-07	5E-07	<1
Toluene	6E-04	6E-04	6
Total by pathway	1E-02		
% Contribution by pathway	100		
Scenario Total		1E-02	

average and reasonable maximum on-site worker subchronic exposure scenarios. The hazard indices for average chronic and subchronic exposure scenarios were 1E-01 and 5E-03, respectively and are below the Superfund site remediation goal for noncarcinogens. Dermal contact with contaminated soil was responsible for 91% of the average pathway-specific risk associated with chronic exposure. Aldrin accounted for 61% of the average chemical-specific risk. Inhalation of methylene chloride accounted for the majority of the average chemical- and pathway-specific risk associated with subchronic exposure of workers to site-related chemicals. The hazard indices for reasonable maximum chronic and subchronic exposures were 1E-01 and 1E-02, respectively and are below the Superfund site remediation goal for noncarcinogenic substances. Dermal contact with contaminated soil was responsible for 71% of the reasonable maximum pathway-specific risk associated with chronic exposure. Aldrin accounted for 61% of the reasonable maximum chemical-specific risk. Inhalation of methylene chloride accounted for the majority of the reasonable maximum chemical- and pathway-specific risk associated with subchronic exposure of workers to site-related chemicals.

6.5.9 Major Factors Driving Risks

The results of this baseline risk assessment should not be interpreted as a characterization of absolute risk. The hazard index estimates discussed below highlight potential sources of risk at the site and support a no-action decision. Tables 6-32 and 6-33 identify the key chemicals and exposure pathways that drive the carcinogenic and noncarcinogenic risk, respectively. Discussions of the magnitude and nature of risks that potentially exist at Landfill No. 4 and the major uncertainties affecting the risk estimates are presented below.

6.5.9.1 Carcinogenic Effects

None of the estimated cancer risks for the various exposure scenarios exceed the Superfund site remediation goal of cancer risk range of 1E-4 (1 in 10,000) to

Table 6-32

Identification of Key Chemicals and Exposure Pathways that Drive the Carcinogenic Risk Assessment

Scenario	Total Scenario Risk	Chemicals that Contribute Chemical-Specific Risk (% Contribution)		Exposure Pathways that Contribute Pathway-Specific Risk (% Contribution)	
Off-Site Residential (Present)					
- Adult, Average	1E-09	Aldrin	(81)	Ingestion of vegetables	(47)
- Adult, Reasonable Maximum	1E-08	Aldrin	(86)	Ingestion of vegetables	(34)
On-Site Worker (Present)					
- Adult, Average	2E-14	Methylene chloride	(98)	Inhalation of ambient air	(100)
- Adult, Reasonable Maximum	7E-14	Methylene chloride	(98)	Inhalation of ambient air	(100)
Off-Site Residential (Future)					
- Adult, Average	3E-12	Methylene chloride	(100)	Ingestion of groundwater	(91)
- Adult, Reasonable Maximum	1E-11	Methylene chloride	(100)	Ingestion of groundwater	(88)
On-Site Worker (Future)					
- Adult, Average	1E-05	Aldrin	(90)	Dermal contact with soil	(91)
- Adult, Reasonable Maximum	2E-05	Aldrin	(90)	Dermal contact with soil	(71)

Table 6-33

Identification of Key Chemicals and Exposure Pathways that Drive the Non-Carcinogenic Risk Assessment

Scenario	Total Scenario Risk	Chemicals that Contribute Chemical-Specific Risk (% Contribution)		Exposure Pathways that Contribute Pathway-Specific Risk (% Contribution)	
Off-Site Residential (Present)					
- Adult, Average	2E-03	Zinc	(64)	Inhalation of ambient air	(35)
- Adult, Reasonable Maximum	5E-03	Zinc	(83)	Ingestion of meat	(47)
- Child, Average	7E-03	Zinc	(86)	Ingestion of vegetables	(41)
- Child, Reasonable Maximum	1E-02	Zinc	(93)	Ingestion of meat	(36)
On-Site Worker (Present)					
- Adult, Average					
Chronic	5E-05	Methylene chloride	(74)	Inhalation of ambient air	(100)
Subchronic	1E-03	Methylene chloride	(93)	Inhalation of ambient air	(100)
- Adult, Reasonable Maximum					
Chronic	2E-04	Methylene chloride	(75)	Inhalation of ambient air	(100)
Subchronic	4E-03	Methylene chloride	(95)	Inhalation of ambient air	(100)
Off-Site Residential (Future)					
- Adult, Average	1E-02	Zinc	(99)	Ingestion of groundwater	(71)
- Adult, Reasonable Maximum	2E-02	Zinc	(99)	Ingestion of meat	(47)
- Child, Average	3E-02	Zinc	(99)	Ingestion of groundwater	(75)
- Child, Reasonable Maximum	6E-02	Zinc	(99)	Ingestion of meat	(43)

Table 6-33

(Continued)

Scenario	Total Scenario Risk	Chemicals that Contribute Chemical-Specific Risk (% Contribution)		Exposure Pathways that Contribute Pathway-Specific Risk (% Contribution)	
On-Site Worker (Future)					
- Adult, Average					
Chronic	1E-01	Aldrin	(61)	Dermal contact with soil	(91)
Subchronic	5E-03	Methylene chloride	(94)	Inhalation of ambient air	(100)
- Adult, Reasonable Maximum					
Chronic	1E-01	Aldrin	(61)	Dermal contact with soil	(71)
Subchronic	1E-02	Methylene chloride	(94)	Inhalation of ambient air	(100)

1E-6 (1 in 1,000,000). None of the chemicals or exposure pathways contribute a chemical-specific or pathway-specific risk greater than or equal to 1 in 10,000. This indicates that significant increases in the number of cancers are unlikely to occur in potentially exposed populations as a result of contaminants originating from Landfill No. 4. However, the calculated risk values for the future on-site worker scenario (2E-05) are within the Superfund site remediation risk range goal. Ingestion of vegetables and meat contaminated with aldrin drives the present off-site residential carcinogenic risk. Inhalation of volatilized methylene chloride drives the present on-site worker carcinogenic risk, while dermal contact with aldrin contaminated soil drives the future on-site worker carcinogenic risk. Ingestion of methylene chloride contaminated groundwater drives the future off-site residential carcinogenic risk. However, it should be noted that the field investigation at Landfill No. 4 was conducted to determine whether contaminant migration has occurred at the site. Therefore, the risk assessment is based on projected contaminant migration from the site and not on contaminants (or concentrations) found within the landfill itself.

6.5.9.2 Noncarcinogenic Effects

All of the estimated noncarcinogenic hazard indices for the various exposure scenarios were below the Superfund site remediation goal of 1.0 for noncarcinogens. This indicates that adverse noncarcinogenic human health effects are unlikely to occur as a result of exposure to contaminants originating from Landfill No. 4. Again, it should be noted that the risk assessment for Landfill No. 4 was conducted based on projected contaminant migration from the site and not for contaminant concentrations found within the confines of the landfill itself.

6.5.9.3 Nature of Potential Risks at Landfill No. 4

Ingestion of aldrin drives the present off-site residential carcinogenic risk. No studies were located regarding cancer in humans after oral exposure to aldrin or its

toxic metabolite, dieldrin. A few epidemiological studies have examined cancer mortality in workers employed in the manufacture of these pesticides. However, it is not expected that ingestion would contribute significantly as a source of exposure since manufacturing practices limit such exposures. Several rodent bioassays report a positive carcinogenic response (hepatocellular carcinoma and hepatomas) following ingestion of aldrin and/or dieldrin. In addition to producing an increase in the incidence of hepatocellular carcinomas in mice, dieldrin has also been reported to significantly decrease the time to tumor development in rodents. A significant increase in follicular cell adenoma and carcinoma of the thyroid has also been observed in rodents following oral exposure to aldrin. The lowest dose reported to produce a tumorigenic response (Cancer Effect Level, CEL) in laboratory animals are 0.33 and 1.5 mg/kg-day for hepatocellular carcinoma and carcinoma of the thyroid, respectively. It is not known whether similar effects would be observed in humans exposed (orally) to aldrin and/or dieldrin. However, concentrations of aldrin or dieldrin ingested in the form of meats and vegetables resulting from contamination at Landfill No. 4 are likely to be much lower than these concentrations. Therefore, it can be safely assumed that off-site residents will not experience a significant increase in cancer incidence as a result of aldrin contamination at Landfill No. 4.

Methylene chloride drives the present on-site worker and the future off-site residential carcinogenic risks as well as the present and future (subchronic) on-site worker noncarcinogenic risks. The ingestion pathway drives the future off-site residential carcinogenic risks while the inhalation pathway drives other scenario risks. The toxic effects of methylene chloride are varied in nature. High levels of methylene chloride in air (above 500 ppm) can irritate the eyes, nose, and throat. Methylene chloride at this level can also affect the central nervous system, causing effects such as sluggishness, irritability, light headedness, nausea, and headaches. Some effects have been noted at concentrations as low as 300 ppm. However, these symptoms usually disappear soon after discontinuation of exposure. Results from animal studies suggest that frequent or lengthy exposures to methylene chloride may cause changes in the liver and kidney.

However, based on studies of exposed workers, it appears unlikely that methylene chloride will cause serious liver or kidney damage in humans unless exposure is very high. No liver or kidney damage in humans exposed to 30 and 125 ppm (104 to 435 mg/m^3) methylene chloride in the workplace for up to 30 years or 140 to 475 ppm for at least three months has been reported. The maximum hourly estimated methylene chloride concentration (0.05 $\mu g/m^3$) at Landfill No. 4 was far below this concentration. Therefore, it can be safely assumed that on-site workers and off-site residents will not likely experience adverse health effects as a result of exposure to methylene chloride originating from the site.

Chronic oral exposure to methylene chloride via drinking water has resulted in hepatic changes and histopathological alterations, decreased body weight gain, and biochemical changes in the blood of rats. Some laboratory animals exposed to high concentrations of methylene chloride throughout their lifetime develop cancer. Methylene chloride has not been shown to cause cancer in humans exposed at occupational levels. However, based on animal studies, it should be treated as a potential human carcinogen.

Ingestion of zinc contaminated foods drives both the present and future off-site residential noncarcinogenic risks. Zinc is an essential dietary nutrient but health can be adversely affected if excessive amounts of zinc are consumed. Zinc toxicosis may manifest as stomach or digestive problems. Zinc can also interfere with immune function and the body's ability to use other essential nutrients such as iron and copper. The levels of zinc that produce health effects are usually much higher than the Recommended Dietary Allowances (RDA) of 15 mg/day for males and 12 mg/day for women (ATSDR *Toxicological Profile for Zinc*, 1989). However, the concentrations of zinc ingested in the form of foods resulting from contamination at Landfill No. 4 are likely to be much lower than the RDA for zinc and, therefore, are not likely to result in adverse human health effects.

Dermal contact with aldrin contaminated soil drives the future (chronic) on-site worker noncarcinogenic and carcinogenic risks. No key studies of dermal exposure of humans to aldrin were located in the available literature. However, dermal LD_{50}s of 98 mg/kg and 1,250 mg/kg were reported for rats and rabbits, respectively. Available epidemiological studies on aldrin and dieldrin are considered to be inadequate to establish a clear assessment of the relationship between these compounds and the risk of cancer in humans. Furthermore, no data describing the carcinogenic effects in animals following exclusively dermal exposure were found in the available literature. However, as discussed previously, several rodent bioassays report a positive carcinogenic response following ingestion of aldrin or dieldrin (ATSDR *Toxicological Profile for Aldrin/Dieldrin*, 1991).

6.5.10 Uncertainties Associated with Risk Characterization

Risk characterization results are not actual representation of risk but rather conditional estimates of risk which should be interpreted in light of the considerable number of assumptions required to quantify exposure, intake and dose-response. Uncertainties associated with identification of chemicals of potential concern, exposure assessment, and toxicity assessment all contribute to the level of confidence that can be placed on the risk characterization results. The uncertainties associated with these steps are discussed in previous sections of the report and are summarized in this section to facilitate interpretation of the risk characterization.

6.5.10.1 Identification of Contaminants of Potential Concern

Uncertainties associated with identification of chemicals of potential concern are discussed in detail in Section 6.2.9 (Data Limitations/Data Gaps) and include:

- Limitations of the analytical methods in detection of chemicals in the sampled soil below the instrument detection limit;
- Use of estimated values below the detection limit and values close to detection limits;
- Use of potentially false negatives; and
- The generally small number of samples and locations used to evaluate background concentrations of inorganic chemicals.

6.5.10.2 Exposure Assessment

Sources of uncertainty associated with the exposure assessment are discussed in Section 6.3.8. The primary sources of uncertainty that can limit the accuracy of the assessment are:

- Analytical data used to estimate release rates to the environment;
- The ability of fate and transport models to realistically simulate the behavior of chemicals in the environment; and
- The accuracy of exposure assumptions in representing the degree and magnitude of exposure.

6.5.10.3 Toxicity Assessment

Sources of uncertainty associated with the toxicity assessment are discussed in detail in Section 6.4.5. The major source of uncertainty is attributed to the lack of verified toxicity values for several chemicals and includes:

- The lack of inhalation RfCs for acetone, 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, aldrin, dichloroprop, MCPP, β-BHC, and δ-BHC, γ-BHC, 2,4,5-T, endrin, heptachlor epoxide, 2-hexanone, xylenes, and zinc;

- Low to medium confidence ratings for USEPA-verified toxicity values;
- The use of oral RfDs and slope factors for dermal exposure;
- The lack of verified inhalation slope factors for many of the contaminants evaluated; and
- Inability to evaluate the possible synergistic or antagonistic effects of the mixture of chemicals detected at the site.

The most significant uncertainties associated with risk characterization are the limitations of analytical methods and fate and transport models in addition to the lack of verifiable toxicity values. The majority of the tasks performed during risk assessment utilize conservative assumptions which tend to result in overestimation of risk (use of estimated values below instrument RLs, exposure assumptions which tend to be conservative, etc.). However, the limitations associated with analytical methods and the lack of EPA-verified toxicity values for some chemicals could result in underestimation of risks. Alternately, many of the uncertainties associated with risk assessment have the potential to either over or underestimate the risk associated with exposure.

6.6 Environmental Evaluation

This section presents a qualitative evaluation of potential adverse impacts of contamination from Landfill No. 4 on critical habitats and endangered species in the area. A description of the site and the nature and extent of the contaminants of concern were presented earlier in this report. Information for this qualitative evaluation was adapted from a ecological risk assessment of CAFB prepared by Woodward-Clyde and Consultants (Woodward-Clyde, 1992).

6.6.1 Local Ecology

CAFB and surrounding areas are part of the High Plains grasslands. Much of the natural grassland ecology has been disrupted by agricultural practices. Small trees and large shrubs are located around riparian areas and playa lakes. The areas surrounding CAFB are used for crops and livestock. Common agriculture crops grown in the area include wheat, sorghum, and alfalfa.

Landfill No. 4 is vegetated with a variety of grasses. The area is not maintained in any manner and the grass is tall. Agricultural land lies east and south of the landfill. A playa lake is located approximately 1,000 feet to the south and the base ordinance area is situated 800 feet west of Landfill No. 4.

6.6.2 Threatened and Endangered Species

Table 6-34 lists threatened and endangered species and species of high federal concern historically inhabiting areas within CAFB and surrounding Curry County. The Baird's sparrow and the ferruginous hawk are known to occur in this area. However, both birds are infrequent visitors in the area. The Baird's sparrow may be found in the area from early August and departs by November. The ferruginous hawk may occasionally feed on CAFB, but does not reside there because of lack of suitable nesting habitat.

6.6.3 Other Species

Small amphibians and reptiles are known to occupy areas in and around CAFB. The pocket gopher and the deer mouse are two common small mammals found at CAFB. Both animals inhabit areas covered with small shrubs and grasses similar to those found at Landfill No. 4. Pheasant, quail, and migratory waterfowl feed on waste grains in the fields near the landfill. Waterfowl, mostly dabbler ducks, utilize the playa

Table 6-34

Federal- and State-Protected Animals Potentially Occurring in the Vicinity of CAFB (Curry County), New Mexico

Common Name	Scientific Name	Federal Status	State Status
Birds			
Baird's sparrow	*Ammodramus bairdii*		Endangered (group 2)
Bald eagle	*Haliaeetus leucocephalus*	Endangered	Endangered (group 2)
Peregrine falcon	*Falco perigrinus*	Endangered	Endangered (group 1)
Long-billed curlew	*Numenius americnus*		Endangered (group 2)
Western snowy plover	*Charadrius aleandrus nivosis*		Endangered (group 2)
Mammals			
Black-footed ferret	*Mustela nigripes*	Endangered	Possibly Extinct
Swift fox	*Vulpes velox*		Endangered (group 2)
Reptiles			
Texas horned lizard	*Phrynosoma cornutum*		Endangered (group 2)

Endangered (group 1): Species whose prospects of survival or recruitment within the state are in jeopardy.
Endangered (group 2): Species whose prospects of survival or recruitment within the state are likely to become jeopardized in the foreseeable future.

Possibly Extinct: Potentially no longer in existence in the state.
Source: Woodward-Clyde, 1992.

lake as a resting and feeding area during migration. The primary predators in the area are several species of raptors. Mated pairs of Mississippi kite, recently removed from New Mexico's protected species list, have been spotted on the base defending territory near the golf course. Occasionally, a big game animal such as the longhorn antelope has been spotted in the vicinity.

6.6.4 Selection of Indicator Species

Animals that inhabit Landfill No. 4 and utilize nearby areas such as the Playa Lake are potentially exposed to chemicals originating from Landfill No. 4. It is not possible to assess effects on all species potentially impacted by exposure to chemicals of concern at Landfill No. 4. Ducks have been chosen as the indicator species to represent potential impacts of chemicals at the landfill on wildlife in the area. Dabbler ducks, which include gadwalls, mallards, pintails, shovelers and widgeons, make up the majority of wildlife found at CAFB. The ducks are not usually found at Landfill No. 4; however, they spend a majority of their time resting at the nearby playa lake and feeding in the adjacent grain fields.

6.6.5 Qualitative Risk Assessment for Potential Exposure to Wildlife

Potential exposure of ducks to contaminants originating at Landfill No. 4 is via surface water flowing downgradient to the nearby playa lake. Mean annual precipitation for the area is 15 inches with a low monthly average of 0.4 inches during the winter months. Contaminants of concern were detected in the surface soil. Therefore, movement of chemicals towards the playa lake via runoff is possible. However, due to low annual precipitation, few chemicals are likely to be carried from the landfill to the lake.

Ducks typically begin migrating through the Clovis area by late October and reach their highest numbers by mid-November. The majority of the ducks have

continued southward migration by the time the lakes are frozen which is usually in the beginning of January. During mild winters, ducks can remain in the vicinity until mid-March. The average amount of time ducks spend in the area is between 1.5 to 3 months.

Considering the low precipitation and the amount of time the ducks are found in the area, the level of exposure is likely to be low.

APPENDIX E

LF-25 (SWMU 97) SPECIFIC REPORT DATA

AR # 598
File: 17A-21

December 1, 1993

STATE OF NEW MEXICO
ENVIRONMENT DEPARTMENT

General William M. Guth, Commander
27 FW/CC
100 S. D.L. Ingram Blvd., Suite 100
Cannon Air Force Base, NM 88103-5214

RE: Draft Remedial Investigation Report, Landfill 25

Dear General Guth:

The New Mexico Environment (NMED) has reviewed the Draft Remedial Investigation (RI) Report for Landfill No. 25, dated August 1993. Our comments follow. AR #400, 401)

As with other landfill investigations at Cannon Air Force Base, NMED approves the RI Report for Landfill 25 with the explicit understanding that we reserve the right to require additional work at this landfill if the investigation at Landfill 5 reveals the need for remedial action, if contaminants are observed in ground water monitoring at Landfill 5, or if they are observed at offsite wells or future monitor wells potentially affected by Landfill 25.

Thank you for the opportunity to comment on the RI Report. If you have any questions do not hesitate to call me at 827-2754.

Sincerely,

David Morgan
Environmental Specialist, DSMOA Program
Ground Water Protection and Remediation Bureau

xc: Kathleen M. Sisneros, Director, NMED WWMD
Benito J. Garcia, Chief, NMED HRMB
Bill Hurlbut, EPA Region 6
Dr. Janice Stowell, CAFB CES/CEV

Bruce King
Governor

Judith M. Espinosa
Secretary

Ron Curry
Deputy Secretary

Harold Runnels Building
1190 St. Francis Drive
P.O. Box 26110
Santa Fe, NM 87502
[redacted]

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Doc 110

File: MC
M.C. 110
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State of New Mexico
ENVIRONMENT DEPARTMENT
Harold Runnels Building
1190 St. Francis Drive, P.O. Box 26110
Santa Fe, New Mexico 87502

BRUCE KING
GOVERNOR

JUDITH M. ESPI
SECRETAR

RON CURR
DEPUTY SECRE

September 6, 1991

Mr. Jim Richards
Chief, Environmental Management
27CSG/DEV
Cannon AFB, NM 88103

Dear Mr. Richards:

Thank you for the opportunity extended to John Pfeil and myself to tour Cannon AFB with members of your staff on September 4th. We were disappointed that we were unable to meet with you personally but found your staff to be very helpful; Lt. Demers and Mr. Hale conducted a tour of IRP/HSWA sites and were particularly helpful.

We were given the NMED copy of the RCRA Facility Investigation work plan dated August 1991. We are reviewing it in consultatio with the Hazardous and Radioactive Materials Bureau, and will have some comments on it as provided for in the Memorandum of Agreement between the Defense Department and the State of New Mexico for IRP oversight.

We were informed that a meeting is scheduled on September 12th in Denver to review and finalize the work plan. We will make our comments available to you in advance of the meeting, and hope to confer with you and EPA by phone early next week to discuss the most appropriate way to incorporate our input.

We look forward to working with you in the future. If you have any questions or if we can ever be of any assistance, please call me at 827-2754 or John Pfeil at 827-2776.

Sincerely,

David Morgan
Environmental Specialist
Ground Water/Toxic Sites Bureau

791 1 File 17C-9-C
SD24

State of New Mexico
ENVIRONMENT DEPARTMENT
Hazardous Waste Bureau
2044 A Galisteo St., P.O. Box 26110
Santa Fe, New Mexico 87502-6110
Telephone (505) 827-1557
Fax (505) 827-1544

GARY E. JOHNSON
GOVERNOR

PETER MAGGIORE
SECRETARY

PAUL R. RITZMA
DEUPTY SECRETARY

AR 791

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

October 11, 2000

Mr. Daniel A. Barnett
Chief
Cannon AFB
Environmental Flight
506 N. DL Ingram Blvd.
Cannon AFB NM, 88103-5003

RE: NMED CORRECTIVE ACTION GOAL
Cannon AFB NM7572124454

Dear Mr. Daniel Barnett:

The New Mexico Environment Department and the U.S. Environmental Protection Agency (USEPA) have listed your facility in a baseline of facilities that have been targeted to definitively establish the existence of, and mitigate where necessary, any unacceptable human exposure to contamination or groundwater contamination migration. In order to achieve this goal, NMED proposes to use the defining criteria of two RCRA Corrective Action Environmental Indicator (EI) Codes (CA725-Human Exposures Controlled; and CA750-Groundwater Releases Controlled). NMED and the baseline New Mexico facilities should now begin to develop an approach to achieving these EI goals.

The USEPA originally developed the EI program to measure corrective action program performance and to provide a database so that the public can track progress in corrective action at facilities. Though the EI program is only one milestone in the overall corrective action process in RCRA, it serves as a method for facilities to work with State to focus resources on those sites that may require a higher level of effort to meet these important benchmarks. The program also represents an opportunity for facilities to highlight their corrective action accomplishments to both the government and the community.

As a first step toward developing an approach to achieving the indicator goals, NMED is requesting that each baseline facility complete the enclosed indicator forms. This information will provide a basis for working with NMED to determine if the facility can meet or already has met the criteria for the two indicators. The determinations of CA725 (Human Exposures

Controlled) and CA750 (Groundwater Releases Controlled) apply facility-wide, but require consideration of each individual solid waste management unit (SWMU) or area of concern (AOC) within a facility. The forms and an accompanying February 5, 1999 guidance memo from the USEPA are enclosed with this letter; these checklists can also be downloaded from EPA's website at (*http://www.epa.gov/earthlr6/6pd/ rcra_c/pd-o/rcrabase.htm*).

Achievement of a Human Exposures Controlled (CA725) determination means that no complete pathways resulting in exposures above acceptable risk-based levels exist. Acceptable risk based levels (levels of concern) are determined by the regulatory authority based on applicable state and federal standards and risk-based guidelines. This indicator is based on current conditions and uses at the site, so acceptable risk-based levels can differ from levels used for closure or No Further Action (NFA) determinations. In addition, institutional controls can be considered to limit pathways and exposures for this determination even though those controls would not be considered adequate protection for sites requesting an NFA. This indicator is designed to measure the protection of human health at RCRA Corrective Action sites.

A Groundwater Releases Controlled (CA750) determination indicates that groundwater is not migrating at levels that exceed the levels of concern. Levels of concern for this determination are also set by the regulatory authority based on applicable state and federal standards and risk based guidelines. This indicator is based on the movement of the groundwater, not whether people are currently or potentially exposed. This indicator is designed to measure the protection of groundwater as a resource.

It is essential that the documentation associated with each SWMU or AOC (such as RFIs, sampling investigation summaries, etc.) and used by Cannon AFB to make the determination be referenced on the forms so that the State can review these materials as part of their concurrence on the determination made by the facility. If Cannon AFB has achieved control of human exposure and groundwater releases, please provide the date of regulatory approvals, the date stabilization measures and/or corrective actions were implemented, and the date human exposure and groundwater releases were controlled for each waste management unit and/or AOC. If your facility must accomplish interim actions prior to achieving these goals, then provide a projected schedule that will result in a facility-wide CA725 and CA750 determination by the year 2005.

Because the Environmental Indicators program measures progress on a facility-wide basis, meeting the goals may require substantial effort to review individual sites and determine if interim measures need to be taken. It is imperative that both the New Mexico Environment Department and the facilities begin now to examine sites so that we can achieve our Environmental Indicator goals.

Please provide the Department with a list of the above mentioned documentation references within thirty (30) days from the date of this letter so that the Department might initiate its own evaluation. Please also return the completed enclosures within ninety (90) days from the date of

this letter. Upon receipt of this information by the NMED, Glenn von Goten, Project Leader for Cannon AFB, will evaluate the information in conjunction with EPA directives and other guidance documents. She/he may contact you to discuss any discrepancies and the information and schedules needed for achieving the cleanup goals. A copy of your response will be forwarded to USEPA to facilitate an update of information contained on USEPA's website about your facility. Should your facility need additional time to complete these activities, please provide a schedule of completion through your facility project leader at HWB.

HWB is organizing a discussion/training regarding the EI forms on November 14, 2000 in Albuquerque. Please inform us within a week of receiving this letter if your organization is interested in attending. Should you have any questions concerning this letter please contact Glenn von Goten at (505) 827-1558 ext 1024 or Kirby Olson at (505) 827-1561 ext. 1034. Please submit the requested information to Dr. Olson at the address above. Thank you for your cooperation in this matter.

Sincerely,

James P. Bearzi
Chief
Hazardous Waste Bureau

Enclosure: USEPA CA725 and CA750 forms
2/5/99 guidance memo

cc: J. Kieling, NMED HWB
Glenn von Goten, NMED HWB
P. Allen, NMED HWB
D. Neleigh, USEPA Region 6 (6PD-N)
David Vogler, USEPA Region 6
K. Olson, HWB
S. Pullen, HWB
Read file

JPB:jek

800 1

AR 800

DEPARTMENT OF THE AIR FORCE
27TH CIVIL ENGINEER SQUADRON (ACC)
CANNON AIR FORCE BASE NEW MEXICO

JAN 22 2001

Robert S. Pyeatt
Deputy Base Civil Engineer
506 N DL Ingram Blvd
Cannon AFB NM 88103-5003

Mr. James Bearzi, Chief
Hazardous Waste Bureau
New Mexico Environment Department
2044 Galisteo Street
PO Box 26110
Santa Fe NM 87502

Dear Mr. Bearzi

Enclosed for your review and record is the Semi-Annual Monitoring Report for Aug 2000 (AR 794) sampling at Monitoring Well R, Landfill 25 (SWMU 97) at Cannon Air Force Base. Iron, chromium and nickel exceeded the maximum contaminant levels for drinking water. This has been an ongoing problem in this well since installation of a stainless steel screen. A plastic screen will be installed in a new well this fiscal year in an attempt to alleviate this problem.

If you have any questions, please contact Mr. Sanford Hutsell at (505)784-6378 or Mr. John Pike at (505)784-1092.

Sincerely

ROBERT S. PYEATT, GS-13

Attachment:
Semi-Annual Monitoring Report (AR 794)

cc:
NMED wo Atch (G. von Gonten)
NMED GW Bureau (J. Jacobs)
EPA Region VI wo Atch (D. Neleigh)
EPA Region VI (B. Sturdivant)

AR 808

Parallax INC

U.S. Army Corps of Engineers
Omaha District
ATTN: CENWO-PM-HA (Tom Zink)
215 North 17th Street
Omaha, NE 68102-4978

ATL-01-147

June 26, 2001

Reference: Contract No. DACA45-99-D-0015
Delivery Order No. 002

Subject: Final Annual Monitoring Report Calendar Year 2000 Long-Term Monitoring Landfill No. 3 (MW-O), Landfill No. 4 (MW-N), and Landfill No. 25 (MW-R)
Cannon Air Force Base, New Mexico

(AR 807)

Dear Mr. Zink,

Enclosed are four copies of the subject final report that incorporates the agreed responses to USACE comments on the draft report. A MS DOS formatted diskette with the text of this report in MS Word is included. This report constitutes the final technical deliverable on this delivery order. The original data packages and logbooks will be transmitted under separate cover, and the June Monthly Report will be the final submittal.

Parallax appreciates the opportunity to have supported the USACE Omaha District and Cannon Air Force Base on this project. Please contact me at 770-955-2008 if you have any questions or require further information.

Sincerely,
Parallax, Inc.

William D. Keefer

David Keefer
Program Manager

cc: John Pike - 27 CES/CEV, 8 copies
USACE Chemical QA Lab, 1 copy
File, 1 copy
Russ Shannon - HQ ACC/CEVR-W, 2 copies
Debbie Molinary – Parallax, 1 copy

808 2

COMMENT RESPONSE SUMMARY
Draft Annual Monitoring Report (March, 2001)
Long-Term Monitoring for Landfills No. 3, 4 and 25 (MW-O, N and R)
Cannon Air Force Base

Reviewer/ Comment Number	Page Section Paragraph	Comment	Response
COMMENTS BY Kim Mulhern – USACE Omaha District (17April01)			
1	Table of Contents	A List of Acronyms needs to follow the Lists of Tables and Lists of Figures. Please generate and include.	A List of Acronyms will be added to the final report
2	Exec Sum/ES-1	The sampling procedures used for this project do not meet the requirements of the USACE General Geology Scope of Services. This guidance requires that sampling occur immediately upon completion of purging the well. It is unacceptable to delay the sampling event unless there is insufficient recharge at the well to collect the sample at that point in time. This was not the case However, the work plans for this project were not reviewed and approved by a USACE geologist and the work was performed in accordance with the work plans. In the future, groundwater sampling must be completed in accordance with the USACE requirements.	Any future work plans that require groundwater sampling will be developed in accordance with the USACE General Geology Scope of Services, and sampling will be performed in accordance with the approved work plan The rationale for the less than 24 hour delay between purging and sampling was as follows· 1) analysis for common anions has a very short holding time; 2) Clovis, NM is relatively remote and the latest overnight delivery pick-up is 3:30 p.m ; and 3) it was expected that the initial purging would remove any stagnant or stratified groundwater volume, and that the 4 additional gallons removed from each well immediately prior to sampling would clear the pump and sample tubing.
3	Exec.Sum/ES-2	Since this is an ANNUAL summary report, the results from the August 2000 sampling event at MW-R (LF-25) need to be included in this report as well as in Appendix A 3 That is the purpose of an annual report Please revise the report to include these results.	The results of the semi-annual monitoring have been included as part of the historical range of results for MW-R in the applicable tables. The final Semi-Annual Monitoring Report August 2000 Sampling Event Long-Term Monitoring, Landfill No 25 (MW-R) will be appended References to that report will be updated to refer to the appendix.
4	Table 2/ES-13	Since you have already generated Table 1 which includes all results, not just hits, please revise this table to just include those concentrations not U-qualified (i.e , a hits table) It is unnecessary to have an Other Constituents category if the results were all ND.	This table will be changed as indicated The purpose of including the ND values in the summary table was to be consistent with reporting from previous years, and to ease review of the analytical results..
5	Appendix A	It is unclear whether or not this appendix complies with the "General Reporting Requirements for Routine Groundwater Monitoring at RCRA Sites" Position Paper prepared by the New Mexico Environment Department, Hazardous and Radioactive Materials Bureau, Dated 16 March 2000. It would appear that each appendix should have a Title Page, Executive Summary, and Table of Contents.	The referenced Position Paper and previous annual monitoring reports for these sites were used as the basis for development of this report. Specifically, the use of a single Title Page, Executive Summary and Table of Contents has been established as the accepted format for reporting from these adjacent sites at CAFB

808 3

COMMENT RESPONSE SUMMARY
Draft Annual Monitoring Report (March, 2001)
Long-Term Monitoring for Landfills No. 3, 4 and 25 (MW-O, N and R)
Cannon Air Force Base

Reviewer/ Comment Number	Page Section Paragraph	Comment	Response
		Please see comment #3 above regarding annual summary report for MW-R at LF-25 and see that the August 2000 results are incorporated into Appendix A.3.	See response to comment #3. The semi-annual monitoring results are incorporated, and the previous report will be appended.
		The following deficiencies have been noted for all three appendices (A.1, A.2 and A.3).	
		• Groundwater Monitoring Results Sections – The measured depth to groundwater and the screened interval of the well need to be included in the text for this section This information needs to be compared to previously measured depths. Please indicate the general trend for the water level in this well and, based on that trend, calculate the approximate remaining useful life for this monitoring well (i.e , when will it no longer be possible to collect groundwater samples from this well) This section has a table (A 1-4-1) of Groundwater Quality Field Parameters as required by the guidance, however, it should only include the last measured value before water sampling (even if it was measured the day before) The table should also include these field parameters measured during previous sampling events to indicate any trend in this data.	The text will be revised to include the measured depth to water as reported in the appended field notes Construction details were not available for these wells. Also, the wells do not have measuring points marked on the casings (the North side of the casing was used by default), making comparison to historic water levels potentially inaccurate. A general downward trend in water table elevation can be inferred from historic data, and this will be included in the text of the report Reporting of all field water quality measurements was included to demonstrate stabilization of these parameters, however, these will be removed as indicated. At this time, the only historic field water quality data available is from last year, limiting the usefulness of trend analysis
		• Groundwater Chemical Analytical Data Sections – This section requires the inclusion of the analytical methods (as was done in the Scope Section). Please include that information in this section as required by the guidance. Please combine Tables A 1-5-1 and A.1-5-2 (in other words, please delete the Trip Blank Column and replace with the Range of Historical Results Column from the second table). If you feel the need to mention the ND in the trip blank, include this as an asterisk or alphabet letter after the ND in the MW-O column for VOCs and footnote at the bottom of the table. This way, all of the information is presented in one easy-to-read table.	Text changes will be made as indicated
		• Summary. Please include the concentration for current	Specific chloride concentration values will be added to the

808 4'

COMMENT RESPONSE SUMMARY
Draft Annual Monitoring Report (March, 2001)
Long-Term Monitoring for Landfills No. 3, 4 and 25 (MW-O, N and R)
Cannon Air Force Base

Reviewer/ Comment Number	Page Section Paragraph	Comment	Response
		round of sampling for Chloride, as well as the standard being used for comparison Please change "ppm" to "mg/L" which is the correct unit of measure • Figures I don't have a complete list of the figures required, however, it is clear that a couple of the figures are missing. A topographic map is required but not included. A figure showing off-site well locations is also required but the figure used does not clearly indicate locations for off-site wells. Please see that these figures are included Please check the guidance document to ensure that all required figures are included in each appendix.	text, and the unit of measure will be changed from the general "ppm" to the specific "mg/L The figures included are based on available information and are consistent with previous reporting for these sites at CAFB. A topographic map of the area will be included based on publicly available USGS coverage. However, an off-site well survey was not part of the scope of services for this delivery order In consultation with the COTR, we will determine whether this information is available from other sources at CAFB that can be included in this report
3 (sic 6)	Calibration	It appears that the field equipment was not recalibrated on 09 January 2001 Is this correct? If so, was the equipment used at all on 09 January 2001?	That is correct. The monitoring equipment was not used on 09 January 2001. Based on the air monitoring results from 08 January 2001, the historical concentrations of VOCs encountered in these wells, the sampling method (dedicated equipment requiring minimal handling), and the steady moderate breeze at the site, the SHSO determined that continued air monitoring was not necessary. Since well purging was complete, additional measurement of field water quality parameters was not required.
4 (sic 7)	Well Volume Calculations	The Well Purge Record should include an area of all measurements and the calculation of one and three well volumes. The formula should include the following Design/Measured Depth of Bottom of Well (in ft TOC) = 306 40' Measured Depth to Water (in ft TOC) = 292 96' Height (h) of Water Column in Well (in feet) = 13 44' Volume = $\pi r^2 h$ = (3.14)(0.167')^2(13 44')(7 48 gal/ft^3 = 8 8 gal X 3 well volumes = 26 4 gal r for 4-inch well = 0 167' r for 6-inch well = 0 25' Accurate well volumes need to be calculated on the form to ensure that the correct values are used during purge. Purge	The Well Purge Record form will be revised to include a calculation area for any future groundwater sampling for USACE. This is the formula used to calculate the purge volume as documented on the DQCR included with the field forms in Appendix B. All calculations were double-checked in the field It is agreed that low-flow sampling (and purging) is the

808 5

COMMENT RESPONSE SUMMARY
Draft Annual Monitoring Report (March, 2001)
Long-Term Monitoring for Landfills No. 3, 4 and 25 (MW-O, N and R)
Cannon Air Force Base

Reviewer/ Comment Number	Page Section Paragraph	Comment	Response
		rate should be adjusted as low as possible when VOC sampling will be occurring Ideal purge rate is 0 1 L/min with minimal drawdown. Purge rates for these wells are too high.	preferable methodology for groundwater sampling. However, the dedicated Bennett pumps installed in these wells seem to be limited in the minimum pump rate that will sustain flow at the surface, and that rate is well above 0 1 L/min. Since these wells have dedicated purge tanks and the purge water, reportedly, has always been suitable for unregulated discharge, the impetus to change to a low flow system may be limited
COMMENTS BY Paula Peters – USACE Omaha District (18April01)			
1	Pg. ES-3 – top of page	Phenols were analyzed by Stewart Environmental, not Paragon Analytics. This needs to be added to the text.	The text will be amended as indicated
2	Pg. ES-5, Table 1	a The dates that the samples were taken needs to be added. b Include the heading "Table 1, Summary of Analytical Results..." to each of the pages of the table. c. Number each of the pages of Table 1, i e. page _ of _. d. mg/l and ug/l need to be added to the footnotes. e. Change the footnote "NA – Not Analyzed" to "N/A – Not Analyzed"	This will be added to the table heading. This will be repeated on each page The table is embedded in the text, but a page count will be added to the callout Units will be added. Text will be revised as indicated.
2 (sic. 3)	Appendix C	Parallax should complete a separate "Condition of Sample Upon Receipt Form" for each cooler The form shown in this appendix includes 5 coolers, which is not acceptable	Paragon Analytics, a USACE approved laboratory, performed inspection of the condition of the samples upon receipt, and documented this on a single form in accordance with their protocols. Parallax will notify Paragon Analytics of this USACE requirement for future sample analysis. No additional sample receipt forms are available for this project
3 (sic 4)	Appendix D	a. Phenols were analyzed by Stewart Environmental and should be indicated as such in Section 1.0 on page D-1 b. pg D-2, top paragraph, Quality Assurance Summary – "Comparison of the environmental sample and associated duplicate from MW-R indicates that a very high replicate precision was achieved by the sampling method employed, and the relative percent difference for these samples is well within established limits" I do not agree with this statement since chromium was detected in MW-R at 0 28 mg/l and in the duplicate of MW-R at 0.083 mg/l. This is a huge discrepancy with a very large	The text will be amended as indicated. The discussion of the comparison of the environmental and duplicate samples presents an aggregate comparison across all methods and analytes. In this context, the statements are considered representative of the data set However, text will be added to clarify this point and to highlight specific analytes with an RPD exceeding ± 50% (i.e., chromium).

808 6

COMMENT RESPONSE SUMMARY
Draft Annual Monitoring Report (March, 2001)
Long-Term Monitoring for Landfills No. 3, 4 and 25 (MW-O, N and R)
Cannon Air Force Base

Reviewer/ Comment Number	Page Section Paragraph	Comment	Response
		relative percent difference.	

State of New Mexico
ENVIRONMENT DEPARTMENT
Hazardous Waste Bureau
2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6303
Telephone (505) 428-2500
Fax (505) 428-2567
www.nmenv.state.nm.us

BILL RICHARDSON
GOVERNOR

RON CURRY
SECRETARY

DERRITH WATCHMAN-MOORE
DEPUTY SECRETARY

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

January 12, 2004

Colonel Robert Yates
Commander, 27th Fighter Wing
100 D.L. Ingram Blvd., Suite 100
Cannon Air Force Base, New Mexico 88103-5214

SUBJECT: NO FURTHER ACTION PETITION
CANNON AIR FORCE BASE, NEW MEXICO
EPA ID No.: NMD000804294

Dear Colonel Yates:

The New Mexico Environment Department (NMED) has reviewed Cannon AFB's Class 3 Modification Request - No Further Action Proposals (NFA) submitted on September 5, 2000, as required pursuant to 20.4.2 NMAC. Any document submitted by a facility for review and approval must first pass an initial review to determine if all the required parts are contained in the document and that NMED are available to conduct the review in a timely fashion. Because of the number of solid waste management units (SWMUs) and areas of concern (AOCs) involved and limited resources, NMED has been unable to complete its initial review until recently.

As discussed with your staff, NMED recommends that Cannon resubmit its Petition for NFA Review. Many of the SWMUs and AOCs do not qualify for NFA approval either because these sites have never been adequately investigated, are sites that Cannon has submitted corrective measures studies that have not been reviewed, or are sites at which corrective measures have not yet been completed (see Table 1, Attachment 1). Cannon must conduct additional investigation and/or complete its final remedies before these sites can qualify for a NFA determination.

However, NMED has determined that approximately 35 SWMUs and AOCs appear to qualify for NFA approval (see Table 2, Attachment 1). Cannon has investigated or remediated these sites to NMED's satisfaction and NMED has previously recommended that Cannon submit a NFA petition (see Table 3, Attachment 1). NMED recommends that Cannon submit a new NFA petition for these 35 specific sites only in order to expedite the NFA review and approval process.

There are also several SWMUs and AOCs that Cannon may be able to justify including in its NFA petition with some additional information (see Table 3, Attachment 1), such as the inclusion of an approval letter from another bureau (*e.g.*, USTB).

If you have any questions concerning this letter, please call me at 505-428-2551.

Sincerely,

Glenn von Gonten
CAFB Project Leader
Permits Management Program

GVG:gvg

Attachment

cc: S.Y. Martin, NMED HWB
J. Kieling, NMED HWB
D. Cobrain, NMED HWB
L. King, EPA Region 6 (6PD-N)

File: Reading, CAFB 00-003, CAFB 2004

ATTACHMENT 1

TABLE 1 SWMUS AND AOCS THAT DO NOT QUALIFY FOR NFA DETERMINATION		
SWMU/AOC	**DESCRIPTION**	**COMMENTS**
AOC A	MOGAS Spill Site	No. Product spills that are not remediated are SWMUs/AOCs. Nb., Was designated as a SWMU/AOC in permit.
AOC B	JP-4 Fuel Spill	No. Product spills that are not remediated are SWMUs/AOCs. NB., Was designated as a SWMU/AOC in permit.
AOC C	Blown Capacitor Site	No. Product spills that are not remediated are SWMUs/AOCs. NB., Was designated as a SWMU/AOC in permit.
SWMU 2	Recovered Tank No. 108	No. Never Investigated. Need additional RFI phase.
SWMU 4	Recovered Tank No. 121	No. Never Investigated. Need additional RFI phase.
SWMU 31	AGE Maintenance Shop Pad	No. CMS is under review
SWMU 48a	Underground Waste Oil Tank	No. CMS is under review
SWMU 49	Inactive POL Storage Tank No. 4028a	No. Never Investigated. Need additional RFI phase.
SWMU 50	Inactive POL Storage Tank No. 4028b	No. Never Investigated. Need additional RFI phase.
SWMU 75	Sanitary Sewage Lift Station Overflow Pit	No. Never investigated. Cannot NFA accidental spill site that was neither investigated nor cleaned up.
SWMU 77	Civil Engineering Container Storage Area	No. CMS is under review
SWMU 86	Engine Test Cell	No. CMS is under review
SWMU 87	Former Overflow Pit	No. CMS is under review
SWMU 88	Former Leaching Field	No. CMS is under review
SWMU 89	Evaporation Pond	No. CMS is under review
SWMU 90	OWS No. 5114	No. CMS is under review
SWMU 91	Recovered Fuel Tank No. 5114	No. Bulk product AST requires investigation.

TABLE 1 SWMUS AND AOCS THAT DO NOT QUALIFY FOR NFA DETERMINATION		
SWMU/AOC	**DESCRIPTION**	**COMMENTS**
SWMU 97	Concrete Rubble Pile (Landfill 25)	No. CMS is under review.
SWMU 101	Wastewater Treatment System - Lagoons (2)	No. CMS is under review
SWMU 103	Wastewater Playa Lake	No. Eco Risk pending
SWMU 104	Landfill No. 4	No. CMS is under review
SWMU 105	Landfill No. 3	No. CMS is under review
SWMU 109	FTA 4	No. CMS is under review. Not included in NFA petition
SWMU 110	Underground Waste Oil Tank No. 2336 at FTA 4	No. CMS is under review. Not included in NFA Petition
SWMU 111	Unlined Pit at FTA 4	No. CMS is under review
SWMU 112	OWS No. 2336 at FTA 4	No. CMS is under review
SWMU 125	Inactive UST 2	No. Never investigated. UST was abandoned in place. EPA's decision that fuel/product at AST/USTs does not require investigations is not shared by NMED. Must conduct investigation.
SWMU 127	OWS Near Tank 4095 (#1) & Leach field	No. CMS is under review
SWMU 129	Waste Oil Storage Facility 244. Formerly known as AOC "I"	No. CMS is under review. Was not included in NFA Petition

TABLE 2 SWMUS AND AOCS THAT APPEAR TO QUALIFY FOR NFA DETERMINATION		
SWMU/AOC	**DESCRIPTION**	**COMMENTS**
SWMU 1	OWS 119	YES
SWMU 3	OWS 108	YES
SWMU 5	OWS 121	YES
SWMU 7	OWS 129	YES
SWMU 8	OWS 165	YES
SWMU 9	Aircraft Washrack Drain system	YES
SWMU 11	OWS 170	YES
SWMU 16	OWS 680	YES
SWMU 32a	OWS 186 (#1)	YES
SWMU 33b	OWS 186 (#2)	YES
SWMU 38	OWS 194	YES
SWMU 39	OWS 195	YES
SWMU 46	OWS 196	YES
SWMU 47	OWS 494	YES
SWMU 48b	Above Ground Overflow Capacity Tank	YES
SWMU 51	OWS 375	YES
SWMU 55	Lead Acid Battery Accumulation Point	YES
SWMU 57	OWS 379	YES
SWMU 61	OWS 5077a	YES
SWMU 62	OWS 5077b	YES
SWMU 63	OWS 5077c	YES
SWMU 70	OWS and Leach Field 326	YES
SWMU 74	Landfill No. 1	YES
SWMU 83	Sump	YES
SWMU 92	OWS No. 5120	YES

TABLE 2 SWMUS AND AOCS THAT APPEAR TO QUALIFY FOR NFA DETERMINATION		
SWMU/AOC	**DESCRIPTION**	**COMMENTS**
SWMU 93	OWS No. 5121	YES
SWMU 94	OWS No. 5144	YES
SWMU 108	Explosive Ordinance Disposal Activities Area	YES, but was not included in NFA Petition.
SWMU 113	Landfill 5 Cell 3	YES
AOC D	Asbestos Burial Pit	YES. Listed on Table 2 of CAFB's HSWA Permit
AOC E	Runway Rubble Pile	YES. Listed on Table 2 of CAFB's HSWA Permit
AOC F	Gunsight Target Berm	YES. Listed on Table 2 of CAFB's HSWA Permit
AOC G	NEW SWMU Report 05/15/97	YES
AOC H	NEW SWMU Report 05/15/97	YES
DP-33		Yes. GWQB Approved NFA proposal on 12/12/1996

TABLE 3 SWMUS AND AOCS THAT MAY QUALIFY FOR NFA DETERMINATION		
SWMU/AOC	**DESCRIPTION**	**COMMENTS**
SWMU 6	POL Tank No. 129	Maybe. Additional documentation required. Need UST Close Out Report.
SWMU 10	POL Tank No. 170	Maybe. Never investigated Removed IAW UST Regulations. Additional documentation required. Need UST Close out report.
SWMU 34	AGE Drainage Ditch	Maybe. Additional documentation required.
SWMU 36	MWR Auto Body Shop	Maybe. Additional documentation required.
SWMU 71	Recovered JP-4 Fuel Tank No. 390	Maybe. Duplicate of SWMU 72. Need to document the NFA petition conclusions in a Report.
SWMU 72	OWS 390	Maybe. Additional documentation is needed to show that SWMU 71 is a duplicate of SWMU 72 in a RFI Report.
SWMU 76	Sludge Weathering Pit	Maybe. Additional documentation required.
SWMU 78	FTA 1	Maybe. Additional documentation required.
SWMU 79	UST at FTA 1	Maybe. Never Investigated - never existed? NFA Petition states that this SWMU did not exist. Additional documentation required.
SWMU 81	Solvent Disposal Site	Maybe. Additional documentation required.
SWMU 82	Landfill No. 2	Maybe. Additional documentation required.
SWMU 85	Stormwater Collection Point	Maybe. CAFB presumed that EPA's lack of response indicated acceptance. Additional documentation required.
SWMU 95	NE Stormwater Drainage Area	Maybe. Additional documentation required.

TABLE 3 SWMUS AND AOCS THAT MAY QUALIFY FOR NFA DETERMINATION		
SWMU/AOC	**DESCRIPTION**	**COMMENTS**
SWMU 96	Old Entomology Rinse Area	Maybe. Additional documentation required.
SWMU 98	Sanitary Sewage Line	Maybe. Additional documentation required.
SWMU 102	Wastewater Treatment Effluent Discharge	Maybe. Additional documentation required.
SWMU 106	FTA 2	Maybe, but CAFB must supply copy of approved 1994 RFI Work Plan and subsequent RFI Report
SWMU 107	FTA 3	Maybe, but CAFB must supply copy of approved 1994 RFI Work Plan and subsequent RFI Report
SWMU 124	Inactive UST 1 Duplicate of SWMU 48A	Maybe. Assertion that SWMU 124 is a duplicate of SWMU 48A has not been previously documented.
SWMU 126	Inactive UST 3 Closed in accordance with NMED UST regulations	Maybe for Criterion 4. Must provide UST close out report. EPA's opinion that an investigation at fuel/product ASTs/USTs is not required is not shared by NMED.
SWMU 128	OWS Near Tank 4095 (#2) & Leach Field	Maybe. Additional documentation required.

APPENDIX F

LF-25 (SWMU 97) CORRESPONDENCE

97. UNIT NAME: Concrete Rubble Pile

Unit Description: This unit is a rubble pile of concrete blocks located in the Eastern Area between Landfill No. 3 (SWMU No. 105) and the Old Entomology Area (SWMU No. 96). The concrete blocks are dispersed over a wide area in a grassy field (Ref. 47).

Date of Start-Up: Unknown

Date of Closure: Unknown

Wastes Managed: The waste consists of concrete rubble (Ref. 47).

Release Controls: No release controls were noted during the VSI.

Release History: No releases from this unit have been documented (Ref. 47).

Final Construction Completion Report
&
Remedial Action at
SWMU 97 - Landfill No. 25
Cannon Air Force Base
New Mexico

APPENDIX G
(Enclosures 1 & 1a)
ENVIRONMENTAL ASSESSMENT
CONCRETE RUBBLE FILE, SWMU 97

APPENDIX H
(Enclosure 2)
RCRA FACILITY INVESTIGATION (RFI) REPORT
FINAL REPORT
IRP SITE LF-25

U.S. Army Corps of
Engineers

APPENDIX G

ENVIRONMENTAL ASSESSMENT

CONCRETE RUBBLE FILE, SWMU 97
(LANDFILL NO. 25)

CANNON AIR FORCE BASE
NEW MEXICO

PREPARED BY
U.S. ARMY CORPS OF ENGINEERS
TULSA DISTRICT
FEBRUARY 1991

ENCLOSURE 1

CANNON AIR FORCE BASE, NEW MEXICO
ENVIRONMENTAL ASSESSMENT
CONCRETE RUBBLE PILE, SWMU 97

EXECUTIVE SUMMARY

Construction to enlarge the munitions facility required that the north portion of the rubble pile, SWMU 97, be moved. The RCRA Facilities Investigation (FI) of SWMU 97 is scheduled in 1992 or 1993. An environmental assessment was made of the rubble pile to determine if it could be moved safely. Various samples taken from excavated trenches at the site were analyzed for volatiles, semivolatiles, metals, PCBs, TCLP, and asbestos.

The rubble at the north end of the rubble pile shows no evidence of serious contamination. There is some evidence of soil contamination as indicated by the high metals, Barium and Cadmium, and the semivolatile Benzidine found in one trench. Old burn trenches dating from the early 1940s were encountered and may be contributing to the soil contamination. Very little data is known about the burn trenches, their contents, size, location or their contribution to possible soil contamination. Investigations should be undertaken to establish the characteristics of the burn trenches either as part of the RCRA FI or separately prior to movement of the rubble. An accelerated FI could be completed in one to one and a half years.

Recommend the construction be delayed until the completion of the RCRA Facilities Investigation.

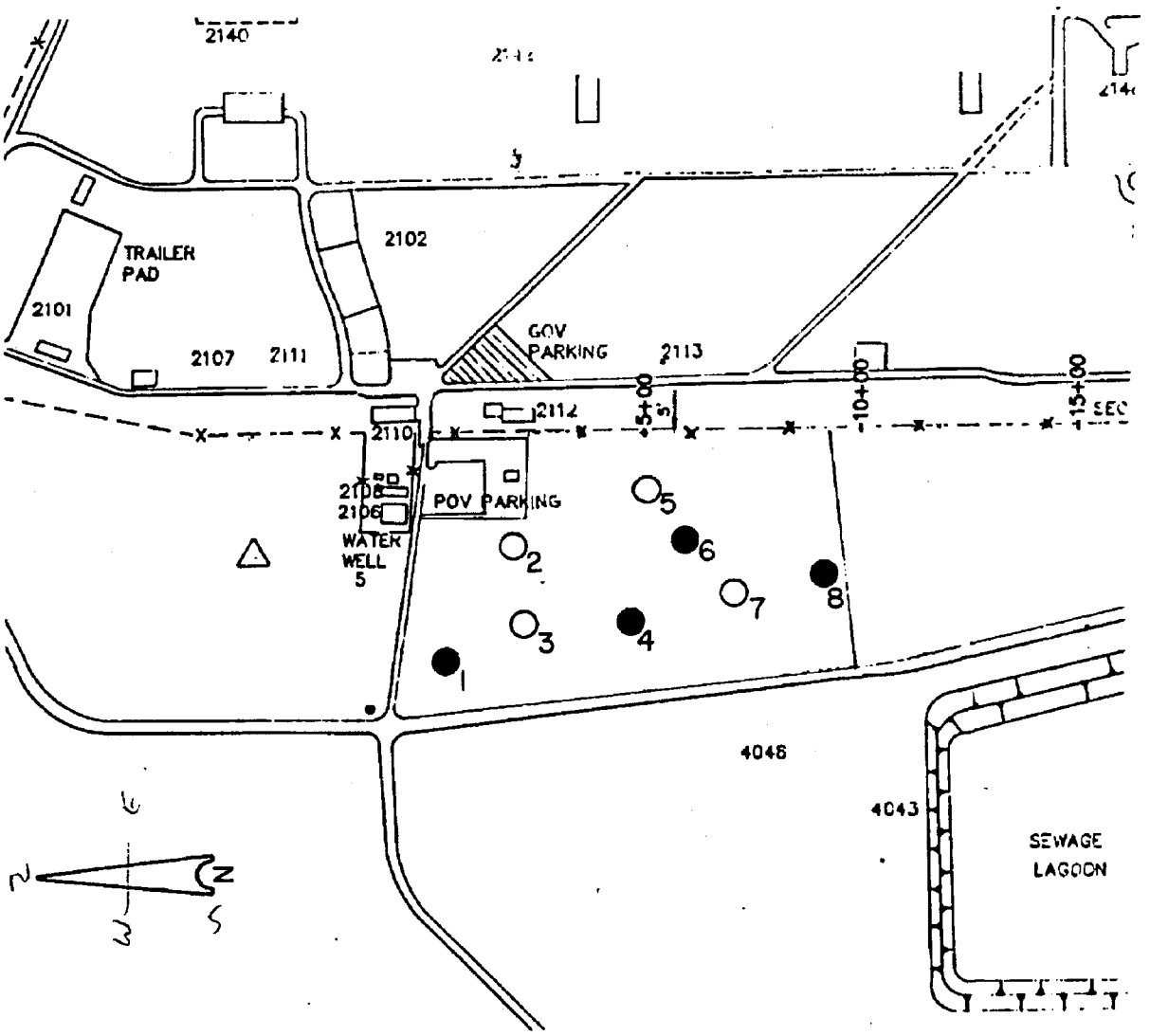
CANNON AIR FORCE BASE, NEW MEXICO
ENVIRONMENTAL ASSESSMENT
CONCRETE RUBBLE PILE, SWMU 97

1. **General**. The United States Army Corps of Engineers (USACE), Tulsa District was requested by USACE, Albuquerque District to perform an environmental assessment on a portion of the Rubble Pile at Cannon Air Force Base (AFB), New Mexico. The purpose of the investigation is to determine the degree of contamination, if any, in the Rubble pile prior to the start of construction on the site. This report provides the results of the environmental assessment.

2. **Background**. The rubble pile is Solid Waste Management Unit (SWMU) 97 under the provisions of Cannon AFB Resources Conservation and Recovery Act (RCRA) permit. The RCRA Facilities Assessment gave the area a low priority for further action and the Facilities Investigation (FI) is not scheduled until 1992 or 1993. The rubble pile is located near the northeast corner of the base between the munitions facility on the east and the sewage lagoon and perimeter road on the west as shown on Figure 2.1. The proposed expansion of the munitions facility requires clearing the rubble from the north end of the site to accommodate new construction. The site consists of construction debris, bricks, concrete blocks, tiles, asbestos tiles, concrete culverts, asphalt roofing shingles etc. and what appears to be asphalt and concrete paving and sub-base material. Only minor amounts of wood were observed. It is believed that the majority

of the rubble comes from demolition of World War II age buildings and the runways. The older, higher piles of rubble on the west and north sides of the site are overgrown with grass, shrubs and small trees as shown on photograph 1, Appendix B. The newer piles appeared as individual piles dumped out over the area still in small conical heaps as shown on photograph 2, Appendix B.

3. **Investigation**. The investigations were conducted according to the approved work plan. Two specific wastes, friable asbestos and PCBs, were thought to be possible contaminants from the building and runway demolition. Eight trenches were excavated during the period 4-5 December 1990 as shown on Figure 3.1. A trackhoe with a long arm was used to excavate the trenches and a bull dozer was used to clear trails, provide working platforms and backfill the trenches. The bucket on the trackhoe was steam cleaned between holes to prevent cross contamination. A rinsate sample off the bucket was collected after it was cleaned at trench 4. Two types of trenches were excavated. Type A trenches were excavated only through the rubble. Representative samples were taken from the rubble in these trenches to analyze for asbestos and PCBs. Type B trenches were excavated through the rubble and five feet into the undisturbed soil below. Type B trenches also had samples taken to analyze for asbestos and PCBs. In addition, representative rubble samples from the four type B trenches were tested using the Toxicity Characteristic Leaching Procedure (TCLP). The soil from the type B trenches was sampled



● TYPE "A" TRENCHES

○ TYPE "B" TRENCHES

△ BACKGROUND TRENCH

0 200 400 600 800 1000
Scale of feet

Figure 3.1 - Trench Location Map

from 0 to 1 feet and 4 to 5 feet measured downward from the natural ground surface. The soil samples were analyzed for volatiles (VOA), semivolatiles (SVOA), pesticides and PCBs and selected transition metals. Two of the type B sampling locations, 2 and 7, were located under the proposed foundations of buildings to be constructed during the expansion of the munitions facility. No rubble was encountered in trench 7. The asbestos and PCB samples were taken from the surface soils and dust, approximately 0 to 1 inch. The TCLP sample was collected from the ash encountered in trench 8. A quality control sample was collected in the 0 to 1 foot zone in trench 5. A background soil trench was excavated about 400 feet north of the site in an open field. Geologic logs were made of the materials encountered in the trenches. These logs are included in Appendix A. Photographs of each of the trenches and the general site conditions are included in Appendix B. The trenches were staked on completion for future survey.

4. **Results**.

a. **Trenching**. The trenching indicates that the majority of the material in the rubble pile is airfield paving and sub-grade material. The second most prevalent waste encountered was building demolition rubble. Mostly this material was surficial and was piled in individual heaps in the southeastern quadrant of the site or on top of the airfield material. The third type of

waste encountered was cinders, ash, other burned material, glass, and metal in what appears to be burn trenches. This material was not reported as being in this area. The burn trenches date from the earliest days of the base. An unburned portion of a newspaper had the date of December 28, 1943. The burn trenches and ash were encountered in trenches 4 and 8. The burn trench in trench 8 appears to be excavated about ten feet wide and about three feet deep below the original ground line. Soil was mounded on either side of the burn trench to make a trench four feet deep. When the burn trench was full excess soil was used to cover the trench. In the soil cover observed in trench 8, there is an indication of a second trench to the east. In the trench 4, airfield paving and sub-grade were placed over the soil cover. No obvious friable asbestos or oily material which may contain PCBs were encountered in any of the trenches. Photographs of each of the trenches is presented in Appendix B.

b. **Analytical.** Copies of the original laboratory data sheets are provided in Appendix C.

1). Rubble and Burn Trench Material. The analytical results of the samples for asbestos, PCBs, and TCLP are summarized in Table 4.1.

a). Asbestos. The asbestos samples were analyzed using polarized light microscopy. The only sample which contained detectable asbestos was from trench 1. It contained less than 0.25 percent actinolite asbestos. The sample was

Table 4.1 - Summary of Analytical Results of Rubble and Burn Trench Ash

			TCLP				
	Asbestos	PCBs	Extractable Organics	Volatile Organics	Herbicides	Pesticides	Metals
	percent	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Trench 1	< 0.25 percent*	ND					
Trench 2	ND	ND	ND	ND	ND	ND	Ba - 0.8 Hg - 0.002
Trench 3	ND	ND	ND	ND	ND	ND	Ba - 1.3 Cd - 0.01
Trench 4	ND	ND					
Trench 5	ND	ND	ND	ND	ND	ND	Ba - 0.8
Trench 6	ND	ND					
Trench 7	ND	ND					
Trench 8	ND	ND	ND	ND	ND	ND	Ba - 0.2

* <0.25 percent actinolite asbestos

collected from a pocket of broken concrete blocks and crumbly mortar. Other samples were taken from such places as just below a piece of asbestos tile, old gypsum wallboard, and from the natural soil surface. The sample from the natural soil, at trench 7, was taken to determine if asbestos fibers had been blown around in the area. The sample from trench 8 was taken from the burn trench ash.

b). PCBs. PCBs were analyzed using method 8080. There were no PCBs detected in the rubble or burn trench material.

c). TCLP. The samples were prepared using EPA TCLP extraction method 1311. The extract was then analyzed for VOA

using method 8240, for SVOA using method 8270, for herbicides using method 8150, for pesticides using method 8080, and for metals using method 6010 (ICP) except for Arsenic, Selenium and Mercury which used methods 7060, 7740 and 7471 respectively. There were no detections of VOAs, SVOAs, herbicides or pesticides. Only low levels of three metals were detected. Barium was detected in every sample ranging from 1.3 to 0.2 mg/l. Mercury was detected at 0.002 mg/l in trench 2 and Cadmium was detected in trench 3 at 0.01 mg/l. Except for the Barium at 1.3 mg/l, these metals concentrations are at or below maximum safe drinking water standards. The drinking water standard for Barium is 1.0 mg/l.

2). Soils. The analytical results of the soil samples are presented in Table 4.2.

a). Volatile Organics. The VOAs were analyzed using method 8240. There were no volatile organics detected in the soils.

b). Semivolatile Organics. The SVOAs were analyzed using method 8270. Two samples detected SVOAs on the Target Compound List. The trench 2 sample from 0 to 1 foot had 3400 ug/kg bis(2-ethyl-hexyl) phthalate (Bis). This is a common laboratory contaminant, however none of the other samples had Bis detected as would be expected if the contamination came from the laboratory. The trench 3 sample from 4 to 5 feet had 2000 ug/kg Benzidine detected. There were also 14 tentatively identified compounds (TICs) from 13,000 to 1100 ug/kg detected. Most of

Table 4.2 - Summary of Analytical Results of Soils

	0 to 1 Feet Below Natural Ground				4 to 5 Feet Below Natural Ground				
	VOA	SVOA	Pest/PCBs	Metals	VOA	SVOA	Pest/PCBs	Metals	Notes
	ug/kg	ug/kg	ug/kg	mg/kg	ug/kg	ug/kg	ug/kg	mg/kg	
Trench 1									Soil samples were not collected from Trench 1
Trench 2	ND	Bis- 3400	ND	As- 2.4 Mn- 85.0 Ba- 63.9 Mo- 28.0 Cd- 1.8 Ni- 7.9 Co- 3.1 V - 12.8 Cr- 5.9 Zn- 14.6 Cu- 5.0 Hg- 0.03	ND	ND	ND	As- 1.7 Mn- 57.0 Ba-121 Mo- 47.8 Cd- 2.9 Ni- 7.1 Co- 3.3 Se- 1.6 Cr- 9.6 V - 17.7 Cu- 4.5 Zn- 19.6 Hg- 0.01	Bis= Bis(2-ethyl-hexyl) phthalate
Trench 3	ND	ND	ND	As- 1.7 Mn-138 Ba- 82.1 Ni- 7.8 Cd- 8.5 Se- 0.6 Co- 3.8 V - 17.8 Cr- 10.3 Zn- 31.6 Cu- 20.2 Hg- 0.02	ND	Ben- 2000	ND	As- 3.0 Mn- 68.2 Ba-705 Ni- 9.2 Cd- 33.3 Se- 1.5 Co- 5.2 V - 27.0 Cr- 9.4 Zn- 23.1 Cu- 2.3 Hg- 0.02	Ben= Benzidine 14 SVOA Tentatively identified compounds were also detected in the 4-5 foot sample.
Trench 4									Soil samples were not collected from Trench 4
Trench 5	ND	ND	ND	As- 2.9 Mn-198 Ba-108 Mo-106 Cd- 4.7 Ni- 13.1 Co- 6.7 V - 27.9 Cr- 15.4 Zn- 36.9 Cu- 8.3 Hg- 0.65	ND	ND	ND	As- 2.9 Mo- 57.9 Ba-537 Ni- 9.6 Cd- 3.2 Se- 1.8 Co- 5.3 V - 21.7 Cr- 8.0 Zn- 18.9 Cu- 4.5 Mn- 78.7	
Trench 5 (QC Sample)	ND	ND	ND	As- 2.4 Mn-175 Ba- 85.9 Mo- 32.7 Cd- 1.8 Ni- 11.8 Co- 3.8 Se- 0.3 Cr- 9.1 V - 19.2 Cu- 6.6 Zn- 23.5 Hg- 0.03					

294 11

Table 4.2 - Summary of Analytical Results of Soils (continued)

	0 to 1 Feet Below Natural Ground				4 to 5 Feet Below Natural Ground				
	VOA	SVOA	Pest/PCBs	Metals	VOA	SVOA	Pest/PCBs	Metals	Notes
	ug/kg	ug/kg	ug/kg	mg/kg	ug/kg	ug/kg	ug/kg	mg/kg	
Trench 6									Soil samples were not collected from Trench 6.
Trench 7	ND	ND	ND	As- 2.2 Mn- 89.6 Ba-408 Mo- 47.0 Cd- 3.0 Ni- 9.7 Co- 4.3 Se- 1.0 Cr- 9.3 V - 16.4 Cu- 8.8 Zn- 24.6 Hg- 0.07	ND	ND	ND	As- 2.7 Mn-155 Ba-199 Mo- 69.0 Cd- 45.5 Ni- 11.1 Co- 5.4 Se- 2.7 Cr- 12.3 V - 20.8 Cu- 6.1 Zn- 30.1 Hg- 0.02	
Trench 8									Soil samples were not collected from Trench 8.
Back-ground Trench	ND	ND	ND	As- 2.8 Mn-176 Ba- 94.7 Mo- 83.2 Cd- 4.6 Ni- 11.7 Co- 5.9 Se- 1.9 Cr- 11.6 V - 22.3 Cu- 6.5 Zn- 30.7 Hg- 0.07	ND	ND	ND	As- 2.3 Mn- 48.8 Ba-106 Mo- 46.9 Cd- 2.8 Ni- 8.3 Co- 3.2 Se- 1.9 Cr- 7.8 V - 15.4 Cu- 4.1 Zn- 18.1 Hg- 0.03	1 SVOA Tentatively identified compound was also detected in the 0 to 1 foot sample.

294 12

these TICs are long chain alkanes such as might be associated with asphalt. The shallow background soil sample had one TIC detected at 700 ug/kg. This TIC was not detected in any other sample.

c). Pesticides/PCBs. The pesticides/PCBs were analyzed using method 8080. There were no pesticides/PCBs detected in any of the soil samples.

d). Metals. The metals were analyzed using method 6010 (ICP) except for Arsenic, Selenium, and Mercury which used methods 7060, 7740 and 7471 respectively. Thirteen metals were detected in most samples. These metals are Arsenic, Barium, Cadmium, Cobalt, Chromium, Copper, Mercury, Manganese, Molybdenum, Nickel, Selenium, Vanadium, and Zinc. Selenium was not detected in almost half of the samples. Mercury was not detected in one sample. Silver, Beryllium, Lead, Antimony and Thallium were analyzed for but not detected in any of the samples. There were three metals with anomalous high values. Barium was detected in the trench 3 deep soil sample at 705 mg/kg, in the trench 5 deep soil sample at 537 mg/kg, and in the trench 6 shallow soil sample at 408 mg/kg. Cadmium was detected at almost ten times the background level in trench 3 deep soil sample at 33.3 mg/kg and in the trench 7 deep soil sample at 45.5 mg/kg. Mercury was detected at an order of magnitude greater than the background sample in the trench 5 shallow soil sample at 0.65 mg/kg. Trench 3 had anomalous high values in both Barium and Cadmium in the TCLP analysis and the soils.

3). Rinsate Sample. The rinsate sample results are summarized in Table 4.3.

a). Volatile Organics. The VOAs were analyzed using method 8240. There were no VOAs detected in the rinsate water.

b). Semivolatile Organics. The SVOAs were analyzed using method 8270. There were four TICs detected in the rinsate water. All were below 100 ug/l and were probably related to residual compounds in the steam cleaner's water tank. None of these TICs were detected in any other sample.

c). Pesticides/PCBs. The pesticides/PCBs were analyzed using method 8080. There were no pesticides or PCBs detected in the rinsate water.

d). Metals. The metals were analyzed using methods 6010 (ICP) except for Arsenic, Selenium and Mercury which used methods 7060, 7740 and 7471 respectively. Only one metal, Zinc, was detected in the rinsate water at 0.02 mg/l. This value is low enough so as not to affect soils, rubble or ash metals concentrations. These results are shown in Table 4.3.

Table 4.3 - Summary of Analytical Results of the Rinsate Sample

	VOA	SVOA	Pest/PCBs	Metals	Notes
	ug/l	ug/l	ug/l	mg/l	
Rinsate Sample	ND	ND	ND	Zn- 0.02	4 SVOA Tentatively identified compounds detected in the rinsate sample

5. **Quality Control Review**. A review of the field sampling procedures indicates that the sampling procedures were satisfactory. A review of the laboratory data indicates that there is sufficient correlation between the surrogate compound spike level and the percent recovery. The holding times are within the standard periods. Only one parameter, Mercury, does not compare well with the duplicate sample, T 505QC. The duplicate Mercury does compare well with the other Mercury analyses.

6. **Conclusions**. The rubble at the north end of the rubble pile shows no evidence of serious contamination. There should be no hazard in moving the rubble. There is some evidence of soil contamination in trench 3 below the ash as evidenced by the high metals, Barium and Cadmium, and semivolatiles, Benzidine. The burn trenches at the site, which are part of the SWMU, were unexpected. The number of trenches, length, location and variation in material placed in the trenches is unknown. Prior to movement of the rubble, investigations should be undertaken to establish the characteristics of the burn trenches and the soil below. However, even if the rubble is moved prior to completion of the RCRA Facilities Investigation (FI), the site will remain a solid waste management unit (SWMU). The status of the site and corrective actions, if any, will be determined by the Environmental Protection Agency upon completion of the FI. An accelerated FI would provide the necessary information on the

site and burn trenches. The accelerated FI could be completed within one to one and a half years after it is started.

7. **Recommendations**. Recommend the construction at the site be delayed until the completion of the FI.

ENVIRONMENTAL ASSESSMENT

CONCRETE RUBBLE FILE, SWMU 97
(LANDFILL NO. 25)

COPIES OF ORIGINAL LABORATORY REPORT

CANNON AIR FORCE BASE
NEW MEXICO

PREPARED BY
U.S. ARMY CORPS OF ENGINEERS
TULSA DISTRICT
FEBRUARY 1991

ENCLOSURE 1a

Appendix C
Table of Contents

Trench No.	Page No.
Trench 1	1
Trench 2	3
Trench 3	29
Trench 4	55
Trench 5	57
Trench 5QC	83
Trench 6	95
Trench 7	97
Trench 8	117
Background Trench	125
Rinsate	143
Chain of Custody Forms	153

CANNON AFB
ASBESTOS SAMPLE ANALYSIS
SWDED-GL REPORT NO. 15263

1. REFERENCE: Reference is made to Tulsa Test Request MIL 90-113 requesting testing of possible asbestos samples.

2. SAMPLES: On December 5 and 10, 1990 nine bulk samples were received for analysis by Polarized Light Microscopy.

SWD LAB NO.	FIELD SAMPLE NO.	LOCATION	TOTAL VOLUME (liters)
A-1413	T-101	Rubble Pile - Trench 1	N/A
A-1414	T-301	Rubble Pile - Trench 3	N/A
A-1417	T-201	Rubble Pile - Trench 2	N/A
A-1418	T-401	Rubble Pile - Trench 4	N/A
A-1419	T-501	Rubble Pile - Trench 5	N/A
A-1420	T-501QC	Rubble Pile - Trench 5	N/A
A-1421	T-601	Rubble Pile - Trench 6	N/A
A-1422	T-701	Rubble Pile - Trench 7	N/A
A-1423	T-801	Rubble Pile - Trench 8	N/A

3. RESULTS OF PLM ANALYSIS:

SWD LAB NO.	FIELD SAMPLE NO.	TYPE MATERIAL	ASBESTOS TYPE	PERCENT ASBESTOS
→ A-1413	T-101	Soil	Actinolite	Trace
A-1414	T-301	Soil	None	Detected
A-1417	T-201	Soil	None	Detected
A-1418	T-401	Soil	None	Detected
A-1419	T-501	Soil	None	Detected
A-1420	T-501QC	Soil	None	Detected
A-1421	T-601	Soil	None	Detected
A-1422	T-701	Soil	None	Detected
A-1423	T-801	Soil	None	Detected

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DATE RECEIVED: 5-DEC-1990

REPORT NUMBER: D90-30984
REPORT DATE: 3-JAN-1991

SAMPLE SUBMITTED BY: US Army Corp of Engineers
ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Janice Stewart

SAMPLE MATRIX: SOIL
ID MARKS: T-102 0-3892

TEST REQUESTED	DETECTION LIMIT			RESULTS	
PCB by EPA Method 8080					
Arochlor 1016	0.1	mg/Kg	<	0.1	mg/Kg
Arochlor 1221	0.1	mg/Kg	<	0.1	mg/Kg
Arochlor 1232	0.1	mg/Kg	<	0.1	mg/Kg
Arochlor 1242	0.1	mg/Kg	<	0.1	mg/Kg
Arochlor 1248	0.1	mg/Kg	<	0.1	mg/Kg
Arochlor 1254	0.1	mg/Kg	<	0.1	mg/Kg
Arochlor 1260	0.1	mg/Kg	<	0.1	mg/Kg

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David R. Godwin, Ph.D.
Chief Executive Officer

2

CANNON AFB
ASBESTOS SAMPLE ANALYSIS
SWDED-GL REPORT NO. 15263

1. REFERENCE: Reference is made to Tulsa Test Request MIL 90-113 requesting testing of possible asbestos samples.

2. SAMPLES: On December 5 and 10, 1990 nine bulk samples were received for analysis by Polarized Light Microscopy.

SWD LAB NO.	FIELD SAMPLE NO.	LOCATION	TOTAL VOLUME (liters)
A-1413	T-101	Rubble Pile - Trench 1	N/A
A-1414	T-301	Rubble Pile - Trench 3	N/A
A-1417	T-201	Rubble Pile - Trench 2	N/A
A-1418	T-401	Rubble Pile - Trench 4	N/A
A-1419	T-501	Rubble Pile - Trench 5	N/A
A-1420	T-501QC	Rubble Pile - Trench 5	N/A
A-1421	T-601	Rubble Pile - Trench 6	N/A
A-1422	T-701	Rubble Pile - Trench 7	N/A
A-1423	T-801	Rubble Pile - Trench 8	N/A

3. RESULTS OF PLM ANALYSIS:

SWD LAB NO.	FIELD SAMPLE NO.	TYPE MATERIAL	ASBESTOS TYPE	PERCENT ASBESTOS
A-1413	T-101	Soil	Actinolite	Trace
A-1414	T-301	Soil	None	Detected
A-1417	T-201	Soil	None	Detected
A-1418	T-401	Soil	None	Detected
A-1419	T-501	Soil	None	Detected
A-1420	T-501QC	Soil	None	Detected
A-1421	T-601	Soil	None	Detected
A-1422	T-701	Soil	None	Detected
A-1423	T-801	Soil	None	Detected

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DATE RECEIVED: 6-DEC-1990

REPORT NUMBER: D90-31110
REPORT DATE: 3-JAN-1991

SAMPLE SUBMITTED BY: US Army Corp of Engineers
ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Cathy Hutchins

SAMPLE MATRIX: SOIL
ID MARKS: T202 0-3912

TEST REQUESTED	DETECTION LIMIT			RESULTS	
PCB by EPA Method 8080					
Arochlor 1016	0.1	mg/Kg	<	0.1	mg/Kg
Arochlor 1221	0.1	mg/Kg	<	0.1	mg/Kg
Arochlor 1232	0.1	mg/Kg	<	0.1	mg/Kg
Arochlor 1242	0.1	mg/Kg	<	0.1	mg/Kg
Arochlor 1248	0.1	mg/Kg	<	0.1	mg/Kg
Arochlor 1254	0.1	mg/Kg	<	0.1	mg/Kg
Arochlor 1260	0.1	mg/Kg	<	0.1	mg/Kg

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DATE RECEIVED: 6-DEC-1990

REPORT NUMBER: D90-31111
REPORT DATE: 3-JAN-1991

SAMPLE SUBMITTED BY: US Army Corp of Engineers
ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Cathy Hutchins

SAMPLE MATRIX: SOIL
ID MARKS: T203 0-3913

TEST REQUESTED	DETECTION LIMIT			RESULTS	
EPA 8270 TCLP - Extractable Organics					
o-Cresol	0.04	mg/L	<	0.04	mg/L
m-Cresol	0.04	mg/L	<	0.04	mg/L
p-Cresol	0.04	mg/L	<	0.04	mg/L
2,4-Dinitrotoluene	0.02	mg/L	<	0.02	mg/L
Hexachlorobenzene	0.02	mg/L	<	0.02	mg/L
Hexachlorobutadiene	0.02	mg/L	<	0.02	mg/L
Hexachloroethane	0.02	mg/L	<	0.02	mg/L
Nitrobenzene	0.02	mg/L	<	0.02	mg/L
Pentachlorophenol	0.10	mg/L	<	0.10	mg/L
Pyridine	0.02	mg/L	<	0.02	mg/L
2,4,5-Trichlorophenol	0.02	mg/L	<	0.02	mg/L
2,4,6-Trichlorophenol	0.02	mg/L	<	0.02	mg/L

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE LEVEL (µg/L)	PERCENT RECOVERED
Nitrobenzene-d5(SS)	50	70.1
2-Fluorobiphenyl(SS)	50	74.3
Terphenyl-d14(SS)	50	77.4
Phenol-d6(SS)	100	58.4
2-Fluorophenol(SS)	100	61.8
2,4,6-Tribromophenol(SS)	100	53.0

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DATE RECEIVED: 6-DEC-1990

REPORT NUMBER: D90-31111
REPORT DATE: 3-JAN-1991

SAMPLE SUBMITTED BY: US Army Corp of Engineers
ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Cathy Hutchins

SAMPLE MATRIX: SOIL
ID MARKS: T203 0-3913

TEST REQUESTED	DETECTION LIMIT			RESULTS	
EPA 8240 TCLP - Volatile Organics					
Benzene	0.01	mg/L	<	0.01	mg/L
Carbon tetrachloride	0.01	mg/L	<	0.01	mg/L
Chlorobenzene	0.01	mg/L	<	0.01	mg/L
Chloroform	0.01	mg/L	<	0.01	mg/L
1,4-Dichlorobenzene	0.01	mg/L	<	0.01	mg/L
1,2-Dichloroethane	0.01	mg/L	<	0.01	mg/L
1,1-Dichloroethene	0.01	mg/L	<	0.01	mg/L
Methyl ethyl ketone	0.05	mg/L	<	0.05	mg/L
Tetrachloroethene	0.01	mg/L	<	0.01	mg/L
Trichloroethene	0.01	mg/L	<	0.01	mg/L
Vinyl chloride	0.02	mg/L	<	0.02	mg/L

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE LEVEL(µg/L)	PERCENT RECOVERED
1,2-Dichloroethane-d4(SS)	50	106
Toluene-d8(SS)	50	94.2
Bromofluorobenzene(SS)	50	98.6

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DATE RECEIVED: 6-DEC-1990

REPORT NUMBER: D90-31111
REPORT DATE: 3-JAN-1991

SAMPLE SUBMITTED BY: US Army Corp of Engineers
ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Cathy Hutchins

SAMPLE MATRIX: SOIL
ID MARKS: T203 0-3913

TEST REQUESTED	DETECTION LIMIT		RESULTS		
TCLP Herbicides					
2,4-D	5.0	mg/L	<	5.0	mg/L
2,4,5-TP Silvex	0.5	mg/L	<	0.5	mg/L

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DATE RECEIVED: 6-DEC-1990

REPORT NUMBER: D90-31111
REPORT DATE: 3-JAN-1991

SAMPLE SUBMITTED BY: US Army Corp of Engineers
ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Cathy Hutchins

SAMPLE MATRIX: SOIL
ID MARKS: T203 0-3913

TEST REQUESTED	DETECTION LIMIT		RESULTS		
TCLP Pesticides					
Chlordane	0.014	mg/L	<	0.014	mg/L
Heptachlor	0.0010	mg/L	<	0.0010	mg/L
Heptachlor epoxide	0.0010	mg/L	<	0.0010	mg/L
Endrin	0.006	mg/L	<	0.006	mg/L
Lindane	0.004	mg/L	<	0.004	mg/L
Methoxychlor	0.18	mg/L	<	0.18	mg/L
Toxaphene	0.24	mg/L	<	0.24	mg/L

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DATE RECEIVED: 6-DEC-1990

REPORT NUMBER: D90-31111
REPORT DATE: 3-JAN-1991

SAMPLE SUBMITTED BY: US Army Corp of Engineers
ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Cathy Hutchins

SAMPLE MATRIX: SOIL
ID MARKS: T203 0-3913

TEST REQUESTED	DETECTION LIMIT			RESULTS	
TCLP METALS:					
Silver	0.01	mg/L	<	0.01	mg/L
Arsenic	0.05	mg/L	<	0.05	mg/L
Barium	0.1	mg/L		0.8	mg/L
Cadmium	0.01	mg/L	<	0.01	mg/L
Chromium	0.05	mg/L	<	0.05	mg/L
Mercury	0.001	mg/L		0.002	mg/L
Lead	0.02	mg/L	<	0.02	mg/L
Selenium	0.05	mg/L	<	0.05	mg/L

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DATE RECEIVED: 6-DEC-1990

REPORT NUMBER: D90-31112
REPORT DATE: 3-JAN-1991

SAMPLE SUBMITTED BY: US Army Corp of Engineers
ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Cathy Hutchins

SAMPLE MATRIX: SOIL
ID MARKS: T204 0-3914

TEST REQUESTED	DETECTION LIMIT			RESULTS	
EPA 8240 Volatile Organics					
Acrolein	10.0	µg/Kg	<	10.0	µg/Kg
Acrylonitrile	10.0	µg/Kg	<	10.0	µg/Kg
Benzene	5.0	µg/Kg	<	5.0	µg/Kg
Bromodichloromethane	5.0	µg/Kg	<	5.0	µg/Kg
Bromoform	5.0	µg/Kg	<	5.0	µg/Kg
Bromomethane	10.0	µg/Kg	<	10.0	µg/Kg
Carbon tetrachloride	5.0	µg/Kg	<	5.0	µg/Kg
Chlorobenzene	5.0	µg/Kg	<	5.0	µg/Kg
Chlorodibromomethane	5.0	µg/Kg	<	5.0	µg/Kg
Chloroethane	10.0	µg/Kg	<	10.0	µg/Kg
2-Chloroethyvinyl ether	10.0	µg/Kg	<	10.0	µg/Kg
Chloroform	5.0	µg/Kg	<	5.0	µg/Kg
Chloromethane	10.0	µg/Kg	<	10.0	µg/Kg
1,2-Dichlorobenzene	5.0	µg/Kg	<	5.0	µg/Kg
1,3-Dichlorobenzene	5.0	µg/Kg	<	5.0	µg/Kg
1,4-Dichlorobenzene	5.0	µg/Kg	<	5.0	µg/Kg
1,1-Dichloroethane	5.0	µg/Kg	<	5.0	µg/Kg
1,2-Dichloroethane	5.0	µg/Kg	<	5.0	µg/Kg
1,1-Dichloroethene	5.0	µg/Kg	<	5.0	µg/Kg
trans-1,2-Dichloroethene	5.0	µg/Kg	<	5.0	µg/Kg
1,2-Dichloropropane	5.0	µg/Kg	<	5.0	µg/Kg
cis-1,3-Dichloropropene	5.0	µg/Kg	<	5.0	µg/Kg
trans-1,3 Dichloropropene	5.0	µg/Kg	<	5.0	µg/Kg
Ethylbenzene	5.0	µg/Kg	<	5.0	µg/Kg
Methylene chloride	10.0	µg/Kg	<	10.0	µg/Kg
1,1,2,2-Tetrachloroethane	5.0	µg/Kg	<	5.0	µg/Kg
Tetrachloroethene	5.0	µg/Kg	<	5.0	µg/Kg
Toluene	5.0	µg/Kg	<	5.0	µg/Kg
1,1,1-Trichloroethane	5.0	µg/Kg	<	5.0	µg/Kg
1,1,2-Trichloroethane	5.0	µg/Kg	<	5.0	µg/Kg

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REPORT NUMBER: D90-31112

TEST REQUESTED	DETECTION LIMIT			RESULTS	
EPA 8240 (Continued) Volatile Organics					
Trichloroethene	5.0	µg/Kg	<	5.0	µg/Kg
Trichlorofluoromethane	10.0	µg/Kg	<	10.0	µg/Kg
Vinyl chloride	10.0	µg/Kg	<	10.0	µg/Kg
Xylenes	5.0	µg/Kg	<	5.0	µg/Kg

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE LEVEL(µg/Kg)	PERCENT RECOVERED
1,2-Dichloroethane-d4 (SS)	50	113
Toluene-d8 (SS)	50	114
Bromofluorobenzene (SS)	50	77.0

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Chief Executive Officer

11

294 50

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DATE RECEIVED: 6-DEC-1990

REPORT NUMBER: D90-31112
REPORT DATE: 3-JAN-1991

SAMPLE SUBMITTED BY: US Army Corp of Engineers
ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Cathy Hutchins

SAMPLE MATRIX: SOIL
ID MARKS: T204 0-3914

TEST REQUESTED	DETECTION LIMIT			RESULTS	
EPA 8270 Acid Extractable Organics					
4-chloro-3-methylphenol	660	µg/Kg	<	660	µg/Kg
2-chlorophenol	660	µg/Kg	<	660	µg/Kg
2,4-Dichlorophenol	660	µg/Kg	<	660	µg/Kg
2,4-Dimethylphenol	660	µg/Kg	<	660	µg/Kg
4,6-Dinitro-2-methylphenol	660	µg/Kg	<	660	µg/Kg
2,4-Dinitrophenol	3300	µg/Kg	<	3300	µg/Kg
2-Methylphenol	660	µg/Kg	<	660	µg/Kg
2-Nitrophenol	660	µg/Kg	<	660	µg/Kg
4-Nitrophenol	3300	µg/Kg	<	3300	µg/Kg
Pentachlorophenol	3300	µg/Kg	<	3300	µg/Kg
Phenol	660	µg/Kg	<	660	µg/Kg
2,4,6-Trichlorophenol	660	µg/Kg	<	660	µg/Kg

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE LEVEL(µg/Kg)	PERCENT RECOVERED
Phenol-d5 (SS)	100	40.7
2-Fluorophenol (SS)	100	46.4
2,4,6-Tribromophenol (SS)	100	32.4

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DATE RECEIVED: 6-DEC-1990

REPORT NUMBER: D90-31112
REPORT DATE: 3-JAN-1991

SAMPLE SUBMITTED BY: US Army Corp of Engineers
ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Cathy Hutchins

SAMPLE MATRIX: SOIL
ID MARKS: T204 0-3914

TEST REQUESTED	DETECTION LIMIT			RESULTS	
EPA 8270 Base-Neutral Extractable Organics					
Acenaphthene	660	µg/Kg	<	660	µg/Kg
Acenaphthylene	660	µg/Kg	<	660	µg/Kg
Anthracene	660	µg/Kg	<	660	µg/Kg
Benzidine	660	µg/Kg	<	660	µg/Kg
Benzo(a)anthracene	660	µg/Kg	<	660	µg/Kg
Benzo(b)fluoranthene	660	µg/Kg	<	660	µg/Kg
Benzo(k)fluoranthene	660	µg/Kg	<	660	µg/Kg
Benzo(g,h,i)perylene	660	µg/Kg	<	660	µg/Kg
Benzo(a)pyrene	660	µg/Kg	<	660	µg/Kg
Bis(2-chloroethoxy)methane	660	µg/Kg	<	660	µg/Kg
Bis(2-chloroethyl)ether	660	µg/Kg	<	660	µg/Kg
Bis(2-chloroisopropyl)ether	660	µg/Kg	<	660	µg/Kg
Bis(2-ethylhexyl)phthalate	660	µg/Kg		3400	µg/Kg
4-Bromophenylphenyl ether	660	µg/Kg	<	660	µg/Kg
Butyl benzyl phthalate	660	µg/Kg	<	660	µg/Kg
2-Chloronaphthalene	660	µg/Kg	<	660	µg/Kg
4-Chlorophenylphenyl ether	660	µg/Kg	<	660	µg/Kg
Chrysene	660	µg/Kg	<	660	µg/Kg
Dibenz(a,h)anthracene	660	µg/Kg	<	660	µg/Kg
Di-n-butylphthalate	660	µg/Kg	<	660	µg/Kg
1,3-Dichlorobenzene	660	µg/Kg	<	660	µg/Kg
1,4-Dichlorobenzene	660	µg/Kg	<	660	µg/Kg
1,2-Dichlorobenzene	660	µg/Kg	<	660	µg/Kg
3,3'-Dichlorobenzidine	1300	µg/Kg	<	1300	µg/Kg
Diethylphthalate	660	µg/Kg	<	660	µg/Kg
Dimethylphthalate	660	µg/Kg	<	660	µg/Kg
2,4-Dinitrotoluene	660	µg/Kg	<	660	µg/Kg
2,6-Dinitrotoluene	660	µg/Kg	<	660	µg/Kg
Di-n-octylphthalate	660	µg/Kg	<	660	µg/Kg
Fluoranthene	660	µg/Kg	<	660	µg/Kg

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REPORT NUMBER: D90-31112

TEST REQUESTED	DETECTION LIMIT			RESULTS	
EPA 8270 (Continued) Base-Neutral Extractable Organics					
Fluorene	660	µg/Kg	<	660	µg/Kg
Hexachlorobenzene	660	µg/Kg	<	660	µg/Kg
Hexachlorobutadiene	660	µg/Kg	<	660	µg/Kg
Hexachlorocyclobutandiene	660	µg/Kg	<	660	µg/Kg
Hexachloroethane	660	µg/Kg	<	660	µg/Kg
Indeno(1,2,3-cd)pyrene	660	µg/Kg	<	660	µg/Kg
Isophorone	660	µg/Kg	<	660	µg/Kg
Naphthalene	660	µg/Kg	<	660	µg/Kg
Nitrobenzene	660	µg/Kg	<	660	µg/Kg
N-Nitrosodimethylamine	660	µg/Kg	<	660	µg/Kg
N-Nitrosodiphenylamine	660	µg/Kg	<	660	µg/Kg
N-Nitrosodipropylamine	660	µg/Kg	<	660	µg/Kg
Phenanthrene	660	µg/Kg	<	660	µg/Kg
Pyrene	660	µg/Kg	<	660	µg/Kg
1,2,4-Trichlorobenzene	660	µg/Kg	<	660	µg/Kg

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE LEVEL(µg/Kg)	PERCENT RECOVERED
Nitrobenzene-d5 (SS)	50	49.9
2-Fluorobenzene (SS)	50	63.8
Terphenyl-d14 (SS)	50	74.5

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Chief Executive Officer

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DATE RECEIVED: 6-DEC-1990

REPORT NUMBER: D90-31112
REPORT DATE: 3-JAN-1991

SAMPLE SUBMITTED BY: US Army Corp of Engineers
ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Cathy Hutchins

SAMPLE MATRIX: SOIL
ID MARKS: T204 0-3914

TENTATIVELY IDENTIFIED COMPOUNDS

COMPOUND	RETENTION TIME	FRACTION	RESULTS	
Tentatively Identified Compounds - ABN				
No compounds detected		ABN	660	µg/Kg

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Chief Executive Officer

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DATE RECEIVED: 6-DEC-1990

REPORT NUMBER: D90-31112
REPORT DATE: 3-JAN-1991

SAMPLE SUBMITTED BY: US Army Corp of Engineers
ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Cathy Hutchins

SAMPLE MATRIX: SOIL
ID MARKS: T204 0-3914

TENTATIVELY IDENTIFIED COMPOUNDS

COMPOUND	RETENTION TIME	FRACTION	RESULTS	
Tentatively Identified Compounds - VOA				
No compounds detected		VOA	10	µg/Kg

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Chief Executive Officer

16

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DATE RECEIVED: 6-DEC-1990

REPORT NUMBER: D90-31112
REPORT DATE: 7-JAN-1991

SAMPLE SUBMITTED BY: US Army Corp of Engineers
ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Cathy Hutchins

SAMPLE MATRIX: SOIL
ID MARKS: T204 0-3914

TEST REQUESTED	DETECTION LIMIT			RESULTS	
Organochlorine Pesticides and PCB's					
Aldrin	27	µg/Kg	<	27	µg/Kg
Alpha-BHC	20	µg/Kg	<	20	µg/Kg
Beta-BHC	40	µg/Kg	<	40	µg/Kg
Delta-BHC	60	µg/Kg	<	60	µg/Kg
Gamma-BHC(Lindane)	26	µg/Kg	<	26	µg/Kg
Chlordane	93	µg/Kg	<	93	µg/Kg
4,4'-DDD	73	µg/Kg	<	73	µg/Kg
4,4'-DDE	26	µg/Kg	<	26	µg/Kg
4,4'-DDT	80	µg/Kg	<	80	µg/Kg
Dieldrin	13	µg/Kg	<	13	µg/Kg
Endosulfan I	93	µg/Kg	<	93	µg/Kg
Endosulfan II	26	µg/Kg	<	26	µg/Kg
Endosulfan Sulfate	442	µg/Kg	<	442	µg/Kg
Endrin	40	µg/Kg	<	40	µg/Kg
Endrin Aldehyde	154	µg/Kg	<	154	µg/Kg
Heptachlor	20	µg/Kg	<	20	µg/Kg
Heptachlor Epoxide	556	µg/Kg	<	556	µg/Kg
Methoxychlor	1210	µg/Kg	<	1210	µg/Kg
Toxaphene	1610	µg/Kg	<	1610	µg/Kg
Arochlor-1016	67	µg/Kg	<	67	µg/Kg
Arochlor-1221	67	µg/Kg	<	67	µg/Kg
Arochlor-1232	67	µg/Kg	<	67	µg/Kg
Arochlor-1242	67	µg/Kg	<	67	µg/Kg
Arochlor-1248	67	µg/Kg	<	67	µg/Kg
Arochlor-1254	67	µg/Kg	<	67	µg/Kg
Arochlor-1260	67	µg/Kg	<	67	µg/Kg

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DATE RECEIVED: 6-DEC-1990

REPORT NUMBER: D90-31113
REPORT DATE: 3-JAN-1991

SAMPLE SUBMITTED BY: US Army Corp of Engineers
ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Cathy Hutchins

SAMPLE MATRIX: SOIL
ID MARKS: T205 0-3915

TEST REQUESTED	DETECTION LIMIT			RESULTS	
TOTAL METALS:					
Silver	1.0	mg/Kg	<	1.0	mg/Kg
Arsenic	0.1	mg/Kg		2.4	mg/Kg
Barium	1.0	mg/Kg		63.9	mg/Kg
Beryllium	1.0	mg/Kg	<	1.0	mg/Kg
Cadmium	1.0	mg/Kg		1.8	mg/Kg
Cobalt	1.0	mg/Kg		3.1	mg/Kg
Chromium	1.0	mg/Kg		5.9	mg/Kg
Copper	1.0	mg/Kg		5.0	mg/Kg
Mercury	0.01	mg/Kg		0.03	mg/Kg
Manganese	1.0	mg/Kg		85.0	mg/Kg
Molybdenum	1.0	mg/Kg		28.0	mg/Kg
Nickel	1.0	mg/Kg		7.9	mg/Kg
Lead	1.0	mg/Kg	<	1.0	mg/Kg
Antimony	1.0	mg/Kg	<	1.0	mg/Kg
Selenium	0.1	mg/Kg	<	0.1	mg/Kg
Thallium	1.0	mg/Kg	<	1.0	mg/Kg
Vanadium	1.0	mg/Kg		12.8	mg/Kg
Zinc	1.0	mg/Kg		14.6	mg/Kg

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DATE RECEIVED: 6-DEC-1990

REPORT NUMBER: D90-31114
REPORT DATE: 3-JAN-1991

SAMPLE SUBMITTED BY: US Army Corp of Engineers
ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Cathy Hutchins

SAMPLE MATRIX: SOIL
ID MARKS: T206 0-3916

TEST REQUESTED	DETECTION LIMIT			RESULTS	
EPA 8240 Volatile Organics					
Acrolein	10.0	µg/Kg	<	10.0	µg/Kg
Acrylonitrile	10.0	µg/Kg	<	10.0	µg/Kg
Benzene	5.0	µg/Kg	<	5.0	µg/Kg
Bromodichloromethane	5.0	µg/Kg	<	5.0	µg/Kg
Bromoform	5.0	µg/Kg	<	5.0	µg/Kg
Bromomethane	10.0	µg/Kg	<	10.0	µg/Kg
Carbon tetrachloride	5.0	µg/Kg	<	5.0	µg/Kg
Chlorobenzene	5.0	µg/Kg	<	5.0	µg/Kg
Chlorodibromomethane	5.0	µg/Kg	<	5.0	µg/Kg
Chloroethane	10.0	µg/Kg	<	10.0	µg/Kg
2-chloroethyvinyl ether	10.0	µg/Kg	<	10.0	µg/Kg
Chloroform	5.0	µg/Kg	<	5.0	µg/Kg
Chloromethane	10.0	µg/Kg	<	10.0	µg/Kg
1,2-Dichlorobenzene	5.0	µg/Kg	<	5.0	µg/Kg
1,3-Dichlorobenzene	5.0	µg/Kg	<	5.0	µg/Kg
1,4-Dichlorobenzene	5.0	µg/Kg	<	5.0	µg/Kg
1,1-Dichloroethane	5.0	µg/Kg	<	5.0	µg/Kg
1,2-Dichloroethane	5.0	µg/Kg	<	5.0	µg/Kg
1,1-Dichloroethene	5.0	µg/Kg	<	5.0	µg/Kg
trans-1,2-Dichloroethene	5.0	µg/Kg	<	5.0	µg/Kg
1,2-Dichloropropane	5.0	µg/Kg	<	5.0	µg/Kg
cis-1,3-Dichloropropene	5.0	µg/Kg	<	5.0	µg/Kg
trans-1,3 Dichloropropene	5.0	µg/Kg	<	5.0	µg/Kg
Ethylbenzene	5.0	µg/Kg	<	5.0	µg/Kg
Methylene chloride	10.0	µg/Kg	<	10.0	µg/Kg
1,1,2,2-Tetrachloroethane	5.0	µg/Kg	<	5.0	µg/Kg
Tetrachloroethene	5.0	µg/Kg	<	5.0	µg/Kg
Toluene	5.0	µg/Kg	<	5.0	µg/Kg
1,1,1-Trichloroethane	5.0	µg/Kg	<	5.0	µg/Kg
1,1,2-Trichloroethane	5.0	µg/Kg	<	5.0	µg/Kg

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REPORT NUMBER: D90-31114

TEST REQUESTED	DETECTION LIMIT			RESULTS	
EPA 8240 (Continued) Volatile Organics					
Trichloroethene	5.0	µg/Kg	<	5.0	µg/Kg
Trichlorofluoromethane	10.0	µg/Kg	<	10.0	µg/Kg
Vinyl chloride	10.0	µg/Kg	<	10.0	µg/Kg
Xylenes	5.0	µg/Kg	<	5.0	µg/Kg

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE LEVEL(µg/Kg)	PERCENT RECOVERED
1,2-Dichloroethane-d4 (SS)	50	100
Toluene-d8 (SS)	50	106
Bromofluorobenzene (SS)	50	85.1

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Chief Executive Officer

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DATE RECEIVED: 6-DEC-1990

REPORT NUMBER: D90-31114
REPORT DATE: 3-JAN-1991

SAMPLE SUBMITTED BY: US Army Corp of Engineers
ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Cathy Hutchins

SAMPLE MATRIX: SOIL
ID MARKS: T206 0-3916

TEST REQUESTED	DETECTION LIMIT			RESULTS	
EPA 8270 Acid Extractable Organics					
4-Chloro-3-methylphenol	660	µg/Kg	<	660	µg/Kg
2-Chlorophenol	660	µg/Kg	<	660	µg/Kg
2,4-Dichlorophenol	660	µg/Kg	<	660	µg/Kg
2,4-Dimethylphenol	660	µg/Kg	<	660	µg/Kg
4,6-Dinitro-2-methylphenol	660	µg/Kg	<	660	µg/Kg
2,4-Dinitrophenol	3300	µg/Kg	<	3300	µg/Kg
2-Methylphenol	660	µg/Kg	<	660	µg/Kg
2-Nitrophenol	660	µg/Kg	<	660	µg/Kg
4-Nitrophenol	3300	µg/Kg	<	3300	µg/Kg
Pentachlorophenol	3300	µg/Kg	<	3300	µg/Kg
Phenol	660	µg/Kg	<	660	µg/Kg
2,4,6-Trichlorophenol	660	µg/Kg	<	660	µg/Kg

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE LEVEL(µg/Kg)	PERCENT RECOVERED
Phenol-d5 (SS)	100	34.4
2-Fluorophenol (SS)	100	50.7
2,4,6-Tribromophenol (SS)	100	40.1

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DATE RECEIVED: 6-DEC-1990

REPORT NUMBER: D90-31114
REPORT DATE: 3-JAN-1991

SAMPLE SUBMITTED BY: US Army Corp of Engineers
ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Cathy Hutchins

SAMPLE MATRIX: SOIL
ID MARKS: T206 0-3916

TEST REQUESTED	DETECTION LIMIT			RESULTS	
EPA 8270 Base-Neutral Extractable Organics					
Acenaphthene	660	µg/Kg	<	660	µg/Kg
Acenaphthylene	660	µg/Kg	<	660	µg/Kg
Anthracene	660	µg/Kg	<	660	µg/Kg
Benzidine	660	µg/Kg	<	660	µg/Kg
Benzo(a)anthracene	660	µg/Kg	<	660	µg/Kg
Benzo(b)fluoranthene	660	µg/Kg	<	660	µg/Kg
Benzo(k)fluoranthene	660	µg/Kg	<	660	µg/Kg
Benzo(g,h,i)perylene	660	µg/Kg	<	660	µg/Kg
Benzo(a)pyrene	660	µg/Kg	<	660	µg/Kg
Bis(2-chloroethoxy)methane	660	µg/Kg	<	660	µg/Kg
Bis(2-chloroethyl)ether	660	µg/Kg	<	660	µg/Kg
Bis(2-chloroisopropyl)ether	660	µg/Kg	<	660	µg/Kg
Bis(2-ethylhexyl)phthalate	660	µg/Kg	<	660	µg/Kg
4-Bromophenylphenyl ether	660	µg/Kg	<	660	µg/Kg
Butyl benzyl phthalate	660	µg/Kg	<	660	µg/Kg
2-Chloronaphthalene	660	µg/Kg	<	660	µg/Kg
4-Chlorophenylphenyl ether	660	µg/Kg	<	660	µg/Kg
Chrysene	660	µg/Kg	<	660	µg/Kg
Dibenz(a,h)anthracene	660	µg/Kg	<	660	µg/Kg
Di-n-butylphthalate	660	µg/Kg	<	660	µg/Kg
1,3-Dichlorobenzene	660	µg/Kg	<	660	µg/Kg
1,4-Dichlorobenzene	660	µg/Kg	<	660	µg/Kg
1,2-Dichlorobenzene	660	µg/Kg	<	660	µg/Kg
3,3'-Dichlorobenzidine	1300	µg/Kg	<	1300	µg/Kg
Diethylphthalate	660	µg/Kg	<	660	µg/Kg
Dimethylphthalate	660	µg/Kg	<	660	µg/Kg
2,4-Dinitrotoluene	660	µg/Kg	<	660	µg/Kg
2,6-Dinitrotoluene	660	µg/Kg	<	660	µg/Kg
Di-n-octylphthalate	660	µg/Kg	<	660	µg/Kg
Fluoranthene	660	µg/Kg	<	660	µg/Kg

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REPORT NUMBER: D90-31114

TEST REQUESTED	DETECTION LIMIT			RESULTS	
EPA 8270 (Continued) Base-Neutral Extractable Organics					
Fluorene	660	µg/Kg	<	660	µg/Kg
Hexachlorobenzene	660	µg/Kg	<	660	µg/Kg
Hexachlorobutadiene	660	µg/Kg	<	660	µg/Kg
Hexachlorocyclobutandiene	660	µg/Kg	<	660	µg/Kg
Hexachloroethane	660	µg/Kg	<	660	µg/Kg
Indeno(1,2,3-cd)pyrene	660	µg/Kg	<	660	µg/Kg
Isophorone	660	µg/Kg	<	660	µg/Kg
Naphthalene	660	µg/Kg	<	660	µg/Kg
Nitrobenzene	660	µg/Kg	<	660	µg/Kg
N-Nitrosodimethylamine	660	µg/Kg	<	660	µg/Kg
N-Nitrosodiphenylamine	660	µg/Kg	<	660	µg/Kg
N-Nitrosodipropylamine	660	µg/Kg	<	660	µg/Kg
Phenanthrene	660	µg/Kg	<	660	µg/Kg
Pyrene	660	µg/Kg	<	660	µg/Kg
1,2,4-Trichlorobenzene	660	µg/Kg	<	660	µg/Kg

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE LEVEL(µg/Kg)	PERCENT RECOVERED
Nitrobenzene-d5 (SS)	50	52.7
2-Fluorobenzene (SS)	50	90.4
Terphenyl-d14 (SS)	50	85.4

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Chief Executive Officer

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DATE RECEIVED: 6-DEC-1990

REPORT NUMBER: D90-31114
REPORT DATE: 3-JAN-1991

SAMPLE SUBMITTED BY: US Army Corp of Engineers
ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Cathy Hutchins

SAMPLE MATRIX: SOIL
ID MARKS: T206 0-3916

TENTATIVELY IDENTIFIED COMPOUNDS

COMPOUND	RETENTION TIME	FRACTION	RESULTS	
Tentatively Identified Compounds - ABN				
No compounds detected		ABN	660	µg/Kg

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DATE RECEIVED: 6-DEC-1990

REPORT NUMBER: D90-31114
REPORT DATE: 3-JAN-1991

SAMPLE SUBMITTED BY: US Army Corp of Engineers
ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Cathy Hutchins

SAMPLE MATRIX: SOIL
ID MARKS: T206 0-3916

TENTATIVELY IDENTIFIED COMPOUNDS

COMPOUND	RETENTION TIME	FRACTION	RESULTS	
Tentatively Identified Compounds - VOA				
No compounds detected		VOA	10	µg/kg

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DATE RECEIVED: 6-DEC-1990

REPORT NUMBER: D90-31114
REPORT DATE: 7-JAN-1991

SAMPLE SUBMITTED BY: US Army Corp of Engineers
ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Cathy Hutchins

SAMPLE MATRIX: SOIL
ID MARKS: T206 0-3916

TEST REQUESTED	DETECTION LIMIT			RESULTS	
Organochlorine Pesticides and PCB's					
Aldrin	27	µg/Kg	<	27	µg/Kg
Alpha-BHC	20	µg/Kg	<	20	µg/Kg
Beta-BHC	40	µg/Kg	<	40	µg/Kg
Delta-BHC	60	µg/Kg	<	60	µg/Kg
Gamma-BHC(Lindane)	26	µg/Kg	<	26	µg/Kg
Chlordane	93	µg/Kg	<	93	µg/Kg
4,4'-DDD	73	µg/Kg	<	73	µg/Kg
4,4'-DDE	26	µg/Kg	<	26	µg/Kg
4,4'-DDT	80	µg/Kg	<	80	µg/Kg
Dieldrin	13	µg/Kg	<	13	µg/Kg
Endosulfan I	93	µg/Kg	<	93	µg/Kg
Endosulfan II	26	µg/Kg	<	26	µg/Kg
Endosulfan Sulfate	442	µg/Kg	<	442	µg/Kg
Endrin	40	µg/Kg	<	40	µg/Kg
Endrin Aldehyde	154	µg/Kg	<	154	µg/Kg
Heptachlor	20	µg/Kg	<	20	µg/Kg
Heptachlor Epoxide	556	µg/Kg	<	556	µg/Kg
Methoxychlor	1210	µg/Kg	<	1210	µg/Kg
Toxaphene	1610	µg/Kg	<	1610	µg/Kg
Arochlor-1016	67	µg/Kg	<	67	µg/Kg
Arochlor-1221	67	µg/Kg	<	67	µg/Kg
Arochlor-1232	67	µg/Kg	<	67	µg/Kg
Arochlor-1242	67	µg/Kg	<	67	µg/Kg
Arochlor-1248	67	µg/Kg	<	67	µg/Kg
Arochlor-1254	67	µg/Kg	<	67	µg/Kg
Arochlor-1260	67	µg/Kg	<	67	µg/Kg

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DATE RECEIVED: 6-DEC-1990

REPORT NUMBER: D90-31115
REPORT DATE: 3-JAN-1991

SAMPLE SUBMITTED BY: US Army Corp of Engineers
ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Cathy Hutchins

SAMPLE MATRIX: SOIL
ID MARKS: T207 0-3917

TEST REQUESTED	DETECTION LIMIT			RESULTS	
TOTAL METALS:					
Silver	1.0	mg/Kg	<	1.0	mg/Kg
Arsenic	0.1	mg/Kg		1.7	mg/Kg
Barium	1.0	mg/Kg		121	mg/Kg
Beryllium	1.0	mg/Kg	<	1.0	mg/Kg
Cadmium	1.0	mg/Kg		2.9	mg/Kg
Cobalt	1.0	mg/Kg		3.3	mg/Kg
Chromium	1.0	mg/Kg		9.6	mg/Kg
Copper	1.0	mg/Kg		4.5	mg/Kg
Mercury	0.01	mg/Kg		0.01	mg/Kg
Manganese	1.0	mg/Kg		57.0	mg/Kg
Molybdenum	1.0	mg/Kg		47.8	mg/Kg
Nickel	1.0	mg/Kg		7.1	mg/Kg
Lead	1.0	mg/Kg	<	1.0	mg/Kg
Antimony	1.0	mg/Kg	<	1.0	mg/Kg
Selenium	0.1	mg/Kg		1.6	mg/Kg
Thallium	1.0	mg/Kg	<	1.0	mg/Kg
Vanadium	1.0	mg/Kg		17.7	mg/Kg
Zinc	1.0	mg/Kg		19.6	mg/Kg

NDRC Laboratories, Inc. David R. Godwin, Ph.D.
David R. Godwin, Ph.D.
Chief Executive Officer

CANNON AFB
ASBESTOS SAMPLE ANALYSIS
SWDED-GL REPORT NO. 15263

1. REFERENCE: Reference is made to Tulsa Test Request MIL 90-113 requesting testing of possible asbestos samples.

2. SAMPLES: On December 5 and 10, 1990 nine bulk samples were received for analysis by Polarized Light Microscopy.

SWD LAB NO.	FIELD SAMPLE NO.	LOCATION	TOTAL VOLUME (liters)
A-1413	T-101	Rubble Pile - Trench 1	N/A
A-1414	T-301	Rubble Pile - Trench 3	N/A
A-1417	T-201	Rubble Pile - Trench 2	N/A
A-1418	T-401	Rubble Pile - Trench 4	N/A
A-1419	T-501	Rubble Pile - Trench 5	N/A
A-1420	T-501QC	Rubble Pile - Trench 5	N/A
A-1421	T-601	Rubble Pile - Trench 6	N/A
A-1422	T-701	Rubble Pile - Trench 7	N/A
A-1423	T-801	Rubble Pile - Trench 8	N/A

3. RESULTS OF PLM ANALYSIS:

SWD LAB NO.	FIELD SAMPLE NO.	TYPE MATERIAL	ASBESTOS TYPE	PERCENT ASBESTOS
A-1413	T-101	Soil	Actinolite	Trace
A-1414	T-301	Soil	None	Detected
A-1417	T-201	Soil	None	Detected
A-1418	T-401	Soil	None	Detected
A-1419	T-501	Soil	None	Detected
A-1420	T-501QC	Soil	None	Detected
A-1421	T-601	Soil	None	Detected
A-1422	T-701	Soil	None	Detected
A-1423	T-801	Soil	None	Detected

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DATE RECEIVED: 5-DEC-1990

REPORT NUMBER: D90-30985
REPORT DATE: 3-JAN-1991

SAMPLE SUBMITTED BY: US Army Corp of Engineers
ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Janice Stewart

SAMPLE MATRIX: SOIL
ID MARKS: T-302 0-3894

TEST REQUESTED	DETECTION LIMIT			RESULTS	
PCB by EPA Method 8080					
Arochlor 1016	0.1	mg/Kg	<	0.1	mg/Kg
Arochlor 1221	0.1	mg/Kg	<	0.1	mg/Kg
Arochlor 1232	0.1	mg/Kg	<	0.1	mg/Kg
Arochlor 1242	0.1	mg/Kg	<	0.1	mg/Kg
Arochlor 1248	0.1	mg/Kg	<	0.1	mg/Kg
Arochlor 1254	0.1	mg/Kg	<	0.1	mg/Kg
Arochlor 1260	0.1	mg/Kg	<	0.1	mg/Kg

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David R. Godwin, Ph.D.
Chief Executive Officer

Primavera - 127011 (IA OFF POST WELL LEASES)

File Edit View Project Enterprise Tools Admin Help

Activities

Back Forward Home Dir Help

Projects | Resources | Reports | Tracking | WBS | Activities | Assignments | WPs & Docs | Expenses | Thresholds | Issues | Risks

✓ Layout: *PM Statusing | Filter: All Activities

Activity ID	Activity Name	Activity Type	Activity Status	Percent Complete Type
127011 IA OFF POST WELL LEASES				
127011.07000 Off-Post GW Monitoring Well Leases				
A1000	IAAAP Lease Payments	Task Dependent	In Progress	Physical
A1010	Real Estate Labor	Task Dependent	In Progress	Physical

Qtr 1, 2006 | Qtr 1, 2007 | Qtr 2, 2007 | Qtr 3, 2007 | Qtr 4, 2007 | Qtr 1, 2008

Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jan Feb Mar

Add | Delete | Cut | Copy | Paste | Resources | Rsrc by Role | Roles | Activity Codes | Predecessors | Successors | Steps

Schedule

Project(s) to schedule: 1

Current Data Date: 16-Jul-07

Project Forecast Start Date:

☐ Set Data Date and Planned Start to Project Forecast Start during scheduling

☐ Log to file

M:\Program Files\Primavera Enterprise\Project Manager\S

Cancel | Schedule | View Log | Help | Options...

General | Status | Resources | Relationships | Steps

Activity: A1010 Real Estate Labor | Project: 127011

Resource ID Name	Rate Source	Rate Type	Price / Unit	Start	Finish	Bud Units	Bud Cost	Act Units	Act Cost	Rem Units	Rem Cost	At Compl Cost
G6H4HA0-PROJECT MGMT.G6H4	Override		$114.78/h	28-Mar-05 A	01-Oct-08	8.71h	$1,000.00	0.00h	$0.00	4.36h	$500.00	$500.00
G6N0A00-MILITARY BRA.G6N0A	Override		$31.64/h	28-Mar-05 A	01-Oct-08	126.42h	$4,000.00	59.56h	$1,884.54	66.86h	$2,115.46	$4,000.00
G6N0AL0-LEASING & PU.G6N0A	Override		$50.43/h	28-Mar-05 A	01-Oct-08	39.68h	$2,000.00	0.00h	$0.00	0.00h	$0.00	$0.00
G6N0B00-TECHNICAL SE.G6N0E	Override		$84.13/h	28-Mar-05 A	01-Oct-08	11.89h	$1,000.00	2.31h	$194.76	9.57h	$805.24	$1,000.00

Add Resource | Add Role | Assign by Role | Remove

Portfolio: All Projects | User: g6mdxkmh | Data Date: 16-Jul-07 | Access Mode: Shared | Baseline: Current Project

start | Inbox - Microsoft Out... | M:\WINDOWS\syste... | Primavera Project Ma... | USACE PMBP Portal - ... | 4:52 PM

Monday, Jul 16, 2007 04:52 PM

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DATE RECEIVED: 5-DEC-1990

REPORT NUMBER: D90-30985
REPORT DATE: 3-JAN-1991

SAMPLE SUBMITTED BY: US Army Corp of Engineers
ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Janice Stewart

SAMPLE MATRIX: SOIL
ID MARKS: T-302 0-3894

TEST REQUESTED	DETECTION LIMIT			RESULTS	
PCB by EPA Method 8080					
Arochlor 1016	0.1	mg/Kg	<	0.1	mg/Kg
Arochlor 1221	0.1	mg/Kg	<	0.1	mg/Kg
Arochlor 1232	0.1	mg/Kg	<	0.1	mg/Kg
Arochlor 1242	0.1	mg/Kg	<	0.1	mg/Kg
Arochlor 1248	0.1	mg/Kg	<	0.1	mg/Kg
Arochlor 1254	0.1	mg/Kg	<	0.1	mg/Kg
Arochlor 1260	0.1	mg/Kg	<	0.1	mg/Kg

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David R. Godwin, Ph.D.
Chief Executive Officer

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DATE RECEIVED: 5-DEC-1990

REPORT NUMBER: D90-30986
REPORT DATE: 3-JAN-1991

SAMPLE SUBMITTED BY: US Army Corp of Engineers
ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Janice Stewart

SAMPLE MATRIX: SOIL
ID MARKS: T-303 0-3895

TEST REQUESTED	DETECTION LIMIT			RESULTS	
EPA 8270 TCLP - Extractable Organics					
o-Cresol	0.08	mg/L	<	0.08	mg/L
m-Cresol	0.08	mg/L	<	0.08	mg/L
p-Cresol	0.08	mg/L	<	0.08	mg/L
2,4-Dinitrotoluene	0.04	mg/L	<	0.04	mg/L
Hexachlorobenzene	0.04	mg/L	<	0.04	mg/L
Hexachlorobutadiene	0.04	mg/L	<	0.04	mg/L
Hexachloroethane	0.04	mg/L	<	0.04	mg/L
Nitrobenzene	0.04	mg/L	<	0.04	mg/L
Pentachlorophenol	0.20	mg/L	<	0.20	mg/L
Pyridine	0.04	mg/L	<	0.04	mg/L
2,4,5-Trichlorophenol	0.04	mg/L	<	0.04	mg/L
2,4,6-Trichlorophenol	0.04	mg/L	<	0.04	mg/L

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE LEVEL(µg/L)	PERCENT RECOVERED
Nitrobenzene-d5(SS)	50	52.1
2-Fluorobiphenyl(SS)	50	68.9
Terphenyl-d14(SS)	50	82.9
Phenol-d6(SS)	100	23.8
2-Fluorophenol(SS)	100	35.3
2,4,6-Tribromophenol(SS)	100	59.5

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ATTENTION: Ms. Janice Stewart

SAMPLE MATRIX: SOIL
ID MARKS: T-303 0-3895

TEST REQUESTED	DETECTION LIMIT			RESULTS	
EPA 8240 TCLP - Volatile Organics					
Benzene	0.01	mg/L	<	0.01	mg/L
Carbon tetrachloride	0.01	mg/L	<	0.01	mg/L
Chlorobenzene	0.01	mg/L	<	0.01	mg/L
Chloroform	0.01	mg/L	<	0.01	mg/L
1,4-Dichlorobenzene	0.01	mg/L	<	0.01	mg/L
1,2-Dichloroethane	0.01	mg/L	<	0.01	mg/L
1,1-Dichloroethene	0.01	mg/L	<	0.01	mg/L
Methyl ethyl ketone	0.05	mg/L	<	0.05	mg/L
Tetrachloroethene	0.01	mg/L	<	0.01	mg/L
Trichloroethene	0.01	mg/L	<	0.01	mg/L
Vinyl chloride	0.02	mg/L	<	0.02	mg/L

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE LEVEL(µg/L)	PERCENT RECOVERED
1,2-Dichloroethane-d4(SS)	50	114
Toluene-d8(SS)	50	98.5
Bromofluorobenzene(SS)	50	91.1

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ATTENTION: Ms. Janice Stewart

SAMPLE MATRIX: SOIL
ID MARKS: T-303 0-3895

TEST REQUESTED	DETECTION LIMIT		RESULTS		
TCLP Herbicides					
2,4-D	5.0	mg/L	<	5.0	mg/L
2,4,5-TP Silvex	0.5	mg/L	<	0.5	mg/L

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SAMPLE MATRIX: SOIL
ID MARKS: T-303 0-3895

TEST REQUESTED	DETECTION LIMIT		RESULTS		
TCLP Pesticides					
Chlordane	0.014	mg/L	<	0.014	mg/L
Heptachlor	0.0030	mg/L	<	0.0030	mg/L
Heptachlor epoxide	0.0830	mg/L	<	0.0830	mg/L
Endrin	0.006	mg/L	<	0.006	mg/L
Lindane	0.004	mg/L	<	0.004	mg/L
Methoxychlor	0.18	mg/L	<	0.18	mg/L
Toxaphene	0.24	mg/L	<	0.24	mg/L

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SAMPLE MATRIX: SOIL
ID MARKS: T-303 0-3895

TEST REQUESTED	DETECTION LIMIT			RESULTS	
TCLP METALS:					
Silver	0.01	mg/L	<	0.01	mg/L
Arsenic	0.05	mg/L	<	0.05	mg/L
Barium	0.1	mg/L		1.3	mg/L
Cadmium	0.01	mg/L		0.01	mg/L
Chromium	0.05	mg/L	<	0.05	mg/L
Mercury	0.001	mg/L	<	0.001	mg/L
Lead	0.02	mg/L	<	0.02	mg/L
Selenium	0.05	mg/L	<	0.05	mg/L

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DATE RECEIVED: 5-DEC-1990

REPORT NUMBER: D90-30987
REPORT DATE: 3-JAN-1991

SAMPLE SUBMITTED BY: US Army Corp of Engineers
ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Janice Stewart

SAMPLE MATRIX: SOIL
ID MARKS: T-304 0-3896

TEST REQUESTED	DETECTION LIMIT			RESULTS	
EPA 8240 Volatile Organics					
Acrolein	10.0	µg/Kg	<	10.0	µg/Kg
Acrylonitrile	10.0	µg/Kg	<	10.0	µg/Kg
Benzene	5.0	µg/Kg	<	5.0	µg/Kg
Bromodichloromethane	5.0	µg/Kg	<	5.0	µg/Kg
Bromoform	5.0	µg/Kg	<	5.0	µg/Kg
Bromomethane	10.0	µg/Kg	<	10.0	µg/Kg
Carbon tetrachloride	5.0	µg/Kg	<	5.0	µg/Kg
Chlorobenzene	5.0	µg/Kg	<	5.0	µg/Kg
Chlorodibromomethane	5.0	µg/Kg	<	5.0	µg/Kg
Chloroethane	10.0	µg/Kg	<	10.0	µg/Kg
2-Chloroethyvinyl ether	10.0	µg/Kg	<	10.0	µg/Kg
Chloroform	5.0	µg/Kg	<	5.0	µg/Kg
Chloromethane	10.0	µg/Kg	<	10.0	µg/Kg
1,2-Dichlorobenzene	5.0	µg/Kg	<	5.0	µg/Kg
1,3-Dichlorobenzene	5.0	µg/Kg	<	5.0	µg/Kg
1,4-Dichlorobenzene	5.0	µg/Kg	<	5.0	µg/Kg
1,1-Dichloroethane	5.0	µg/Kg	<	5.0	µg/Kg
1,2-Dichloroethane	5.0	µg/Kg	<	5.0	µg/Kg
1,1-Dichloroethene	5.0	µg/Kg	<	5.0	µg/Kg
trans-1,2-Dichloroethene	5.0	µg/Kg	<	5.0	µg/Kg
1,2-Dichloropropane	5.0	µg/Kg	<	5.0	µg/Kg
cis-1,3-Dichloropropene	5.0	µg/Kg	<	5.0	µg/Kg
trans-1,3 Dichloropropene	5.0	µg/Kg	<	5.0	µg/Kg
Ethylbenzene	5.0	µg/Kg	<	5.0	µg/Kg
Methylene chloride	10.0	µg/Kg	<	10.0	µg/Kg
1,1,2,2-Tetrachloroethane	5.0	µg/Kg	<	5.0	µg/Kg
Tetrachloroethene	5.0	µg/Kg	<	5.0	µg/Kg
Toluene	5.0	µg/Kg	<	5.0	µg/Kg
1,1,1-Trichloroethane	5.0	µg/Kg	<	5.0	µg/Kg
1,1,2-Trichloroethane	5.0	µg/Kg	<	5.0	µg/Kg

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REPORT NUMBER: D90-30987

TEST REQUESTED	DETECTION LIMIT			RESULTS	
EPA 8240 (Continued) Volatile Organics					
Trichloroethene	5.0	µg/Kg	<	5.0	µg/Kg
Trichlorofluoromethane	10.0	µg/Kg	<	10.0	µg/Kg
Vinyl chloride	10.0	µg/Kg	<	10.0	µg/Kg
Xylenes	5.0	µg/Kg	<	5.0	µg/Kg

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE LEVEL(µg/Kg)	PERCENT RECOVERED
1,2-Dichloroethane-d4 (SS)	50	112
Toluene-d8 (SS)	50	98.6
Bromofluorobenzene (SS)	50	85.2

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ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Janice Stewart

SAMPLE MATRIX: SOIL
ID MARKS: T-304 0-3896

TEST REQUESTED	DETECTION LIMIT		RESULTS		
EPA 8270 Acid Extractable Organics					
4-Chloro-3-methylphenol	660	µg/Kg	<	660	µg/Kg
2-Chlorophenol	660	µg/Kg	<	660	µg/Kg
2,4-Dichlorophenol	660	µg/Kg	<	660	µg/Kg
2,4-Dimethylphenol	660	µg/Kg	<	660	µg/Kg
4,6-Dinitro-2-methylphenol	660	µg/Kg	<	660	µg/Kg
2,4-Dinitrophenol	3300	µg/Kg	<	3300	µg/Kg
2-Methylphenol	660	µg/Kg	<	660	µg/Kg
2-Nitrophenol	660	µg/Kg	<	660	µg/Kg
4-Nitrophenol	3300	µg/Kg	<	3300	µg/Kg
Pentachlorophenol	3300	µg/Kg	<	3300	µg/Kg
Phenol	660	µg/Kg	<	660	µg/Kg
2,4,6-Trichlorophenol	660	µg/Kg	<	660	µg/Kg

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE LEVEL(µg/Kg)	PERCENT RECOVERED
Phenol-d5 (SS)	100	74.3
2-Fluorophenol (SS)	100	70.2
2,4,6-Tribromophenol (SS)	100	50.3

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ADDRESS: 4815 Cass St.
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ATTENTION: Ms. Janice Stewart

SAMPLE MATRIX: SOIL
ID MARKS: T-304 0-3896

TEST REQUESTED	DETECTION LIMIT			RESULTS	
EPA 8270 Base-Neutral Extractable Organics					
Acenaphthene	660	µg/Kg	<	660	µg/Kg
Acenaphthylene	660	µg/Kg	<	660	µg/Kg
Anthracene	660	µg/Kg	<	660	µg/Kg
Benzidine	660	µg/Kg	<	660	µg/Kg
Benzo(a)anthracene	660	µg/Kg	<	660	µg/Kg
Benzo(b)fluoranthene	660	µg/Kg	<	660	µg/Kg
Benzo(k)fluoranthene	660	µg/Kg	<	660	µg/Kg
Benzo(g,h,i)perylene	660	µg/Kg	<	660	µg/Kg
Benzo(a)pyrene	660	µg/Kg	<	660	µg/Kg
Bis(2-chloroethoxy)methane	660	µg/Kg	<	660	µg/Kg
Bis(2-chloroethyl)ether	660	µg/Kg	<	660	µg/Kg
Bis(2-chloroisopropyl)ether	660	µg/Kg	<	660	µg/Kg
Bis(2-ethylhexyl)phthalate	660	µg/Kg	<	660	µg/Kg
4-Bromophenylphenyl ether	660	µg/Kg	<	660	µg/Kg
Butyl benzyl phthalate	660	µg/Kg	<	660	µg/Kg
2-Chloronaphthalene	660	µg/Kg	<	660	µg/Kg
4-Chlorophenylphenyl ether	660	µg/Kg	<	660	µg/Kg
Chrysene	660	µg/Kg	<	660	µg/Kg
Dibenz(a,h)anthracene	660	µg/Kg	<	660	µg/Kg
Di-n-butylphthalate	660	µg/Kg	<	660	µg/Kg
1,3-Dichlorobenzene	660	µg/Kg	<	660	µg/Kg
1,4-Dichlorobenzene	660	µg/Kg	<	660	µg/Kg
1,2-Dichlorobenzene	660	µg/Kg	<	660	µg/Kg
3,3'-Dichlorobenzidine	1300	µg/Kg	<	1300	µg/Kg
Diethylphthalate	660	µg/Kg	<	660	µg/Kg
Dimethylphthalate	660	µg/Kg	<	660	µg/Kg
2,4-Dinitrotoluene	660	µg/Kg	<	660	µg/Kg
2,6-Dinitrotoluene	660	µg/Kg	<	660	µg/Kg
Di-n-octylphthalate	660	µg/Kg	<	660	µg/Kg
Fluoranthene	660	µg/Kg	<	660	µg/Kg

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REPORT NUMBER: D90-30987

TEST REQUESTED	DETECTION LIMIT			RESULTS	
EPA 8270 (Continued) Base-Neutral Extractable Organics					
Fluorene	660	µg/Kg	<	660	µg/Kg
Hexachlorobenzene	660	µg/Kg	<	660	µg/Kg
Hexachlorobutadiene	660	µg/Kg	<	660	µg/Kg
Hexachlorocyclobutandiene	660	µg/Kg	<	660	µg/Kg
Hexachloroethane	660	µg/Kg	<	660	µg/Kg
Indeno(1,2,3-cd)pyrene	660	µg/Kg	<	660	µg/Kg
Isophorone	660	µg/Kg	<	660	µg/Kg
Naphthalene	660	µg/Kg	<	660	µg/Kg
Nitrobenzene	660	µg/Kg	<	660	µg/Kg
N-Nitrosodimethylamine	660	µg/Kg	<	660	µg/Kg
N-Nitrosodiphenylamine	660	µg/Kg	<	660	µg/Kg
N-Nitrosodipropylamine	660	µg/Kg	<	660	µg/Kg
Phenanthrene	660	µg/Kg	<	660	µg/Kg
Pyrene	660	µg/Kg	<	660	µg/Kg
1,2,4-Trichlorobenzene	660	µg/Kg	<	660	µg/Kg

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE LEVEL (µg/Kg)	PERCENT RECOVERED
Nitrobenzene-d5 (SS)	50	62.3
2-Fluorobenzene (SS)	50	73.2
Terphenyl-d14 (SS)	50	81.9

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ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Janice Stewart

SAMPLE MATRIX: SOIL
ID MARKS: T-304 0-3896

TENTATIVELY IDENTIFIED COMPOUNDS

COMPOUND	RETENTION TIME	FRACTION	RESULTS	
Tentatively Identified Compounds - ABN				
No compounds detected		ABN	660	µg/Kg

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SAMPLE MATRIX: SOIL
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TENTATIVELY IDENTIFIED COMPOUNDS

COMPOUND	RETENTION TIME	FRACTION	RESULTS	
Tentatively Identified Compounds - VOA				
No compounds detected		VOA	10	µg/Kg

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DATE RECEIVED: 5-DEC-1990

REPORT NUMBER: D90-30987
REPORT DATE: 3-JAN-1991

SAMPLE SUBMITTED BY: US Army Corp of Engineers
ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Janice Stewart

SAMPLE MATRIX: SOIL
ID MARKS: T-304 0-3896

TEST REQUESTED	DETECTION LIMIT			RESULTS	
Organochlorine Pesticides and PCB's					
Aldrin	2.7	µg/Kg	<	2.7	µg/Kg
Alpha-BHC	2.0	µg/Kg	<	2.0	µg/Kg
Beta-BHC	4.0	µg/Kg	<	4.0	µg/Kg
Delta-BHC	6.0	µg/Kg	<	6.0	µg/Kg
Gamma-BHC(Lindane)	2.6	µg/Kg	<	2.6	µg/Kg
Chlordane	9.3	µg/Kg	<	9.3	µg/Kg
4,4'-DDD	7.3	µg/Kg	<	7.3	µg/Kg
4,4'-DDE	2.6	µg/Kg	<	2.6	µg/Kg
4,4'-DDT	8.0	µg/Kg	<	8.0	µg/Kg
Dieldrin	1.3	µg/Kg	<	1.3	µg/Kg
Endosulfan I	9.3	µg/Kg	<	9.3	µg/Kg
Endosulfan II	2.6	µg/Kg	<	2.6	µg/Kg
Endosulfan Sulfate	44.2	µg/Kg	<	44.2	µg/Kg
Endrin	4.0	µg/Kg	<	4.0	µg/Kg
Endrin Aldehyde	15.4	µg/Kg	<	15.4	µg/Kg
Heptachlor	2.0	µg/Kg	<	2.0	µg/Kg
Heptachlor Epoxide	55.6	µg/Kg	<	55.6	µg/Kg
Methoxychlor	121	µg/Kg	<	121	µg/Kg
Toxaphene	161	µg/Kg	<	161	µg/Kg
Arochlor-1016	6	µg/Kg	<	6	µg/Kg
Arochlor-1221	6	µg/Kg	<	6	µg/Kg
Arochlor-1232	6	µg/Kg	<	6	µg/Kg
Arochlor-1242	6	µg/Kg	<	6	µg/Kg
Arochlor-1248	6	µg/Kg	<	6	µg/Kg
Arochlor-1254	6	µg/Kg	<	6	µg/Kg
Arochlor-1260	6	µg/Kg	<	6	µg/Kg

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David R. Godwin, Ph.D.
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DATE RECEIVED: 5-DEC-1990

REPORT NUMBER: D90-30988
REPORT DATE: 3-JAN-1991

SAMPLE SUBMITTED BY: US Army Corp of Engineers
ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Janice Stewart

SAMPLE MATRIX: SOIL
ID MARKS: T-305 0-3897

TEST REQUESTED	DETECTION LIMIT			RESULTS	
TOTAL METALS:					
Silver	1.0	mg/Kg	<	1.0	mg/Kg
Arsenic	0.1	mg/Kg		1.7	mg/Kg
Barium	1.0	mg/Kg		82.1	mg/Kg
Cadmium	1.0	mg/Kg		8.5	mg/Kg
Chromium	1.0	mg/Kg		10.3	mg/Kg
Mercury	0.01	mg/Kg		0.02	mg/Kg
Lead	1.0	mg/Kg	<	1.0	mg/Kg
Selenium	0.1	mg/Kg		0.6	mg/Kg

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DATE RECEIVED: 5-DEC-1990

REPORT NUMBER: D90-30989
REPORT DATE: 3-JAN-1991

SAMPLE SUBMITTED BY: US Army Corp of Engineers
ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Janice Stewart

SAMPLE MATRIX: SOIL
ID MARKS: T-306 0-3898

TEST REQUESTED	DETECTION LIMIT			RESULTS	
EPA 8240 Volatile Organics					
Acrolein	10.0	µg/Kg	<	10.0	µg/Kg
Acrylonitrile	10.0	µg/Kg	<	10.0	µg/Kg
Benzene	5.0	µg/Kg	<	5.0	µg/Kg
Bromodichloromethane	5.0	µg/Kg	<	5.0	µg/Kg
Bromoform	5.0	µg/Kg	<	5.0	µg/Kg
Bromomethane	10.0	µg/Kg	<	10.0	µg/Kg
Carbon tetrachloride	5.0	µg/Kg	<	5.0	µg/Kg
Chlorobenzene	5.0	µg/Kg	<	5.0	µg/Kg
Chlorodibromomethane	5.0	µg/Kg	<	5.0	µg/Kg
Chloroethane	10.0	µg/Kg	<	10.0	µg/Kg
2-Chloroethyvinyl ether	10.0	µg/Kg	<	10.0	µg/Kg
Chloroform	5.0	µg/Kg	<	5.0	µg/Kg
Chloromethane	10.0	µg/Kg	<	10.0	µg/Kg
1,2-Dichlorobenzene	5.0	µg/Kg	<	5.0	µg/Kg
1,3-Dichlorobenzene	5.0	µg/Kg	<	5.0	µg/Kg
1,4-Dichlorobenzene	5.0	µg/Kg	<	5.0	µg/Kg
1,1-Dichloroethane	5.0	µg/Kg	<	5.0	µg/Kg
1,2-Dichloroethane	5.0	µg/Kg	<	5.0	µg/Kg
1,1-Dichloroethene	5.0	µg/Kg	<	5.0	µg/Kg
trans-1,2-Dichloroethene	5.0	µg/Kg	<	5.0	µg/Kg
1,2-Dichloropropane	5.0	µg/Kg	<	5.0	µg/Kg
cis-1,3-Dichloropropene	5.0	µg/Kg	<	5.0	µg/Kg
trans-1,3 Dichloropropene	5.0	µg/Kg	<	5.0	µg/Kg
Ethylbenzene	5.0	µg/Kg	<	5.0	µg/Kg
Methylene chloride	10.0	µg/Kg	<	10.0	µg/Kg
1,1,2,2-Tetrachloroethane	5.0	µg/Kg	<	5.0	µg/Kg
Tetrachloroethene	5.0	µg/Kg	<	5.0	µg/Kg
Toluene	5.0	µg/Kg	<	5.0	µg/Kg
1,1,1-Trichloroethane	5.0	µg/Kg	<	5.0	µg/Kg
1,1,2-Trichloroethane	5.0	µg/Kg	<	5.0	µg/Kg

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REPORT NUMBER: D90-30989

TEST REQUESTED	DETECTION LIMIT			RESULTS	
EPA 8240 (Continued) Volatile Organics					
Trichloroethene	5.0	µg/Kg	<	5.0	µg/Kg
Trichlorofluoromethane	10.0	µg/Kg	<	10.0	µg/Kg
Vinyl chloride	10.0	µg/Kg	<	10.0	µg/Kg
Xylenes	5.0	µg/Kg	<	5.0	µg/Kg

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE LEVEL(µg/Kg)	PERCENT RECOVERED
1,2-Dichloroethane-d4 (SS)	50	114
Toluene-d8 (SS)	50	99.2
Bromofluorobenzene (SS)	50	78.2

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DATE RECEIVED: 5-DEC-1990

REPORT NUMBER: D90-30989
REPORT DATE: 3-JAN-1991

SAMPLE SUBMITTED BY: US Army Corp of Engineers
ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Janice Stewart

SAMPLE MATRIX: SOIL
ID MARKS: T-306 0-3898

TEST REQUESTED	DETECTION LIMIT			RESULTS	
EPA 8270 Acid Extractable Organics					
4-Chloro-3-methylphenol	660	µg/Kg	<	660	µg/Kg
2-Chlorophenol	660	µg/Kg	<	660	µg/Kg
2,4-Dichlorophenol	660	µg/Kg	<	660	µg/Kg
2,4-Dimethylphenol	660	µg/Kg	<	660	µg/Kg
4,6-Dinitro-2-methylphenol	660	µg/Kg	<	660	µg/Kg
2,4-Dinitrophenol	3300	µg/Kg	<	3300	µg/Kg
2-Methylphenol	660	µg/Kg	<	660	µg/Kg
2-Nitrophenol	660	µg/Kg	<	660	µg/Kg
4-Nitrophenol	3300	µg/Kg	<	3300	µg/Kg
Pentachlorophenol	3300	µg/Kg	<	3300	µg/Kg
Phenol	660	µg/Kg	<	660	µg/Kg
2,4,6-Trichlorophenol	660	µg/Kg	<	660	µg/Kg

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE LEVEL(µg/Kg)	PERCENT RECOVERED
Phenol-d5 (SS)	100	67.8
2-Fluorophenol (SS)	100	60.6
2,4,6-Tribromophenol (SS)	100	42.6

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REPORT DATE: 3-JAN-1991

SAMPLE SUBMITTED BY: US Army Corp of Engineers
ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Janice Stewart

SAMPLE MATRIX: SOIL
ID MARKS: T-306 0-3898

TEST REQUESTED	DETECTION LIMIT			RESULTS	
EPA 8270 Base-Neutral Extractable Organics					
Acenaphthene	660	µg/Kg	<	660	µg/Kg
Acenaphthylene	660	µg/Kg	<	660	µg/Kg
Anthracene	660	µg/Kg	<	660	µg/Kg
Benzidine	660	µg/Kg		2000	µg/Kg
Benzo(a)anthracene	660	µg/Kg	<	660	µg/Kg
Benzo(b)fluoranthene	660	µg/Kg	<	660	µg/Kg
Benzo(k)fluoranthene	660	µg/Kg	<	660	µg/Kg
Benzo(g,h,i)perylene	660	µg/Kg	<	660	µg/Kg
Benzo(a)pyrene	660	µg/Kg	<	660	µg/Kg
Bis(2-chloroethoxy)methane	660	µg/Kg	<	660	µg/Kg
Bis(2-chloroethyl)ether	660	µg/Kg	<	660	µg/Kg
Bis(2-chloroisopropyl)ether	660	µg/Kg	<	660	µg/Kg
Bis(2-ethylhexyl)phthalate	660	µg/Kg	<	660	µg/Kg
4-Bromophenylphenyl ether	660	µg/Kg	<	660	µg/Kg
Butyl benzyl phthalate	660	µg/Kg	<	660	µg/Kg
2-Chloronaphthalene	660	µg/Kg	<	660	µg/Kg
4-Chlorophenylphenyl ether	660	µg/Kg	<	660	µg/Kg
Chrysene	660	µg/Kg	<	660	µg/Kg
Dibenz(a,h)anthracene	660	µg/Kg	<	660	µg/Kg
Di-n-butylphthalate	660	µg/Kg	<	660	µg/Kg
1,3-Dichlorobenzene	660	µg/Kg	<	660	µg/Kg
1,4-Dichlorobenzene	660	µg/Kg	<	660	µg/Kg
1,2-Dichlorobenzene	660	µg/Kg	<	660	µg/Kg
3,3'-Dichlorobenzidine	1300	µg/Kg	<	1300	µg/Kg
Diethylphthalate	660	µg/Kg	<	660	µg/Kg
Dimethylphthalate	660	µg/Kg	<	660	µg/Kg
2,4-Dinitrotoluene	660	µg/Kg	<	660	µg/Kg
2,6-Dinitrotoluene	660	µg/Kg	<	660	µg/Kg
Di-n-octylphthalate	660	µg/Kg	<	660	µg/Kg
Fluoranthene	660	µg/Kg	<	660	µg/Kg

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REPORT NUMBER: D90-30989

TEST REQUESTED	DETECTION LIMIT			RESULTS	
EPA 8270 (Continued) Base-Neutral Extractable Organics					
Fluorene	660	µg/Kg	<	660	µg/Kg
Hexachlorobenzene	660	µg/Kg	<	660	µg/Kg
Hexachlorobutadiene	660	µg/Kg	<	660	µg/Kg
Hexachlorocyclobutandiene	660	µg/Kg	<	660	µg/Kg
Hexachloroethane	660	µg/Kg	<	660	µg/Kg
Indeno(1,2,3-cd)pyrene	660	µg/Kg	<	660	µg/Kg
Isophorone	660	µg/Kg	<	660	µg/Kg
Naphthalene	660	µg/Kg	<	660	µg/Kg
Nitrobenzene	660	µg/Kg	<	660	µg/Kg
N-Nitrosodimethylamine	660	µg/Kg	<	660	µg/Kg
N-Nitrosodiphenylamine	660	µg/Kg	<	660	µg/Kg
N-Nitrosodipropylamine	660	µg/Kg	<	660	µg/Kg
Phenanthrene	660	µg/Kg	<	660	µg/Kg
Pyrene	660	µg/Kg	<	660	µg/Kg
1,2,4-Trichlorobenzene	660	µg/Kg	<	660	µg/Kg

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE LEVEL(µg/Kg)	PERCENT RECOVERED
Nitrobenzene-d5 (SS)	50	61.2
2-Fluorobenzene (SS)	50	63.6
Terphenyl-d14 (SS)	50	71.2

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DATE RECEIVED: 5-DEC-1990

REPORT NUMBER: D90-30989
REPORT DATE: 3-JAN-1991

SAMPLE SUBMITTED BY: US Army Corp of Engineers
ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Janice Stewart

SAMPLE MATRIX: SOIL
ID MARKS: T-306 0-3898

TENTATIVELY IDENTIFIED COMPOUNDS

COMPOUND	RETENTION TIME	FRACTION	RESULTS	
Tentatively Identified Compounds - ABN				
Phenol, 2,6-bis(1,1-dimethylethyl)	22.28	ABN	13000	µg/Kg
2-Methyl-6-propyldodecane	23.48	ABN	2000	µg/Kg
3-Methylhexadecane	25.00	ABN	1100	µg/Kg
7-Hexyltridecane	27.82	ABN	1600	µg/Kg
Eicosane	29.16	ABN	1900	µg/Kg
10-Methyleicosane	30.39	ABN	2600	µg/Kg
Tricosane	32.70	ABN	2100	µg/Kg
Tetracosane	33.78	ABN	1800	µg/Kg
Hexacosane	35.89	ABN	1400	µg/Kg
Octacosane	38.49	ABN	2900	µg/Kg
Unidentified aromatic hydrocarbon	38.60	ABN	5300	µg/Kg
Nonacosane	40.13	ABN	1700	µg/Kg
Unidentified cyclic hydrocarbon	46.64	ABN	3400	µg/Kg
Sitosterol	52.44	ABN	1900	µg/Kg

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REPORT NUMBER: D90-30989
REPORT DATE: 3-JAN-1991

SAMPLE SUBMITTED BY: US Army Corp of Engineers
ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Janice Stewart

SAMPLE MATRIX: SOIL
ID MARKS: T-306 0-3898

TENTATIVELY IDENTIFIED COMPOUNDS

COMPOUND	RETENTION TIME	FRACTION	RESULTS	
Tentatively Identified Compounds - VOA				
No compounds detected		VOA	10	µg/Kg

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REPORT NUMBER: D90-30989
REPORT DATE: 3-JAN-1991

SAMPLE SUBMITTED BY: US Army Corp of Engineers
ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Janice Stewart

SAMPLE MATRIX: SOIL
ID MARKS: T-306 0-3898

TEST REQUESTED	DETECTION LIMIT			RESULTS	
Organochlorine Pesticides and PCB's					
Aldrin	27	µg/Kg	<	27	µg/Kg
Alpha-BHC	20	µg/Kg	<	20	µg/Kg
Beta-BHC	40	µg/Kg	<	40	µg/Kg
Delta-BHC	60	µg/Kg	<	60	µg/Kg
Gamma-BHC(Lindane)	26	µg/Kg	<	26	µg/Kg
Chlordane	93	µg/Kg	<	93	µg/Kg
4,4'-DDD	73	µg/Kg	<	73	µg/Kg
4,4'-DDE	26	µg/Kg	<	26	µg/Kg
4,4'-DDT	80	µg/Kg	<	80	µg/Kg
Dieldrin	13	µg/Kg	<	13	µg/Kg
Endosulfan I	93	µg/Kg	<	93	µg/Kg
Endosulfan II	26	µg/Kg	<	26	µg/Kg
Endosulfan Sulfate	442	µg/Kg	<	442	µg/Kg
Endrin	40	µg/Kg	<	40	µg/Kg
Endrin Aldehyde	154	µg/Kg	<	154	µg/Kg
Heptachlor	20	µg/Kg	<	20	µg/Kg
Heptachlor Epoxide	556	µg/Kg	<	556	µg/Kg
Methoxychlor	1210	µg/Kg	<	1210	µg/Kg
Toxaphene	1610	µg/Kg	<	1610	µg/Kg
Arochlor-1016	67	µg/Kg	<	67	µg/Kg
Arochlor-1221	67	µg/Kg	<	67	µg/Kg
Arochlor-1232	67	µg/Kg	<	67	µg/Kg
Arochlor-1242	67	µg/Kg	<	67	µg/Kg
Arochlor-1248	67	µg/Kg	<	67	µg/Kg
Arochlor-1254	67	µg/Kg	<	67	µg/Kg
Arochlor-1260	67	µg/Kg	<	67	µg/Kg

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DATE RECEIVED: 5-DEC-1990

REPORT NUMBER: D90-30990
REPORT DATE: 3-JAN-1991

SAMPLE SUBMITTED BY: US Army Corp of Engineers
ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Janice Stewart

SAMPLE MATRIX: SOIL
ID MARKS: T-307 0-3899

TEST REQUESTED	DETECTION LIMIT		RESULTS		
TOTAL METALS:					
Silver	1.0	mg/Kg	<	1.0	mg/Kg
Arsenic	0.1	mg/Kg		3.0	mg/Kg
Barium	1.0	mg/Kg		705	mg/Kg
Cadmium	1.0	mg/Kg		33.3	mg/Kg
Chromium	1.0	mg/Kg		9.4	mg/Kg
Mercury	0.01	mg/Kg		0.02	mg/Kg
Lead	1.0	mg/Kg	<	1.0	mg/Kg
Selenium	0.1	mg/Kg		1.5	mg/Kg

NDRC Laboratories, Inc.

David R. Godwin, Ph.D.
Chief Executive Officer

CANNON AFB
ASBESTOS SAMPLE ANALYSIS
SWDED-GL REPORT NO. 15263

1. REFERENCE: Reference is made to Tulsa Test Request MIL 90-113 requesting testing of possible asbestos samples.

2. SAMPLES: On December 5 and 10, 1990 nine bulk samples were received for analysis by Polarized Light Microscopy.

SWD LAB NO.	FIELD SAMPLE NO.	LOCATION	TOTAL VOLUME (liters)
A-1413	T-101	Rubble Pile - Trench 1	N/A
A-1414	T-301	Rubble Pile - Trench 3	N/A
A-1417	T-201	Rubble Pile - Trench 2	N/A
A-1418	T-401	Rubble Pile - Trench 4	N/A
A-1419	T-501	Rubble Pile - Trench 5	N/A
A-1420	T-501QC	Rubble Pile - Trench 5	N/A
A-1421	T-601	Rubble Pile - Trench 6	N/A
A-1422	T-701	Rubble Pile - Trench 7	N/A
A-1423	T-801	Rubble Pile - Trench 8	N/A

3. RESULTS OF PLM ANALYSIS:

SWD LAB NO.	FIELD SAMPLE NO.	TYPE MATERIAL	ASBESTOS TYPE	PERCENT ASBESTOS
A-1413	T-101	Soil	Actinolite	Trace
A-1414	T-301	Soil	None	Detected
A-1417	T-201	Soil	None	Detected
A-1418	T-401	Soil	None	Detected
A-1419	T-501	Soil	None	Detected
A-1420	T-501QC	Soil	None	Detected
A-1421	T-601	Soil	None	Detected
A-1422	T-701	Soil	None	Detected
A-1423	T-801	Soil	None	Detected

294 92

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DATE RECEIVED: 6-DEC-1990

REPORT NUMBER: D90-31116
REPORT DATE: 3-JAN-1991

SAMPLE SUBMITTED BY: US Army Corp of Engineers
ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Cathy Hutchins

SAMPLE MATRIX: SOIL
ID MARKS: T402 0-3919

TEST REQUESTED	DETECTION LIMIT		RESULTS		
PCB by EPA Method 8080					
Arochlor 1016	0.1	mg/Kg	<	0.1	mg/Kg
Arochlor 1221	0.1	mg/Kg	<	0.1	mg/Kg
Arochlor 1232	0.1	mg/Kg	<	0.1	mg/Kg
Arochlor 1242	0.1	mg/Kg	<	0.1	mg/Kg
Arochlor 1248	0.1	mg/Kg	<	0.1	mg/Kg
Arochlor 1254	0.1	mg/Kg	<	0.1	mg/Kg
Arochlor 1260	0.1	mg/Kg	<	0.1	mg/Kg

NDRC Laboratories, Inc. David R. Godwin, Ph.D.
David R. Godwin, Ph.D.
Chief Executive Officer

CANNON AFB
ASBESTOS SAMPLE ANALYSIS
SWDED-GL REPORT NO. 15263

1. REFERENCE: Reference is made to Tulsa Test Request MIL 90-113 requesting testing of possible asbestos samples.

2. SAMPLES: On December 5 and 10, 1990 nine bulk samples were received for analysis by Polarized Light Microscopy.

SWD LAB NO.	FIELD SAMPLE NO.	LOCATION	TOTAL VOLUME (liters)
A-1413	T-101	Rubble Pile - Trench 1	N/A
A-1414	T-301	Rubble Pile - Trench 3	N/A
A-1417	T-201	Rubble Pile - Trench 2	N/A
A-1418	T-401	Rubble Pile - Trench 4	N/A
A-1419	T-501	Rubble Pile - Trench 5	N/A
A-1420	T-501QC	Rubble Pile - Trench 5	N/A
A-1421	T-601	Rubble Pile - Trench 6	N/A
A-1422	T-701	Rubble Pile - Trench 7	N/A
A-1423	T-801	Rubble Pile - Trench 8	N/A

3. RESULTS OF PLM ANALYSIS:

SWD LAB NO.	FIELD SAMPLE NO.	TYPE MATERIAL	ASBESTOS TYPE	PERCENT ASBESTOS
A-1413	T-101	Soil	Actinolite	Trace
A-1414	T-301	Soil	None	Detected
A-1417	T-201	Soil	None	Detected
A-1418	T-401	Soil	None	Detected
A-1419	T-501	Soil	None	Detected
A-1420	T-501QC	Soil	None	Detected
A-1421	T-601	Soil	None	Detected
A-1422	T-701	Soil	None	Detected
A-1423	T-801	Soil	None	Detected

294 91

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DATE RECEIVED: 6-DEC-1990

REPORT NUMBER: D90-31117
REPORT DATE: 3-JAN-1991

SAMPLE SUBMITTED BY: US Army Corp of Engineers
ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Cathy Hutchins

SAMPLE MATRIX: SOIL
ID MARKS: T502 0-3921

TEST REQUESTED	DETECTION LIMIT		RESULTS		
PCB by EPA Method 8080					
Arochlor 1016	0.1	mg/Kg	<	0.1	mg/Kg
Arochlor 1221	0.1	mg/Kg	<	0.1	mg/Kg
Arochlor 1232	0.1	mg/Kg	<	0.1	mg/Kg
Arochlor 1242	0.1	mg/Kg	<	0.1	mg/Kg
Arochlor 1248	0.1	mg/Kg	<	0.1	mg/Kg
Arochlor 1254	0.1	mg/Kg	<	0.1	mg/Kg
Arochlor 1260	0.1	mg/Kg	<	0.1	mg/Kg

NDRC Laboratories, Inc. David R Godwin
David R. Godwin, Ph.D.
Chief Executive Officer

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DATE RECEIVED: 6-DEC-1990

REPORT NUMBER: D90-31118
REPORT DATE: 3-JAN-1991

SAMPLE SUBMITTED BY: US Army Corp of Engineers
ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Cathy Hutchins

SAMPLE MATRIX: SOIL
ID MARKS: T503 0-3922

TEST REQUESTED	DETECTION LIMIT			RESULTS	
EPA 8270 TCLP - Extractable Organics					
o-Cresol	0.04	mg/L	<	0.04	mg/L
m-Cresol	0.04	mg/L	<	0.04	mg/L
p-Cresol	0.04	mg/L	<	0.04	mg/L
2,4-Dinitrotoluene	0.02	mg/L	<	0.02	mg/L
Hexachlorobenzene	0.02	mg/L	<	0.02	mg/L
Hexachlorobutadiene	0.02	mg/L	<	0.02	mg/L
Hexachloroethane	0.02	mg/L	<	0.02	mg/L
Nitrobenzene	0.02	mg/L	<	0.02	mg/L
Pentachlorophenol	0.10	mg/L	<	0.10	mg/L
Pyridine	0.02	mg/L	<	0.02	mg/L
2,4,5-Trichlorophenol	0.02	mg/L	<	0.02	mg/L
2,4,6-Trichlorophenol	0.02	mg/L	<	0.02	mg/L

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE LEVEL(µg/L)	PERCENT RECOVERED
Nitrobenzene-d5(SS)	50	68.5
2-Fluorobiphenyl(SS)	50	67.4
Terphenyl-d14(SS)	50	74.6
Phenol-d6(SS)	100	66.8
2-Fluorophenol(SS)	100	65.9
2,4,6-Tribromophenol(SS)	100	52.1

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SAMPLE SUBMITTED BY: US Army Corp of Engineers
ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Cathy Hutchins

SAMPLE MATRIX: SOIL
ID MARKS: T503 0-3922

TEST REQUESTED	DETECTION LIMIT			RESULTS	
EPA 8240 TCLP - Volatile Organics					
Benzene	0.01	mg/L	<	0.01	mg/L
Carbon tetrachloride	0.01	mg/L	<	0.01	mg/L
Chlorobenzene	0.01	mg/L	<	0.01	mg/L
Chloroform	0.01	mg/L	<	0.01	mg/L
1,4-Dichlorobenzene	0.01	mg/L	<	0.01	mg/L
1,2-Dichloroethane	0.01	mg/L	<	0.01	mg/L
1,1-Dichloroethene	0.01	mg/L	<	0.01	mg/L
Methyl ethyl ketone	0.05	mg/L	<	0.05	mg/L
Tetrachloroethene	0.01	mg/L	<	0.01	mg/L
Trichloroethene	0.01	mg/L	<	0.01	mg/L
Vinyl chloride	0.02	mg/L	<	0.02	mg/L

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE LEVEL(µg/L)	PERCENT RECOVERED
1,2-Dichloroethane-d4(SS)	50	98.6
Toluene-d8(SS)	50	88.1
Bromofluorobenzene(SS)	50	88.4

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60

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ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Cathy Hutchins

SAMPLE MATRIX: SOIL
ID MARKS: T503 0-3922

TEST REQUESTED	DETECTION LIMIT		RESULTS		
TCLP Herbicides					
2,4-D	5.0	mg/L	<	5.0	mg/L
2,4,5-TP Silvex	0.5	mg/L	<	0.5	mg/L

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SAMPLE SUBMITTED BY: US Army Corp of Engineers
ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Cathy Hutchins

SAMPLE MATRIX: SOIL
ID MARKS: T503 0-3922

TEST REQUESTED	DETECTION LIMIT		RESULTS		
TCLP Pesticides					
Chlordane	0.014	mg/L	<	0.014	mg/L
Heptachlor	0.0010	mg/L	<	0.0010	mg/L
Heptachlor epoxide	0.0010	mg/L	<	0.0010	mg/L
Endrin	0.006	mg/L	<	0.006	mg/L
Lindane	0.004	mg/L	<	0.004	mg/L
Methoxychlor	0.18	mg/L	<	0.18	mg/L
Toxaphene	0.24	mg/L	<	0.24	mg/L

NDRC Laboratories, Inc. David R. Godwin VP
David R. Godwin, Ph.D.
Chief Executive Officer

62

APPENDIX H

RCRA FACILITY INVESTIGATION (RFI) REPORT

FINAL REPORT

SWMU NO. 97

LANDFILL NO. 25

IRP SITE LF-25

AIR FORCE PROJECT NO. CZQZ 92 7005

CANNON AIR FORCE BASE, NEW MEXICO

Prepared for:

U.S. Army Corps of Engineers

Omaha District

Prepared by:

Radian Corporation

10675 Richmond Avenue, Suite 190

Houston, Texas 77042

June 1994

Enclosure 2

EXECUTIVE SUMMARY

As part of the Installation Restoration Program (IRP) and Resource Conservation and Recovery Act (RCRA) requirements, Radian Corporation (Radian) was requested by the U.S. Army Corps of Engineers (USACE), Omaha District, to perform a RCRA Facility Investigation (RFI) and Risk Assessment on a former landfill site on Cannon Air Force Base (CAFB), near Clovis, New Mexico. The site is known as Landfill No. 25. This document contains the RFI and risk assessment for Landfill No. 25.

Landfill No. 25, Solid Waste Management Unit No. 97 (SWMU 97), is an elongated trapezoidal-shaped area covering approximately 32 acres. It is located in the northeastern portion of CAFB, just west of the ordinance area and east of the sewage lagoons and Perimeter Road (Figure 1).

The site is covered by rubble piles consisting of large chunks of concrete mixed with asbestos siding tiles, metal and asbestos/cement pipe, asphalt mixed with soil, and small amounts of wood. The heights of the rubble piles vary across the site and reach a maximum at the north end where the rubble is mounded to 15 feet above natural ground. Over most of the site, however, the rubble is only 3 to 4 feet deep. The rubble consists of the remains of demolished World War II temporary buildings and runways. The oldest piles of rubble located on the north and west sides of the site are overgrown with weeds, shrubs, and trees. The debris dumped later appears as individual piles over the site.

In 1991, the USACE, Tulsa District, performed an environmental assessment of the northern half of Landfill No. 25. The assessment consisted of trenching at 9 locations and collecting both rubble and native soil samples for laboratory analyses. The results showed elevated levels of metals and semivolatile organics.

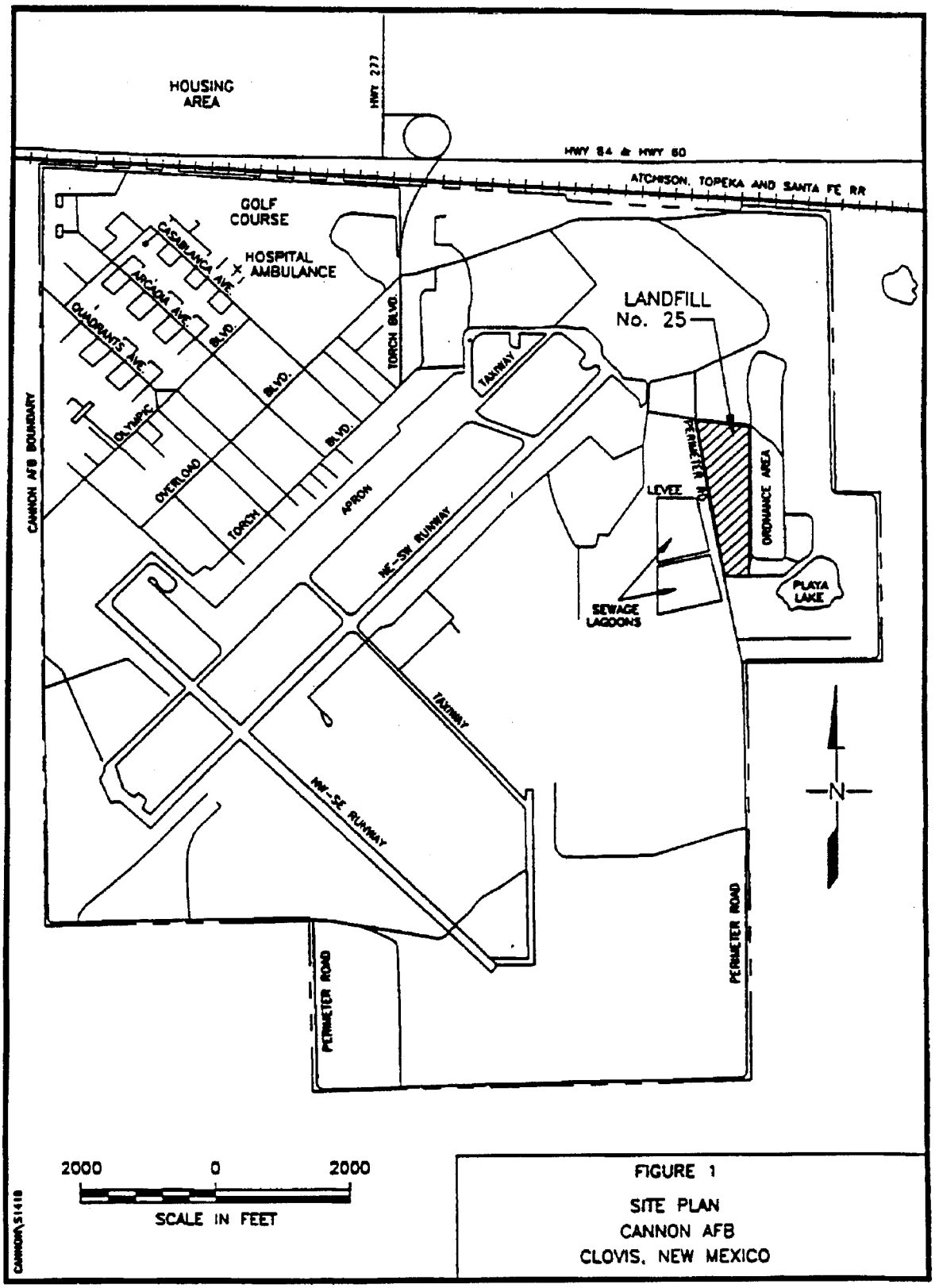


FIGURE 1
SITE PLAN
CANNON AFB
CLOVIS, NEW MEXICO

Consequently, the USACE recommended completion of a Remedial Investigation (USACE, 1991).

Based on the environmental assessment results, the USACE, Omaha District, prepared a Scope of Services designed to complete the RFI. The purpose of this investigation, as stated in the Scope of Services and modified as a result of a site visit, was to determine if contamination associated with landfill waste has migrated into native soils underlying it. Specific objectives include:

- Drilling and sampling of soil borings in the vicinity of the former trench locations where evidence of contamination had been detected. Analyses of these samples provides data on contaminant concentrations below source areas.
- Excavating and sampling of trenches in the previously uninvestigated south half of the landfill. This investigation provides information on contaminants in native soils throughout the remainder of the known landfill area.
- Drilling and sampling of deep (60-foot) soil borings throughout much of the landfill to determine the presence or absence of landfill related contamination at depth.
- Evaluation of the risks to human health and the environment associated with site contaminants in the underlying soils (surface and subsurface) and their potential mobilization.

A total of 139 soil samples, plus 14 Quality Control (QC) duplicates, and 14 Quality Assurance (QA) splits were collected and analyzed for the following:

- Volatile Organic Compounds (SW-846:8240);
- Semi-volatile Organic Compounds (SW-846:8270);
- Total Metals (SW-846:6010 and AA);
- Total Recoverable Petroleum Hydrocarbons (EPA Method 418.1);

- Pesticides/PCBs (SW-846:3520/8080); and
- pH (SW-846:9045).

Thirty-five soil samples, excluding QA and QC samples, were analyzed for Total Petroleum Hydrocarbons (SW-846:8015M) and Herbicides (SW-846:8150), and 46 samples were analyzed for grain size.

Metals, organochlorine pesticides, SVOCs, TRPH, TPH, chlorinated herbicides, and VOCs were all detected at levels above the analytical method reporting limit. Overall, the majority of the contamination was in the near surface soils, and as a general rule, decreased with depth.

One surface sample exceeded the noncarcinogenic RCRA Proposed Subpart S Media Action Level for lead (Figure 2). All other target metals and organics, were less than the proposed noncarcinogenic action levels.

Beryllium was the only metal detected above the RCRA Proposed Subpart S carcinogenic soil action level. However, beryllium in some background samples also exceeded the proposed action level, suggesting that this level is not appropriate for this site. One surface sample exceeded the proposed carcinogenic soil action levels for benzo(a)pyrene and benzo(b)fluoranthene (Figure 3). No other compounds were detected at levels exceeding the proposed carcinogenic soil action levels.

The risk assessment presents an assessment of the risks to human health and the environment associated with current and potential future activities at Landfill No. 25. The objectives of the risk assessment were to determine the average and reasonable maximum carcinogenic and noncarcinogenic risks associated with the landfill soil. To ensure adequate characterization of risk that shall be incurred at or near Landfill No. 25 presently or in the future, the baseline risk assessment considers several

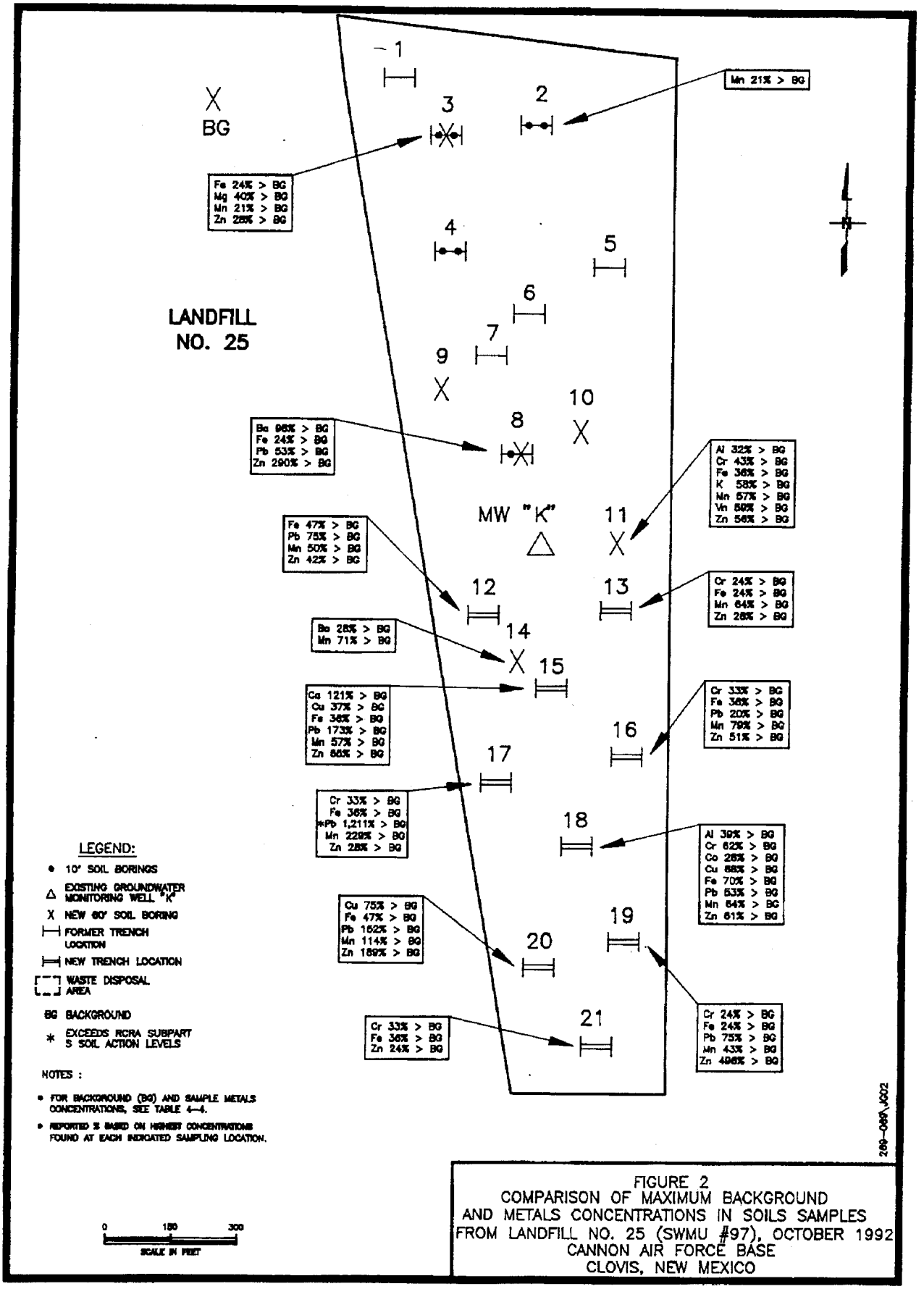


FIGURE 2
COMPARISON OF MAXIMUM BACKGROUND AND METALS CONCENTRATIONS IN SOILS SAMPLES FROM LANDFILL NO. 25 (SWMU #97), OCTOBER 1992
CANNON AIR FORCE BASE
CLOVIS, NEW MEXICO

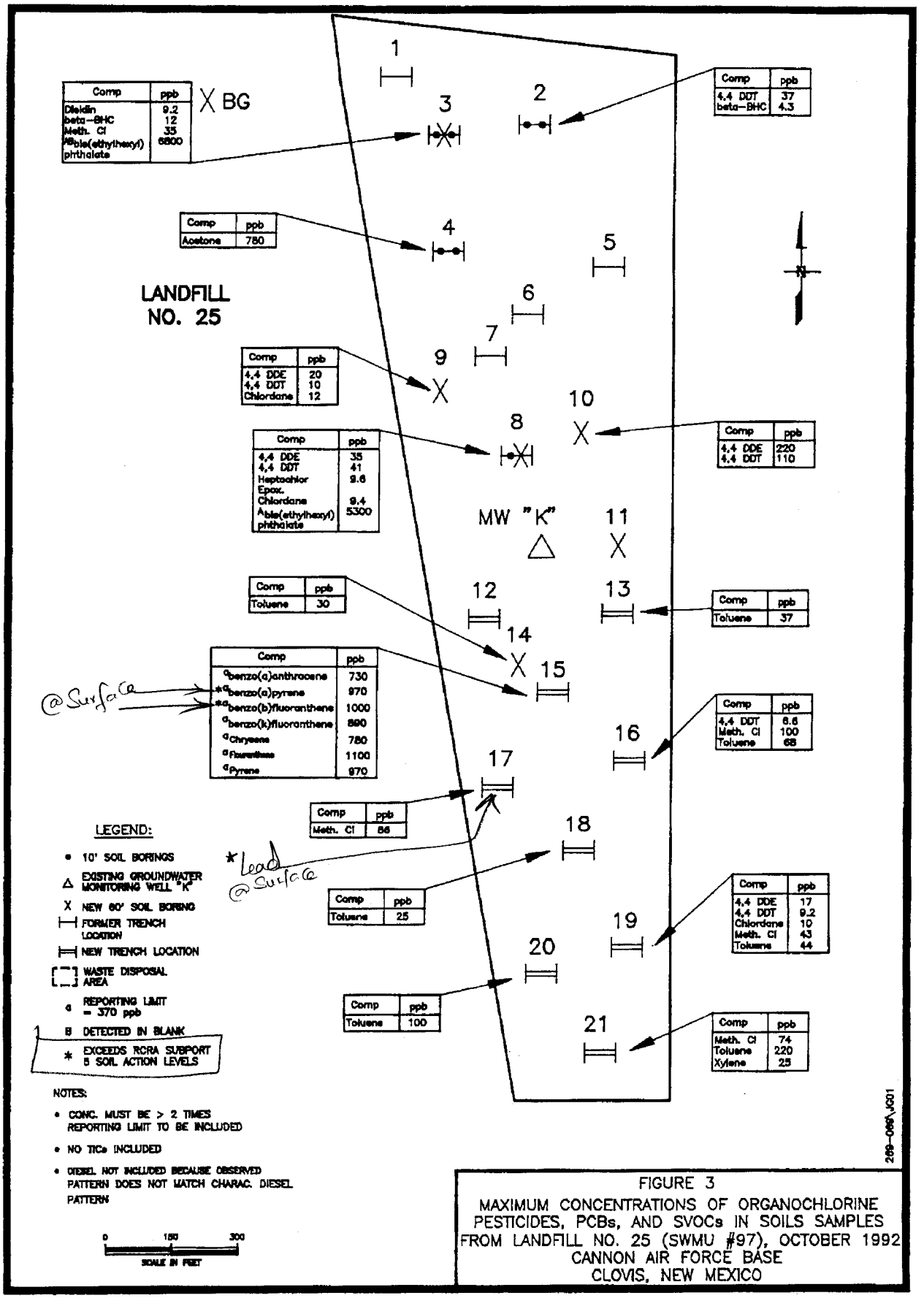


FIGURE 3
MAXIMUM CONCENTRATIONS OF ORGANOCHLORINE PESTICIDES, PCBs, AND SVOCs IN SOILS SAMPLES FROM LANDFILL NO. 25 (SWMU #97), OCTOBER 1992
CANNON AIR FORCE BASE
CLOVIS, NEW MEXICO

populations in eight exposure scenarios, including three chronic scenarios and two subchronic scenarios. The chronic scenarios include present and future off-site residents in areas downwind and hydraulically downgradient from Landfill No. 25 and present on-site workers. The subchronic scenarios include present on-site workers and future on-site construction workers.

Current human exposure to contaminants originating at Landfill No. 25 may occur in areas close to and downwind of the landfill and at the landfill itself (occupational) via inhalation of the ambient air. Use of water from Playa Lake to irrigate commercially produced agricultural crops and/or feed crops consumed by beef or dairy cows in the area may also indirectly result in human exposure to contaminants from the site.

Probable future land uses in the vicinity of CAFB will not significantly alter these exposure points and exposure routes although the size of the potentially exposed population could change. However, this investigation was conducted partially in response to a proposed expansion of the current munitions facility onto the northern portion of Landfill No. 25. Therefore, land use at the Base itself may change in the future, thus altering on-Base exposure patterns. Changes in exposure which could occur in the future include: 1) an increase or decrease in the number of people potentially exposed to site-related contaminants; 2) potential exposure of on-Base personnel and off-Base residents to site-related contaminants resulting from potential future groundwater contamination and subsequent use of the groundwater for domestic purposes (drinking, showering, etc.); and 3) an increase in exposure of on-site workers involved in future construction activities proposed for Landfill No. 25 (incidental ingestion of and/or dermal contact with soil).

The USEPA Superfund site remediation goal set forth in the National Contingency Plan (NCP) allows a cancer risk range of 1E-4 (1 in 10,000) to 1E-6 (1 in 1,000,000). This range is designed to be protective of human health and a cancer risk of

1 in 10,000 marks the point of departure. None of the estimated cancer risks exceed the Superfund site remediation cancer risk goal of 1 in 1,000,000 (1E-6), considered to be the de minimis value used in making risk management decisions. In addition, all of the estimated noncarcinogenic hazard indices are below the Superfund Site remediation goal of 1 for noncarcinogenic effects. These results suggest that, based on currently available information and the assumptions used in this risk assessment, Landfill No. 25 poses no notable human health risks to potentially exposed populations currently, or in the future. It should be noted, however, that this risk assessment was based on subsurface contamination below the rubble pile and not on contaminants, or their respective concentrations, within the rubble pile itself.

Results of the qualitative environmental evaluation indicate the level of exposure of wildlife known to inhabit the landfill and surrounding areas to contaminants present at the site is likely to be low. Therefore, potential adverse impacts of contamination from Landfill No. 25 on critical habitats and endangered species in the area is judged to be insignificant.

Only 2 of the 139 samples exceeded proposed RCRA Subpart S Soil Action Levels. Sample CAN97-17-S exceeded the proposed noncarcinogenic soil action level for lead. Sample CAN97-15-S exceeded the proposed soil action level for benzo(a)pyrene and benzo(b)fluoranthene. The above two samples are surface samples and do not represent significant contamination. The remaining 137 samples were all within the proposed soil action levels. In addition, the results of the quantitative risk assessment indicate that, based on currently available information and the assumptions used in the risk assessment, the native soil below the rubble at Landfill No. 25 poses no notable human health risks to potentially exposed populations.

The results of this investigation suggest that the native soil below the rubble at Landfill No. 25 is not contaminated. No further action is recommended for the native soil.

1.0 INTRODUCTION

As part of the Installation Restoration Program (IRP) and Resource Conservation and Recovery Act (RCRA) requirements, Radian Corporation (Radian) was requested by the U.S. Army Corps of Engineers (USACE), Omaha District, to perform an RCRA Facility Investigation (RFI) and Risk Assessment on a former landfill site on Cannon Air Force Base (CAFB), near Clovis, New Mexico. The site is known as Landfill No. 25. This document contains the RFI and risk assessment for Landfill No. 25.

1.1 Regulatory Overview

Because of the complicated nature of the regulations governing Department of Defense (DOD) facilities, this section is included, as requested in the scope of services, to explain the overlaps and differences of the various programs.

1.1.1 IRP and CERCLA

Because of the aircraft maintenance activities associated with its primary mission, the USAF has long been engaged in operations in which toxic and hazardous materials are used and industrial wastes are generated. There are a number of federal and state regulatory programs designed to ensure that routinely generated wastes are properly characterized and managed and that past disposal sites are identified and remediated, as necessary, to eliminate hazards to human health or the environment. One such program is the IRP.

The IRP began in 1975 as a pilot program conducted by the U.S. Army to investigate past hazardous waste disposal sites at DOD installations. Initial guidelines for conducting the IRP were provided to the armed services in a 23 July 1976 directive from the Assistant Secretary of Defense for Installations and Logistics. In these early stages of the program, DOD installations were required to identify their inactive hazardous waste disposal

sites and establish a prioritization program for conducting records searches. Subsequent legislative enactments have resulted in changes to the scope and procedures of the IRP.

In 1980, the U.S. Congress enacted the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 *United States Code* Section 9601 *et seq.*, as amended, which is primarily known for establishing the federal Superfund program and is administered by the U.S. Environmental Protection Agency (EPA). Under the Superfund program, inactive or abandoned waste disposal sites are investigated and remediated by the potentially responsible private or public parties (PRPs). If no PRPs are identified at a site, the EPA can undertake the investigation and cleanup with monies from the Superfund. The regulations that implement this program are referred to as the National Contingency Plan (NCP), found in 40 *Code of Federal Regulations* (CFR) Part 300. The NCP details the requirements for Remedial Investigations and Feasibility Studies.

In 1986, statutory amendments were made to CERCLA through the Superfund Amendments and Reauthorization Act (SARA). SARA specifies that remedial actions must achieve a degree of cleanup that meets legally applicable or relevant and appropriate requirements (ARARs) in light of the hazardous substances that are present. Basically, ARARs are quantitative standards, standards of control, and other substantive criteria or limitations promulgated by federal or state agencies. This includes "to be considered" (TBC) standards, which are non-promulgated federal and state guidelines, proposed rules, criteria, and advisories that may be useful to apply to the particular substances or units at a Superfund site. Early identification of ARARs (including TBC standards) is required, and potential remediation alternatives should be considered at the initiation of an RI/FS. SARA also provides for greater interaction with the public and state agencies, and extends EPA's role in evaluating the health risks associated with the contamination.

Section 9620 of SARA stipulates that CERCLA regulate the IRP. In November 1986, in response to this, the USAF modified the IRP to follow CERCLA guidance as related to the RI/FS process. The IRP is now oriented to include ARAR

determinations, the identification and screening of technologies, and the development of remedial alternatives.

1.1.2 RCRA

The Resource Conservation and Recovery Act (RCRA), 42 *United States Code* Section 6901 *et seq.*, was enacted in 1976. This law required the U.S. Environmental Protection Agency (EPA) to adopt regulations governing the current generation; transportation; and treatment, storage, or disposal of hazardous wastes. Subsequent amendments to the act required EPA to develop a "corrective action" program which, like the IRP, focuses on past waste management practices. These amendments, called the Hazardous and Solid Waste Amendments (HSWA) of 1984, require facilities that seek a RCRA operating permit to investigate and remediate the release of any hazardous wastes or constituents from active and inactive solid waste management units (SWMUs) under the corrective action program.

Section 6961 of RCRA, as amended, applies to federal, as well as private, facilities. Since CAFB stores hazardous wastes and is a federal facility, it is subject to RCRA as well as CERCLA.

1.1.3 Integration of IRP and RCRA Corrective Action Program

Both the IRP and RCRA corrective action programs are intended to ensure remediation of contaminated sites that pose an actual or potential threat to human health or the environment. Both programs are implemented through phased approaches to identify, investigate, and remediate these sites. However, there are differences between the two programs. First, the IRP is solely a federal facility program while RCRA corrective action also applies to private facilities. Second, the IRP does not contain substantive cleanup standards. For the IRP, federal and state laws serve as the basis for identifying cleanup standards through the ARAR process, while the proposed RCRA corrective action rules (*55*

Federal Register, 27 July 1990) contain ranges of media-specific cleanup standards. Finally, the terminology and scope of the two programs' phases are somewhat different.

Figure 1-1 presents a side-by-side comparison of the basic phases of implementation of the IRP and RCRA corrective action processes. The general scope of each of these phases is described below:

- RCRA Facility Assessment (RFA) and CERCLA Preliminary Assessment/Site Inspection (PA/SI)--the first steps in the process to screen and identify what specific sites at the installation need further investigation. The screening is usually based on a visual site inspection and records review at the installation.

- RCRA Facility Investigation (RFI) and CERCLA Remedial Investigation (RI)--the stages during which data about site and waste characteristics, their hazards, and routes of exposure are collected and analyzed, and the need for further action developed.

- RCRA Corrective Measures Study (CMS) and CERCLA Feasibility Study (FS)--the stages during which a number of potential remedial action alternatives are developed and screened.

- Statement of Basis and Record of Decision (ROD)--the document in which the a remedy is selected and documented. It also describes the technical parameters of the remedy and provides the public with a consolidated source of information about the site, the chosen remedy, and the rationale behind the selection.

- RCRA Corrective Measures Implementation (CMI) and CERCLA Remedial Design (RD)/Remedial Action (RA)--the stages during which the chosen remedy is designed and implemented.

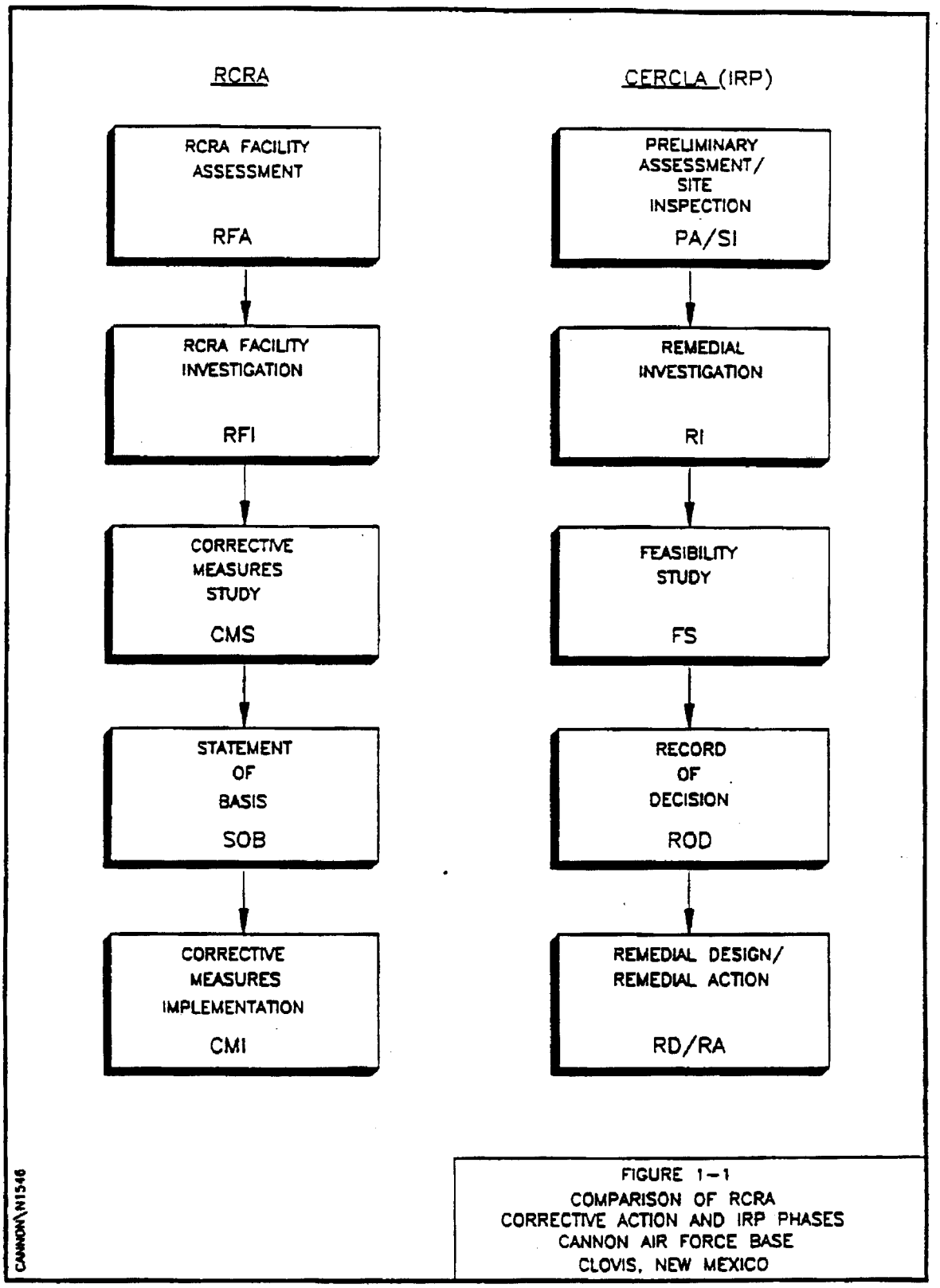


FIGURE 1-1
COMPARISON OF RCRA CORRECTIVE ACTION AND IRP PHASES
CANNON AIR FORCE BASE
CLOVIS, NEW MEXICO

The EPA, in the preamble to the proposed RCRA corrective action rules, confirmed that, because the IRP and RCRA corrective action programs are independent environmental requirements, federal facilities must comply with the requirements of both programs (*55 Federal Register* 30798, 30858). The agency further states that, to the extent possible, it will try to ensure the coordination of activities required under the programs to minimize duplication of information and work effort.

1.1.4 Integration of IRP and RCRA Corrective Action Program at CAFB

Since CAFB is part of the Department of Defense IRP, it is regulated by CERCLA. Additionally, because CAFB applied for a RCRA hazardous waste management permit to authorize the operation of an on-site storage facility for currently generated hazardous wastes, the facility is subject to the RCRA corrective action program.

HSWA was enacted into law on 8 November 1984 and required corrective action for releases of hazardous wastes or constituents from solid waste management units (SWMUs) at hazardous waste treatment, storage, and disposal facilities. Section 3004(u) of HSWA states that any facility applying for a RCRA hazardous waste management facility permit will be subject to an RFA. The RFA is conducted by the regulatory agency granting the permit and is designed to identify SWMUs that are suspected to be the source of releases to the environment. If any such SWMUs are identified during the RFA, the owner/operator of the facility will be directed to perform an RFI to assess the nature and extent of the release.

CAFB initiated the RCRA corrective action process by conducting an RFA in 1987 in conjunction with their ongoing IRP. A.T. Kearney, Inc. of Chicago performed the RFA of CAFB Landfill No. 25 under contract to EPA Region VI. Kearney evaluated past operational activities and waste management practices at CAFB and, in a 1987 report, identified 76 SWMUs that could have adverse impacts on the environment (Kearney, 1987). Landfill No. 25 was designated as SWMU 97 in the Kearney report.

EPA Region VI issued CAFB the HSWA component of its RCRA operating permit, effective 16 October 1989. The HSWA portions of the permit require CAFB to investigate some of the SWMUs identified in the RFA. EPA selected the SWMUs for investigation based on the results of the RFA, and Landfill No. 25 was among those SWMUs chosen for investigation.

1.2 Report Organization

This is the RFI Report for Landfill No. 25 at CAFB. It is also intended to address all of the elements required under the IRP for Landfill No. 25. Landfill No. 25 is designated by IRP as LF-25 and by RCRA as SWMU 97.

CAFB will meet the requirements of both CERCLA and the RCRA corrective action program without expending resources on duplication of effort. This report is presented in the CERCLA RI format but includes a reference table that outlines applicable RCRA corrective action RFI requirements and indicates where they are addressed within this report (Table 1-1).

Following this introduction, the RFI report contains eight sections. Section 2, Background and Scope, presents information concerning the site history, the previous investigation of Landfill No. 25, and this Remedial Investigation. Section 3, Field Investigation Program, summarizes the methods and procedures used to collect data for this RFI. Section 4 contains the geologic and analytical results from the Landfill No. 25 investigation. Topics covered in Section 4 include geologic interpretation, data validation, statistical analyses for background determination, and presentation of risk based action levels. A discussion of the findings can be found in Section 5. Section 6 contains the Risk Assessment. The Section 7 Conclusions and Recommendations are based on the Section 6 Risk Assessment and guidelines from the CERCLA and RCRA corrective action programs.

Table 1-1

Location of Responses to HSWA Permit Requirements in this RFI Report

Section	HSWA Permit Requirement	Location in RFI Report
A. ENVIRONMENTAL SETTING		
1. Hydrogeology		
a.	Regional and SWMU-specific geologic and hydrogeologic conditions affecting groundwater flow	Sections 1.3.1 and 1.3.2 Figures 1-4, 1-9, and 1-10
b.	Topographic features influencing groundwater flow	Sections 1.3.1 and 1.3.2 Figure 1-5
c.	Hydrogeologic units in migration pathways	Sections 1.3.1 and 1.3.2
d.	Extent and characteristics of hydrogeologic units in migration pathways	Sections 1.3.1 and 1.3.2
e.	Water level monitoring	Sections 1.3.1 and 1.3.2
f.	Man-made influences on hydrogeology	Sections 1.3.1 and 1.3.2 Figure 1-10
2. Soils		
a.	Surface soil distribution	Sections 1.3.1, 1.3.2 Figure 1-8
b.	Soil profile and classification	Sections 1.3.1, 1.3.2 Figure 1-8
c.	Soil stratigraphy	Sections 1.3.1, 1.3.2
d.	Saturated hydraulic conductivity	Sections 1.3.1, 1.232 Appendix K
e.	Porosity	Appendix K
f.	Cation exchange capacity	————
g.	Soil pH	Appendix K
h.	Particle size distribution	Section 4.2, Appendix E
i.	Depth to water table	Sections 1.3.1 and 1.3.2 Figure 1-9
j.	Moisture	Appendix L
k.	Effect of stratigraphy on unsaturated flow	Section 4.2, 5.1 Appendix K
l.	Infiltration	Section 4.2, 5.1 Appendix K
m.	Evapotranspiration	Sections 1.3.1 and 1.3.2 Table 1-2
n.	Contaminant concentrations in soils	Section 4.0
o.	Metals concentrations in soils	Section 4.3

Table 1-1

(Continued)

Section	HSWA Permit Requirement	Location in RFI Report
B. SOURCE CHARACTERIZATION		
1. Unit/Disposal Area Characteristics		
a.	Location	Sections 1.3.2, 6.1
b.	Type	Section 1.3.2
c.	Design features	Section 1.3.2
d.	Operating practices	Section 1.3.2
e.	Period of operation	Section 1.3.2
f.	Age	Section 1.3.2
g.	Physical conditions	Section 1.3.2, 4.2
h.	Closure method	Section 1.3.2
2. Waste Characteristics		
a.	Type	Sections 2.2 and 4.0
b.	Physical and chemical characteristics	Sections 4.0, 5.0
c.	Migration and dispersal characteristics	Section 5.0
C. CONTAMINATION CHARACTERISTICS		
1. Groundwater Contamination		
a.	Horizontal and vertical extent of contamination	Section 5.0
b.	Horizontal and vertical direction of movement	Section 5.0 Appendices J, K, and L
c.	Velocity	Appendices J, K, and L
d.	Horizontal and vertical concentration profiles of any Appendix IX or radiochemical constituents	Sections 4.0, 5.0 Appendices J, K, and L
e.	Factors influencing plume movement	Appendices J, K, and L
f.	Extrapolation of future movement	Section 6.0 Appendices J, K, and L
2. Soil Contamination		
a.	Vertical and horizontal extent	Sections 4.0, 5.0
b.	Contaminant and soil chemical properties	Section 4.0 Appendices B and E
c.	Contaminant concentrations	Section 4.0 Appendix B
d.	Velocity and direction of contaminant movement	Appendices J, K, and L

Table 1-1

(Continued)

Section	HSWA Permit Requirement	Location in RFI Report
e.	Extrapolation of future contaminant movement	Section 6.0 Appendices I, K, and L
3. Surface Water Contamination		
a.	Horizontal and vertical extent of any immiscible or dissolved plumes originating from the facility, and the extent of contamination in the underlying sediments	Section 4.0 Appendices B, J, K, and L
b.	Horizontal and vertical direction and velocity of contaminant movement	Appendix K
c.	Physical, biological, chemical, and radiochemical factors influencing contaminant movement	Appendix K
d.	Extrapolation of future contaminant movement	Appendix K
e.	Chemistry and radiochemistry of contaminated surface waters and sediments	Appendix K
4. Air Contamination		
a.	Horizontal and vertical direction and velocity	Appendix J
b.	Rate and amount of release	Appendix J
c.	Chemical, radiochemical, and physical composition of contaminants, including horizontal and vertical concentration profiles	Appendix J
D. POTENTIAL RECEPTORS		Section 6

1.3 Project Setting

CAFB is located about seven miles west of Clovis (Curry County), New Mexico. Clovis is in eastern New Mexico, approximately five miles west of the Texas/New Mexico state line (Figure 1-2).

1.3.1 Region Description

Physiography

Eastern New Mexico and western Texas are part of the Southern High Plains physiographic province. The Southern High Plains province is part of the Great Plains province, which extends from Montana and South Dakota to New Mexico and Texas. (See Figure 1-3).

The Southern High Plains is an isolated plateau within the Great Plains province that covers much of eastern New Mexico and western Texas. The northern boundary of the Southern High Plains is the Canadian River, which lies 60 miles to the north of Clovis. The eastern and western sides of the plateau are bounded by sandstone escarpments that rise as high as 300 feet above the surrounding area (NMGS, 1972). The elevation of the plateau is typically 4,500 feet above mean sea level (MSL).

Much of the province has a broad, relatively flat, gently sloping surface. The Rocky Mountain orogeny (uplift) created an eastward dip that ranges from 5 to 30 feet per mile. Small temporary lake basins known as playas are the dominant surface feature. These circular, concave depressions extend to a depth of more than 20 feet in the vicinity of CAFB. In several cases they exceed 50 acres in size (NMGS, 1972).

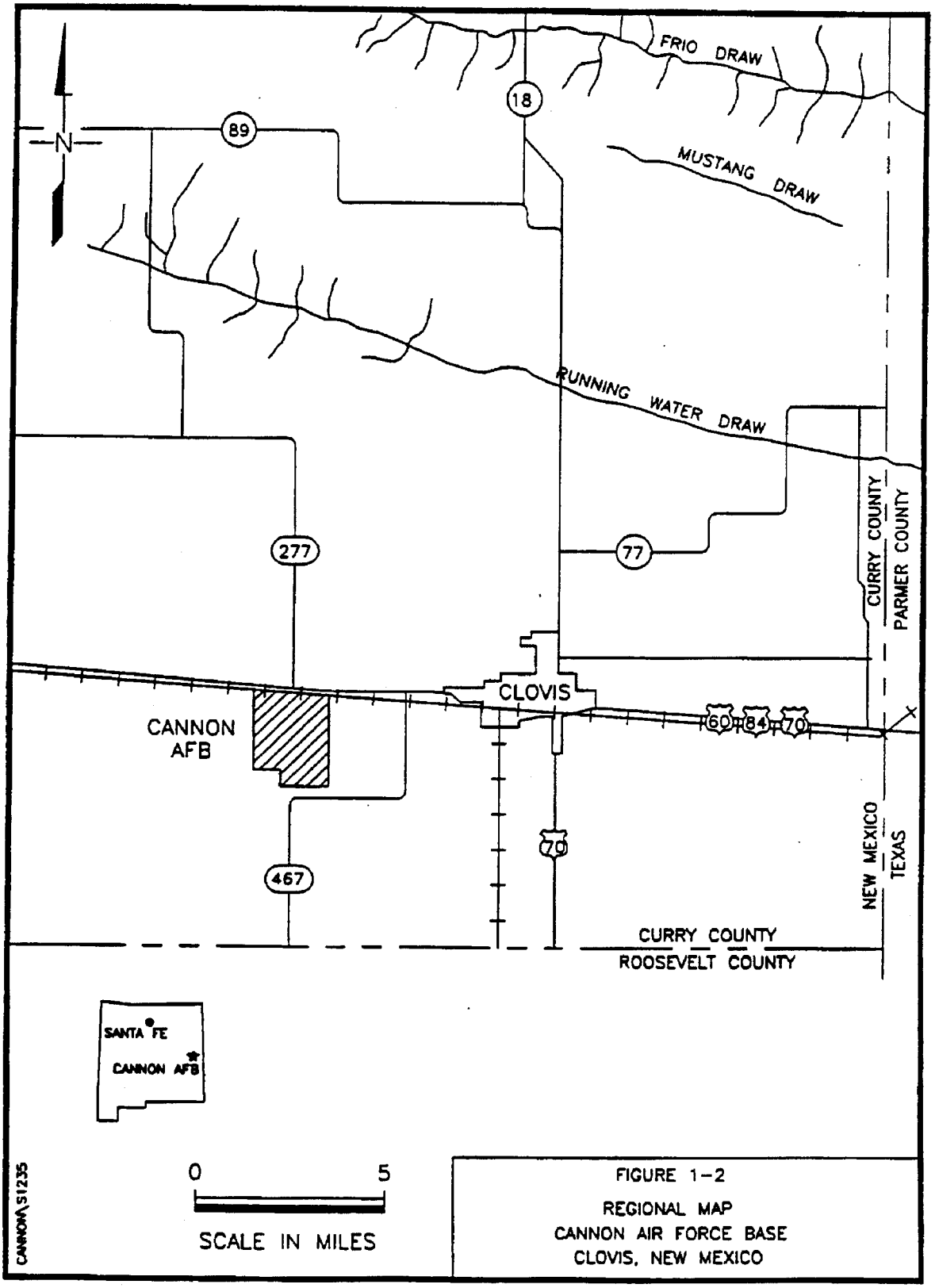


FIGURE 1-2
REGIONAL MAP
CANNON AIR FORCE BASE
CLOVIS, NEW MEXICO

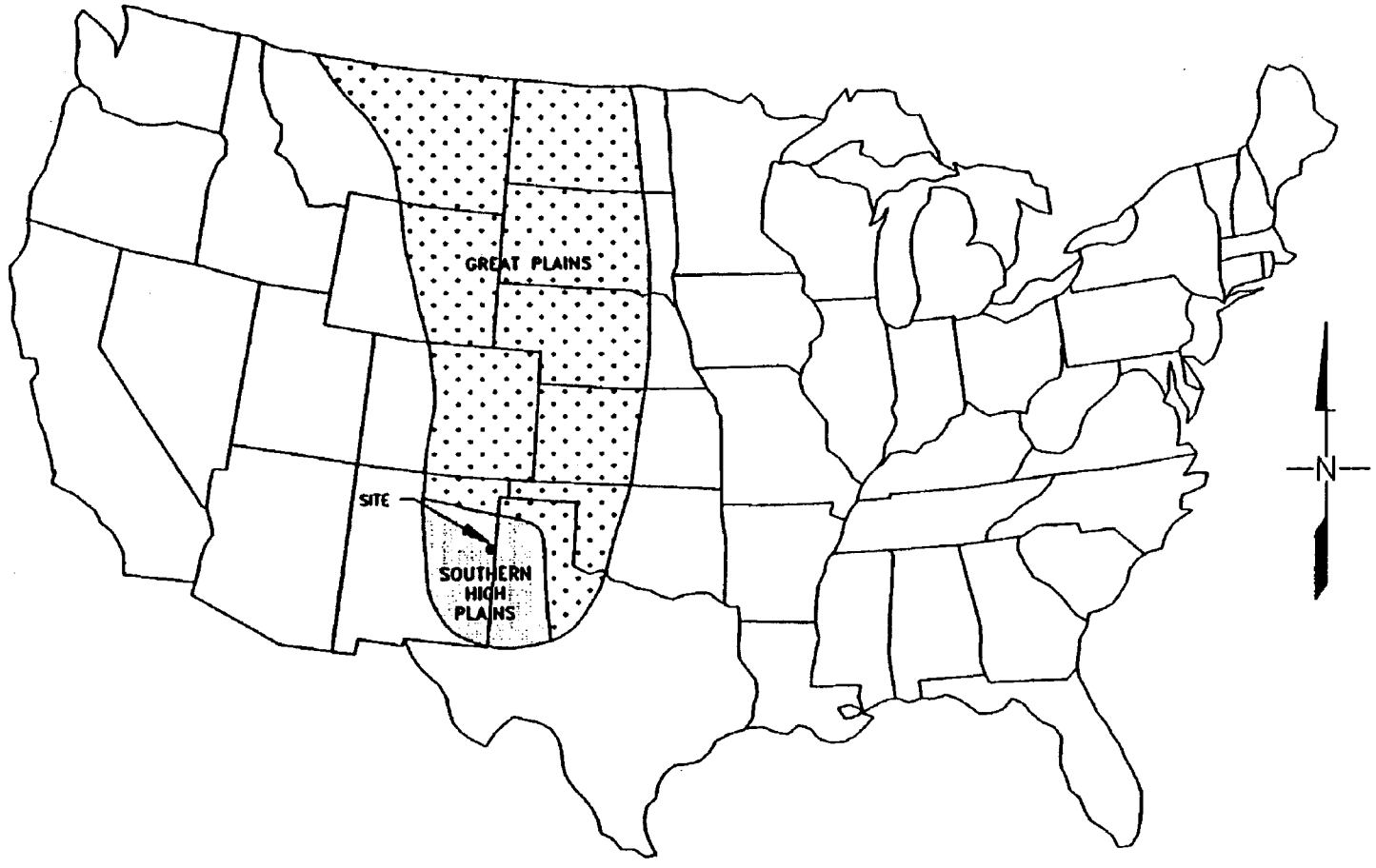


FIGURE 1-3

GREAT PLAINS AND
SOUTHERN HIGH PLAINS PROVINCES
CLOVIS, NEW MEXICO

Climate

The weather in the Southern High Plains is some of the most variable in the country. There are no high hills or mountains to break the flow, so air masses cross the region relatively unimpeded. Even with the potential of icy winters, scorching summers, extreme winds, and sudden storms, the regional average is more than 300 sunny days per year.

The local climate is controlled by the interactions of three extensive air masses (Anderson, 1975). The Canadian air mass from the north is generally dry and cool. The tropical air mass from the south is usually moist and warm. The Pacific air mass that must first cross the Rockies can be warm or cold and either moist or dry. Storms result when any of these air masses meet. Counter-clockwise rotation around low pressure systems spins moisture up from the gulf. The moisture cools by contact with polar air or by adiabatic cooling as it rises over the polar air mass, resulting in violent thunderstorms. Pacific storms from the northwest bring some moisture, but most is lost over the Rockies. The stable, clear weather is the result of a high pressure system that is situated near the Four Corners region for much of the fall and winter. All of these large-scale interactions provide the Southern High Plains with a relatively constant wind.

The climate of east-central New Mexico is classified as semi-arid. Average monthly temperatures range from a winter low of 39°F in January to a summer high of 78°F in July (Curry County, 1988). Mean annual precipitation is approximately 18 inches. The mean annual evapotranspiration rate is 71 in/yr, which represents a net loss of 53 in/yr (See Table 1-2). Prevailing winds are from the west at an average of 8 mph during fall, winter, and spring months. During the summer, winds are from the south at an average of 6 mph.

Table 1-2

Precipitation Data Based on Average Monthly Values For Clovis, New Mexico [a]

Month	Average Precipitation (in.)	Pan Evaporation (in.)	Net Precipitation (in.)
January	0.40	0.40	0.00
February	0.40	3.40	-3.00
March	0.60	5.00	-4.40
April	1.30	7.40	-6.10
May	2.35	8.50	-6.15
June	2.55	9.30	-6.75
July	2.50	11.80	-9.30
August	2.90	9.10	-6.20
September	2.25	5.50	-3.25
October	1.85	5.00	-3.15
November	0.50	3.50	-3.00
December	0.60	2.20	-1.60
Total	18.20	71.10	-52.90

[a] From Pan Evaporation Data collected by the Agricultural Science Station north of Clovis, New Mexico.

Because of the consistent winds and the patchy vegetative cover, the Texas Panhandle-eastern New Mexico area has the most windblown dust in the United States. Dust storms usually occur in March and April and can seriously limit visibility.

Soils

The soil profile for Curry County is classified as an aridisol using the Soil Conservation Service (SCS) Comprehensive Soil Classification System. Such soils form in relatively dry environments where the moisture balance is strongly negative for a significant portion of the year (See Table 1-2). Consequently, native vegetation is sparse, and little leaching occurs within the soil column. The primary soil-forming regime is calcification. Aridisols have essentially no organic layer (O-horizon) and often have a salt-enriched layer (i.e. caliche) at the surface or at depth. The local texture of an aridisol depends on surface processes such as wind and runoff. With the aid of irrigation, the agricultural potential of aridisols is good, but excessive evaporation can create alkaline conditions.

The dominant soil within the county is developed in sandy calcareous material that has been reworked by wind and runoff. Typically, the soil has a well developed surface layer (A-horizon) about 6" thick consisting of brown, friable, noncalcareous loam. The subsoil (B-horizon) is approximately 40" of red-brown, friable to well-cemented, calcareous, sandy-clay loam. The substratum (C-horizon) is white to pink, chalky, calcareous sandy loam with hard white to brown caliche nodules.

The soil is alkaline because of the high calcium carbonate concentration. A wide variety of metals is naturally occurring in the soils. Table 1-3 compares typical soil metals concentrations in the Clovis region to the rest of the United States.

Table 1-3

Elemental Concentrations[1] in Soils and Other Surficial Materials in the Conterminous United States[2]

Element	Arithmetic Mean		Typical Levels in Clovis, NM Region
	Conterminous United States	Western United States	
Aluminum	72,000	74,000	50,000
Antimony	0.67	0.62	<1
Arsenic	7.2	7.0	6.5
Barium	589	670	500
Beryllium	0.92	0.97	1 - 2
Cadmium	---	---	---
Calcium	24,000	36,000	7,500 - 18,000
Chromium	54	56	30
Cobalt	9.1	9.0	3 - 7
Copper	25	27	20
Iron	26,000	26,000	100 - 15,000
Lead	19	20	15
Magnesium	9,800	10,000	2,000 - 5,000
Manganese	550	480	500
Mercury	0.0??	0.065	0.032 - 0.052
Nickel	19	19	15
Potassium	15,000	18,000	16,000
Selenium	0.34	0.34	0.15 - 0.30
Silver	---	---	---
Sodium	12,000	12,000	7,000
Thallium	---	---	---
Vanadium	80	83	30 - 70
Zinc	60	65	45

[1] All concentrations are in milligrams per kilogram (mg/kg).
[2] Source: Sheckloette and Boerngea 1964

Vegetation

The entire region of eastern New Mexico lies within the Pinyon-Juniper Belt. It is characterized by widely-spaced, open, mixed stands of pinyon pines and junipers. This belt is also referred to as the Upper Sonoran Zone, the Plains Zone, and the Woodlands Zone (Elmore, 1976). The Pinyon-Juniper Belt ranges from high plateaus and foothills to low plains and canyons. Elevations generally range from 4,000 to 6,500 feet above MSL. The terrain is usually dry, rocky, and gravelly, and is characterized by limited moisture. Other than in riparian zones, the plants are drought-resistant species.

Other than pinyons and junipers, shrubs such as shadscale, saltbrush, and greasewood are often intermixed, especially where the soil is alkaline. Cacti and yucca creep up from the desert and Ponderosa pine and Gambles oak creep down from the foothills. Sagebrush often makes up stands of more than an acre uninterrupted by a single tree. In riparian zones, cottonwoods, walnuts, and sycamores are present, and dryer locations yield shrubs such as rabbitbrush, fernbush, cliffrose, and scrub oak.

Land Use

Of the 897,000 acres that comprise Curry County, 222,080 acres are irrigated cropland, 422,000 acres are dry cropland, and 235,000 acres are range. County revenues are approximately $44 million for crops and $88 million for livestock. The major crops grown in the county are wheat (170,600 acres), sorghum (20,500 acres), corn (17,000 acres), hay (14,500 acres), vegetables (4,530 acres), potatoes (3,000 acres), cotton (2,600 acres), and peanuts (1,600 acres). There is an estimated total of 130,250 head of cattle (Curry County, 1990). CAFB occupies about 4,320 acres and is a major source of revenue for Clovis. The base employs approximately 12,340 people. The total population of Clovis is 33,000 people.

Geology

The near-surface geology of the region consists of two sedimentary units (NMGS, 1972). The oldest is the Dockum Group of Triassic age (Figure 1-4). This is overlain by the Miocene-Pliocene age Ogallala Formation. Both units dip gently east-southeast away from the Rocky Mountain uplift.

The Dockum Group is made up of the Santa Rosa Sandstone, the Chinle Formation, and the Redonda Formation. Deep wells in the vicinity of Clovis have determined that the top several hundred feet of the unit consists of red-brown siltstone and claystone with interbedded fine to very fine sands. Prior to deposition of the Ogallala Formation, the Dockum Group was eroded by a series of deep east-west trending streams creating an uneven contact surface.

Overlying the Dockum Group is the Ogallala Formation. The Ogallala Formation is an alluvial fan deposit comprised of eroded sediments from the eastern margin of the ancestral Rocky Mountains. It consists of lenticular beds of silt, sand, and sand-gravel mixtures. Caliche, often an almost pure calcium carbonate, is found in the upper 100 feet of the formation (NMGS, 1972). The sediments exhibit varying degrees of carbonate cementation, but most of the formation is poorly-cemented, light-tan-to-red, fine-to-medium-grained sand. The base of the formation is marked by 15 to 40 feet of gravels. This basal gravel is the primary aquifer for the region. Drillers' logs from CAFB and nearby Radian investigations indicate that the Ogallala varies from 360 to 415 feet thick in the Clovis area. This fluctuation is the result of the uneven contact with the underlying Dockum Group.

Surface Water and Topography

The topography in the vicinity of CAFB is characterized by broad gentle slopes with localized depressions (Figure 1-5). The topographic gradient is approximately 17

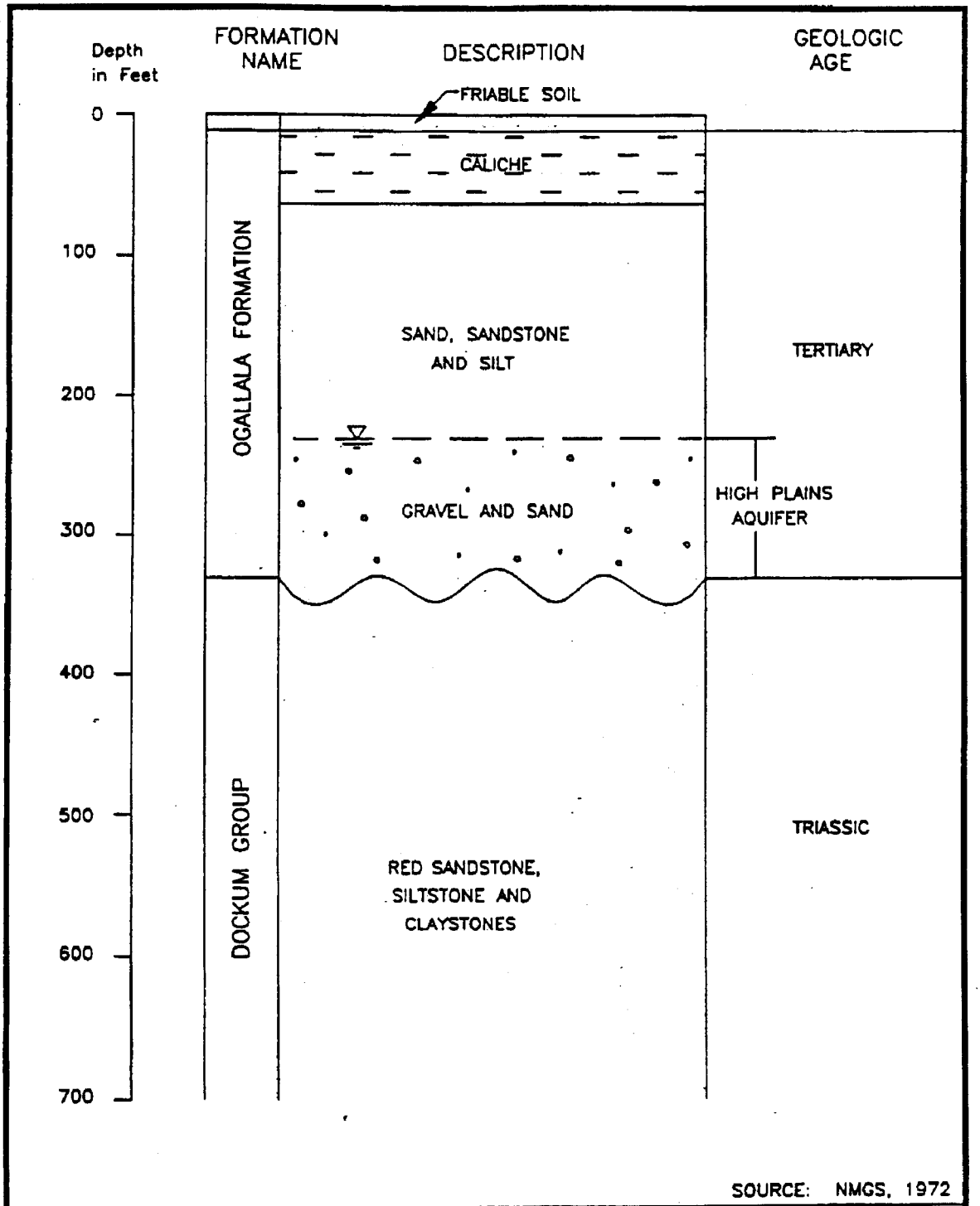
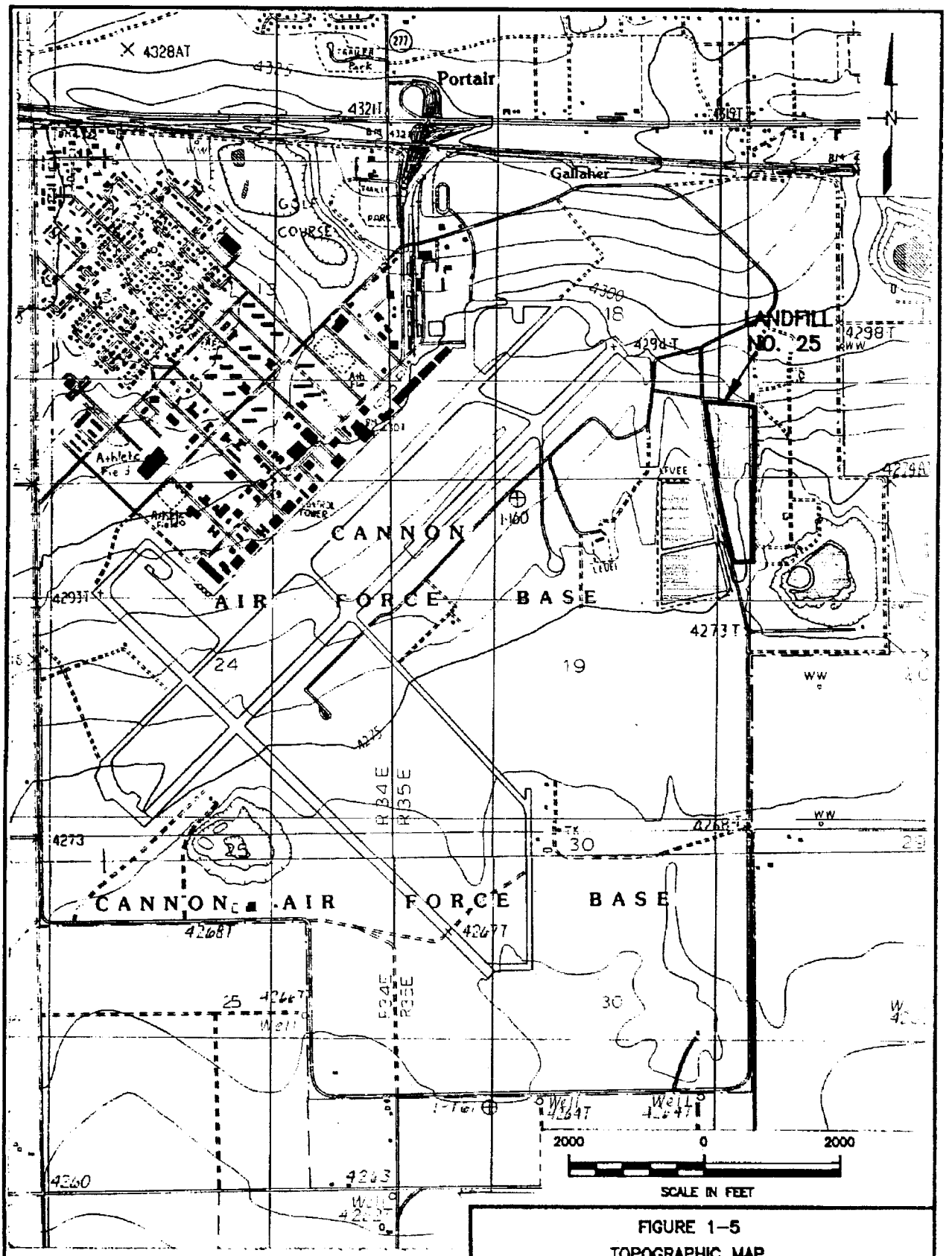


FIGURE 1-4

GEOLOGIC COLUMN
AT CANNON AIR FORCE BASE
CLOVIS, NEW MEXICO



REFERENCE:
USGS QUAD SHEETS "PORTAIR, NEW MEXICO"
AND "OASIS STATE PARK, NEW MEXICO"

FIGURE 1-5
TOPOGRAPHIC MAP
CANNON AIR FORCE BASE
CLOVIS, NEW MEXICO

feet per mile southeast and the depressions are 10 feet to 20 feet deep covering up to 50 acres.

Regional drainage in Curry County is predominantly to the east-southeast. Stream drainage is poorly developed and intermittent because of the low annual precipitation and the minimal relief. The drainages that are developed are long shallow valleys and draws that extend from the western margin of the Southern High Plains to eastern boundary of the province. Running Water Draw and Patrick Draw, located 10 and 20 miles, respectively, north of CAFB, are the nearest drainages (Figure 1-2). Both of these drainages trend to the southeast, interrupted periodically by short second-order streams. Eventually, the draws run into either the Red River, the Brazos River, or the Colorado River. Because of the semi-arid climate, the negative water balance, and the intermittent nature of these drainages, they rarely contribute to the annual flow of these major rivers. In the areas not drained by the draws (i.e. most of the county), surface runoff collects in playa lakes. The playas have no surface outlet, and consequently, all of the water that collects in the lakes is eventually lost to evapotranspiration and infiltration.

Groundwater

Water used for municipal and industrial purposes is derived from wells screened in the coarse-grained material at the base of the Ogallala Formation. The Ogallala aquifer is part of the High Plains aquifer that extends continuously from Wyoming and South Dakota into New Mexico and Texas. In eastern New Mexico, contact with the Dockum Group serves as the basal aquitard. The Ogallala is a water table, or unconfined, aquifer (Weeks and Gutentag, 1981; Berkstresser and Mourant, 1966). Previous Radian work indicates that the depth to water in the Clovis area is approximately 300 feet below land surface (BLS). The water table has a southeasterly gradient of 13 feet per mile. Kearney (1987) indicates a regional flow velocity of about 1.0×10^{-1} cm/sec. Well yields vary from less than 1 gpm in fine silt and clays, to 1600 gpm in coarse sands and gravels (Berkstresser and Mourant, 1966). Other than having a hardness of 185 mg/L as $CaCO_3$, and containing

an average of 2.2 mg/L fluoride, the water from the Ogallala aquifer is considered to be of good chemical quality (NMGS, 1972).

Groundwater recharge to the Ogallala aquifer is primarily through precipitation at a rate of 1.0 in/yr (Kearney, 1987). Because of the negative water balance of 53.4 inches per year, recharge only occurs during heavy precipitation events when the initial abstraction capacity of the soil is exceeded and runoff occurs, or during cool months when evapotranspiration is exceeded by precipitation. Discharge from the aquifer occurs primarily through well pumping and secondarily through springs along the eroded margins. The rate of pumping vastly exceeds recharge, and consequently, water levels have steadily declined at a rate of more than 2 feet per year in the Clovis area (NMGS, 1972).

Groundwater in the Dockum group is scarce and of poor chemical quality. Consequently, the base of the Ogallala Formation is considered to be the practical lower limit from which useful volumes of potable water can be derived.

1.3.2 Site Description

At various times in CAFB's history, demolished buildings, runways, and subgrade material was deposited on a site now known as Landfill No. 25.

Location

Landfill No. 25 (SWMU 97) is an elongated trapezoidal-shaped area covering approximately 32 acres. It is located in the northeastern portion of CAFB, just west of the ordnance area and east of the sewage lagoons and Perimeter Road (Figure 1-6). The exact landfill boundaries are poorly defined.

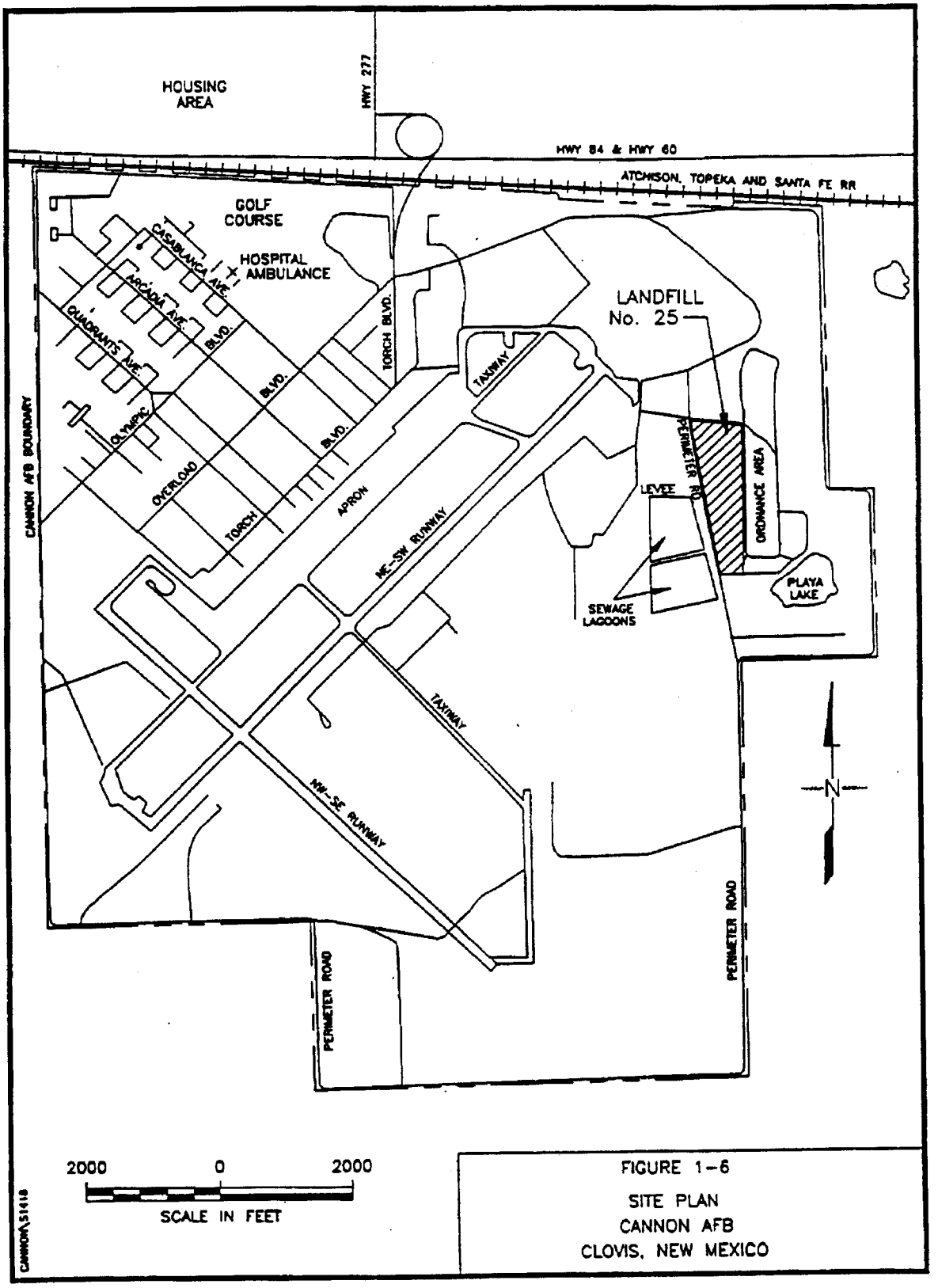


FIGURE 1-6
SITE PLAN
CANNON AFB
CLOVIS, NEW MEXICO

The site is covered by rubble piles consisting of large chunks of concrete mixed with asbestos siding tiles, metal and asbestos/cement pipe, asphalt mixed with soil, and small amounts of wood. The heights of the rubble piles vary across the site and reach a maximum at the north end where the rubble is mounded to 15 feet above natural ground. Over most of the site, however, the rubble is only 3 to 4 feet deep. Figure 1-7 is a conceptual cross-section of Landfill No. 25. The rubble consists of the remains of demolished World War II temporary buildings and runways. The oldest piles of rubble located on the north and west sides of the site are overgrown with weeds, shrubs, and trees. The debris dumped later appears as individual conical piles over the site.

Soils

Soils in the vicinity of CAFB are classified as silty sands, sand silt mixtures (SM) to clayey sands, sand-clay mixtures (SC) using the Unified Classification systems and as aridisols using the SCS classification system. The following description is based on the Soil Conservation Service Curry County Soil Survey (1953). Three soil types are present in the vicinity of Landfill No. 25 (Figure 1-8). These are the Amarillo Fine Sandy Loam (Ab and Ac), the Mansker Fine Sandy Loam (Mb), and the Potter Fine Sandy Loam (Pa). Amarillo fine sandy loam is the most common. It consists of a thin sandy A-horizon (top soil), a well-developed clayey or calcic B-horizon (zone of accumulation), and a C-horizon made of broken down Ogallala formation. The Amarillo soil is derived from stream erosion coupled with extensive reworking of the sediments by the wind. The Mansker soils occupy the slopes, draws and playas. Mansker soils are strongly calcareous and are simply Amarillo soils where the top layers are eroded off, exposing the strongly calcareous zone of accumulation. The Potter soils are found at the base of playas. They are shallow extremely calcareous pan layers that are the first step in caliche formation.

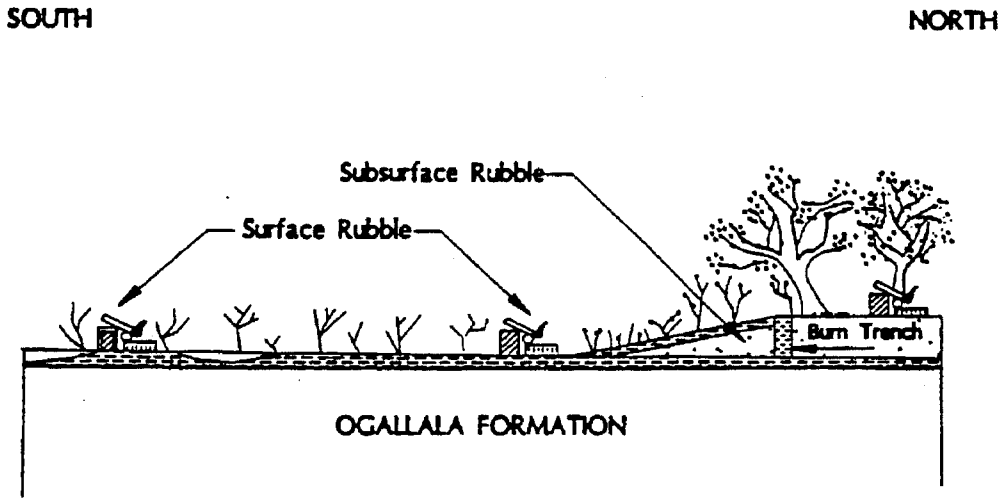


FIGURE 1-7

GENERALIZED CROSS-SECTION
OF LANDFILL NO. 25

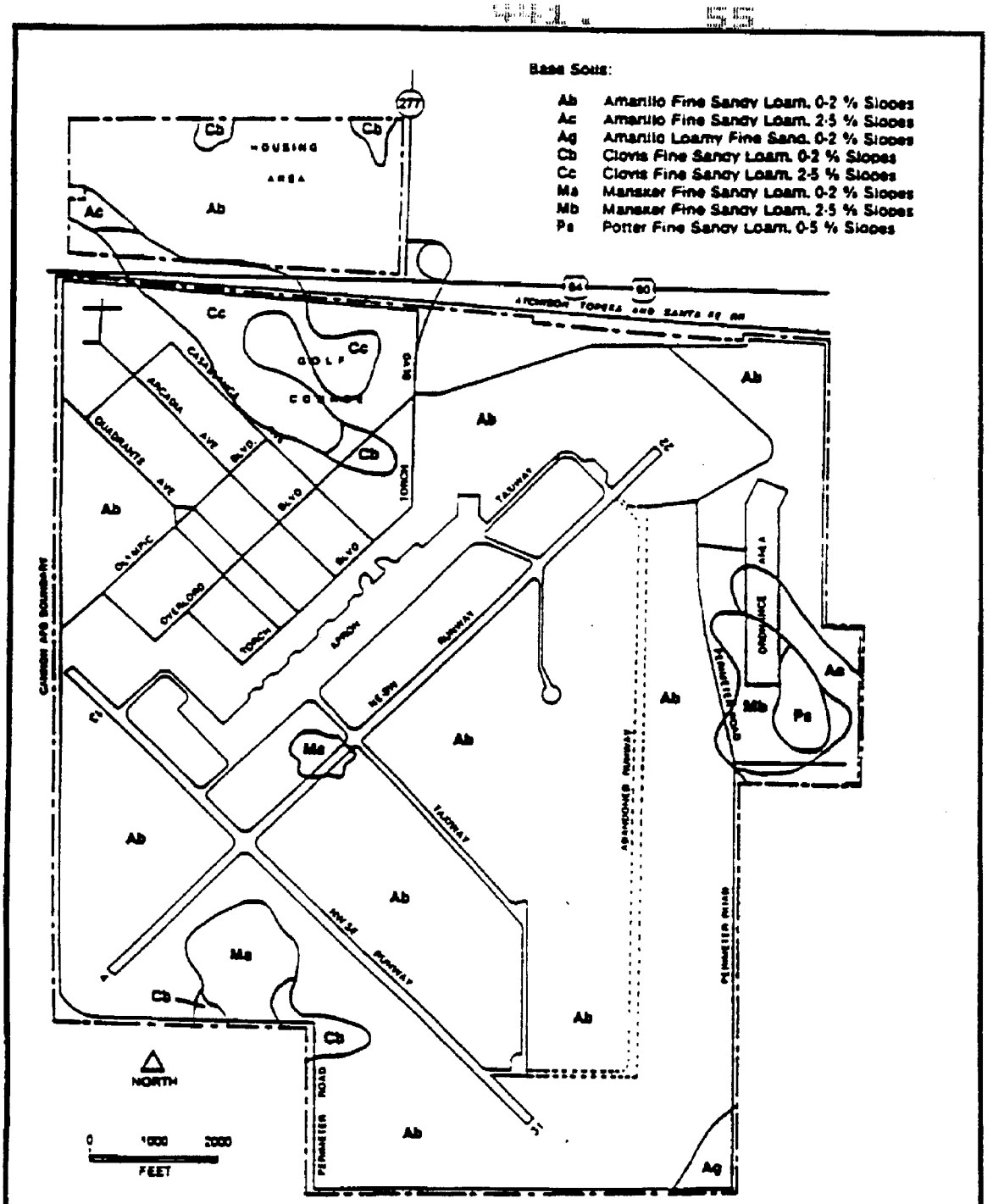


FIGURE 1-8

DISTRIBUTION OF SOILS, BY TYPE
CANNON AFB
CLOVIS, NEW MEXICO

Vegetation

A visual survey of the vegetative cover was completed during the field investigation phase of the project. The unconsolidated landfill debris above the firmer Ogallala sediments has a different vegetative cover than adjacent parts of the base. Chinese elms along with various other deciduous trees are found on the northern half of the landfill. Yucca is present over its entirety. Sage and rabbitbrush are the most common shrubs. Indian rice grass, foxtail barley, and blue gramma are the most common grasses.

Surface Water

Landfill No. 25 slopes from north to south (Figure 1-5). Runoff from the site goes to Playa Lake. Playa Lake is located 500 feet southeast of Landfill No. 25.

Groundwater

Based on the survey elevations shown on Plate 1 and the estimated groundwater elevations shown on Figure 1-9, the depth to groundwater on the site is approximately 270 feet. At CAFB, the Ogallala aquifer has a thickness ranging from 93 to 143 feet (1960 data) (Kearney, 1987). The exact thickness and flow direction is influenced by the uneven erosional surface at the top of the Dockum Group. The local groundwater gradient is southeasterly at 7.5 feet per mile. Figure 1-9 shows the water table elevation contours for 1984 (Radian 1986).

Figure 1-10 shows the approximate location of water wells on and in the vicinity of CAFB. Off-base well locations are based on 1990 Lee Wan and Associates Work Plans (Lee Wan, 1990). The ten wells located on the base were located with the help of CAFB water plant personnel. Water well 5 is closest to Landfill No. 25 and is immediately to the north of it.

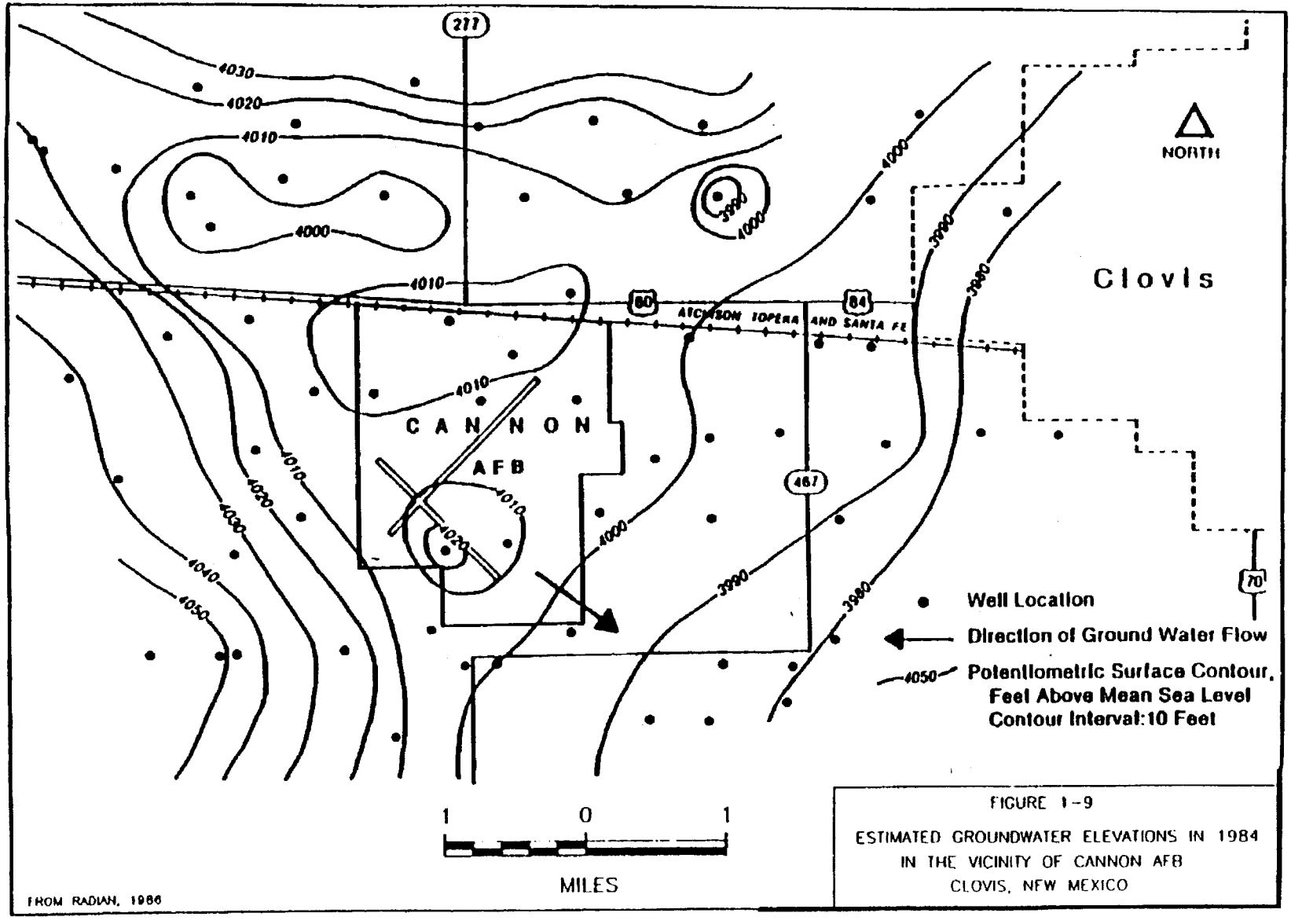


FIGURE 1-9

ESTIMATED GROUNDWATER ELEVATIONS IN 1984 IN THE VICINITY OF CANNON AFB CLOVIS, NEW MEXICO

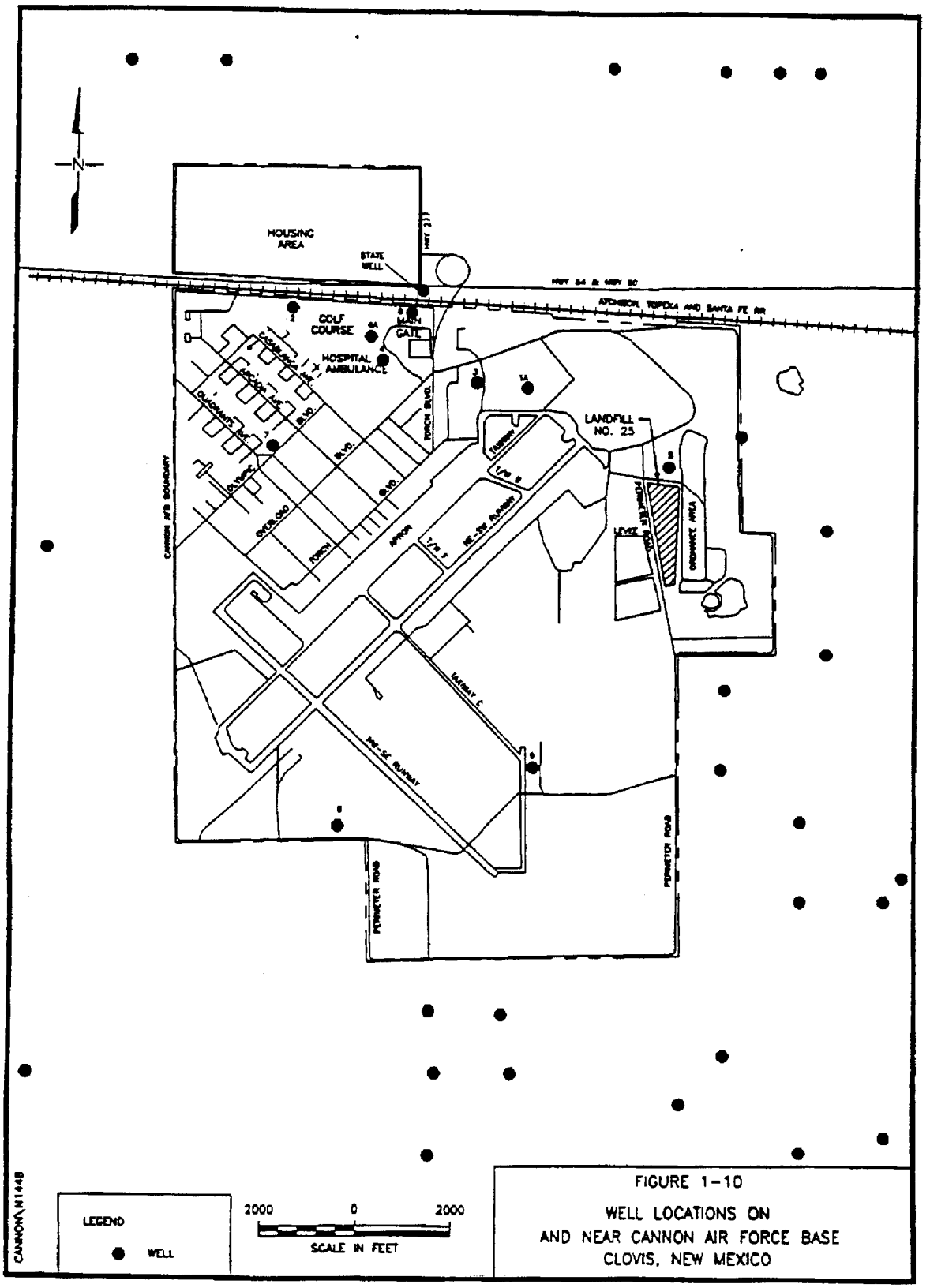


FIGURE 1-10

WELL LOCATIONS ON
AND NEAR CANNON AIR FORCE BASE
CLOVIS, NEW MEXICO

Estimates of hydraulic conductivity were calculated from pump tests in water wells 5 and 9 (Lee Wan, 1990). An estimate of hydraulic conductivity for well 8 was made from water level recovery data (i.e. slug test). Hydraulic conductivity was found to be approximately 2.0×10^{-3} cm/sec in wells 5 and 9 and 2.0×10^{-2} cm/sec in well 8. These values are lower than published values for pure sand-gravel aquifers, suggesting there may be some interstitial clays present in the aquifer in the vicinity of CAFB. Boring logs from CAFB IRP projects and published reports (Frye, et. al. 1974; Glass, et. al. 1973) support this suggestion.

2.0 BACKGROUND AND SCOPE

Landfill No. 25 is one of several landfill sites that have been used for disposal of a variety of waste materials during the active life of Cannon Air Force Base (CAFB). To place current activities in a proper context, a discussion of the history of CAFB and of Landfill No. 25 is presented in this section. This section includes a summary of previous site investigation activities performed at Landfill No. 25 and defines objectives of this RFI effort. Finally, a discussion of the scope of current RFI activities and how these activities are intended to address stated objectives is provided.

2.1 Site History

CAFB is one of 25 U.S. Air Combat Command bases. The history of CAFB dates to 1929, when Portair Field was established on the site. Portair Field was a civilian passenger terminal for early commercial transcontinental flights. In 1942 the Army Air Corps took control of the civilian airfield and it became known as the Clovis Army Air Base. During World War II, temporary buildings and runways were constructed, and the base was used to teach flying, bombing, and gunnery classes. After World War II, the base was renamed Clovis Army Air Field, and flying activities at the base decreased until the base was deactivated in May 1947. The base was reassigned to the Tactical Air Command in July 1951 and formally reactivated in November 1951 as Clovis Air Force Base. In 1957, the base was renamed Cannon Air Force Base.

The World War II temporary buildings and runways were demolished and disposed of at Landfill No. 25. The first piles of building and runway rubble, now overgrown with weeds, shrubs, and trees, were dumped on the north and west sides of the site. Later dumping occurred as individual conical piles over the site. According to base personnel, waste disposal at Landfill No. 25 is believed to have begun around 1945. The date when dumping ceased at the site is unknown.

2.2 Previous Investigation

Investigation of landfills at CAFB began with a RCRA Facility Assessment (RFA) in 1987 (Kearney, 1987). A total of 76 SWMUs was described in the RFA, including Landfill No. 25, which was identified as SWMU 97. The HSWA portions of the CAFB RCRA operating permit require investigation of each of these SWMUs. Recognizing the impracticality of trying to complete all SWMU investigations in a set time period, CAFB is permitted to set priorities and perform investigations on a smaller subset of SWMUs so long as reasonable progress is demonstrated.

A Phase IV investigation of an Old Entomology Rinse Area (SWMU 96), located about 200 feet west of Landfill No. 25 and just north of the sewage lagoons, was completed in 1987. The investigation was conducted by Walk, Haydle & Associates (WHA) [Woodward-Clyde Consultants (WCC) 1992] and involved minimal sampling on Landfill No. 25. Samples taken included those from two soil borings located just east of Perimeter Road in the northern part of Landfill No. 25 and from Monitoring Well K in the center of Landfill No. 25. Low concentrations of pesticides were found in one of the borings at the 0.5-foot sample depth (See Table 2-1). A monitoring well sample was analyzed for metals, PCBs, and pesticides. Only metals below MCLs (as of July 30, 1992) were detected (WCC 1992) (See Table 2-1).

CAFB was interested in using part of the Landfill No. 25 area for construction of additional base operation facilities. As a result, CAFB decided to proceed directly with investigation of Landfill No. 25 to accommodate these construction plans. CAFB requested that USACE perform an environmental assessment to determine if wastes in Landfill No. 25 presented any potential threat to human health and the environment. CAFB was also interested in knowing if construction plans could proceed on schedule.

Table 2-1

Results of SMWU 96 Samples Taken on Landfill No. 25

Soil Boring at 0.5 feet (WHA 1987)	
Pesticide	**Concentration (mg/kg)**
4,4-DDD	ND[a]
4,4-DDE	0.5
4,4-DDT	2.0
Chlordane	0.1
Monitoring Well K	
Metal	**Concentration (mg/L)**
Antimony	ND
Arsenic	BDL[b]
Barium	0.66
Beryllium	ND
Cadmium	ND
Chromium	ND
Cobalt	ND
Copper	0.15
Lead	BDL
Mercury	ND
Nickel	BDL
Selenium	ND
Silver	ND
Thallium	ND
Tin	ND
Vanadium	0.035
Zinc	0.049

[a] ND = Not Detected
[b] BDL = Below Detection Limit

USACE prepared a Sampling and Analysis Plan (USACE, 1990), and performed the environmental assessment of Landfill No. 25 in December 1990 (USACE, 1991). The assessment consisted of trenching at nine locations and collecting both waste and native soil samples for laboratory analysis. Approximate locations of these trenches are shown in Figure 2-1.

Trenches 1, 4, 6, and 8 were excavated only through the rubble. Trenches 2, 3, 5, and 7 were excavated through the rubble and 5 feet into the undisturbed soil below. A background trench (BG) was excavated north of the landfill (Figure 2-1). Excavation of the trenches revealed that the majority of the material in the rubble pile was airfield paving and sub-grade material. The second most prevalent waste was building demolition rubble. The third type of waste encountered was glass, metal, cinders, ash, and other burned material in what appeared to be burn trenches. The burn material was not previously known to exist on the site (USACE, 1991).

Rubble samples from each trench were analyzed for asbestos, PCBs, and TCLP metals. Only minor amounts of metals (Barium, Mercury, and Cadmium) were detected. The results are shown in Table 2-2. Soil samples in trenches 2, 3, 5, and BG were collected from 0 to 1 foot and 4 to 5 feet below the native soil surface. The samples were analyzed for volatiles, semivolatiles, PCBs, and metals. These results are presented in Table 2-3. Soil from trench 3 showed elevated concentrations of metals (barium and cadmium) and semivolatiles (benzidine). Consequently, USACE recommended delaying construction on the site until completion of an RFI (USACE, 1991).

2.3 Remedial Investigation

Based on environmental assessment results, USACE prepared a Scope of Services designed to complete the RFI. The Scope of Services specified the number and location of soil borings and trenches, depth and sampling frequency of soil borings, and

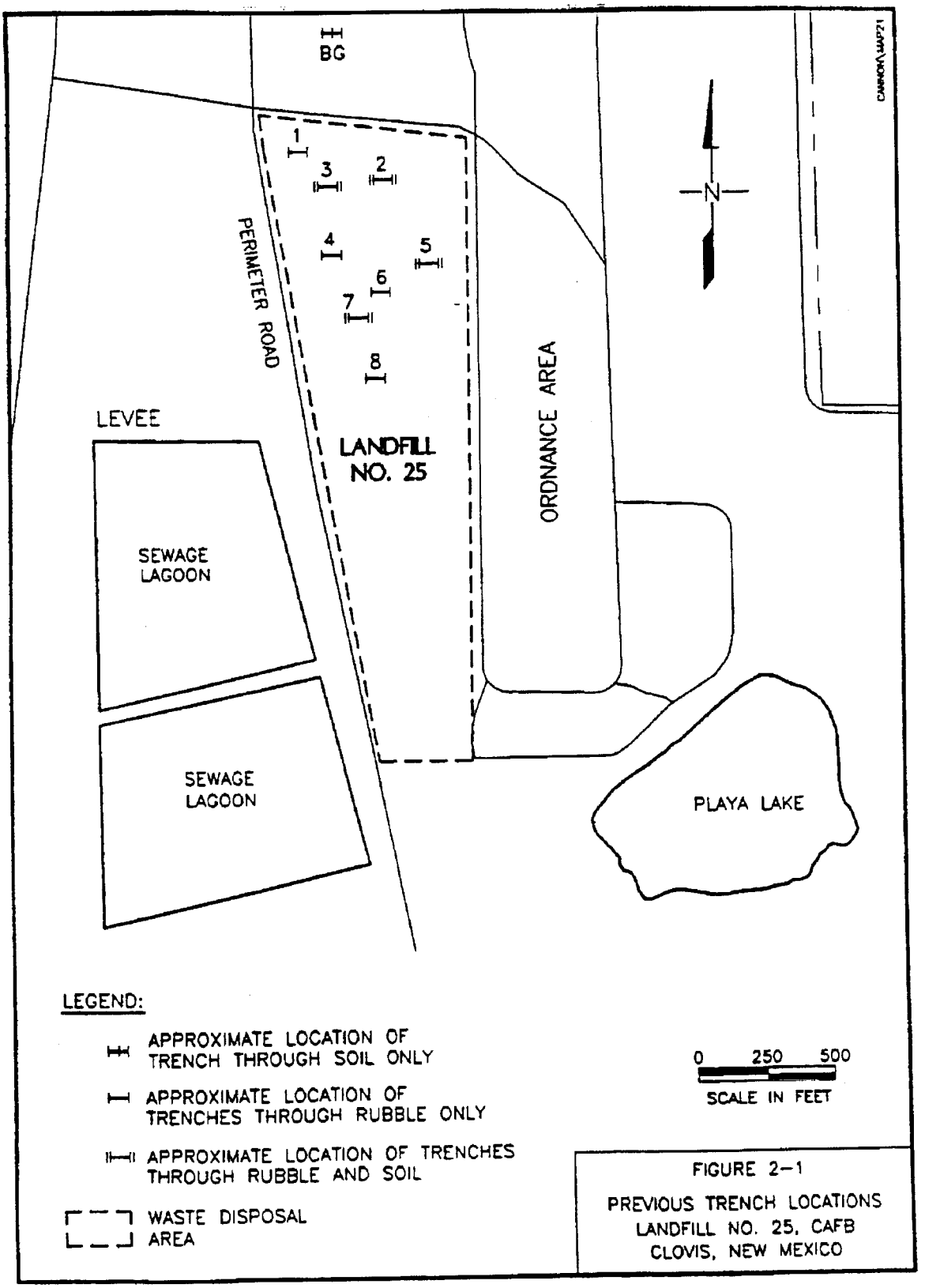


FIGURE 2-1
PREVIOUS TRENCH LOCATIONS
LANDFILL NO. 25, CAFB
CLOVIS, NEW MEXICO

Table 2-2

Summary of Analytical Results of Rubble (From 1990 Environmental Assessment)

Trench	Asbestos	PCBs	TCLP				
			Extractable Organics	Volatile Organics	Herbicides	Pesticides	Metals
	percent	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
1	<0.25*	ND					
2	ND	ND	ND	ND	ND	ND	Ba- 0.8 Hg- 0.002
3	ND	ND	ND	ND	ND	ND	Ba- 1.3 Cd- 0.01
4	ND	ND					
5	ND	ND	ND	ND	ND	ND	Ba- 0.8
6	ND	ND					
7	ND	ND					
8	ND	ND	ND	ND	ND	ND	Ba- 0.2

*<0.25 percent actinolite asbestos

Table 2-3

Summary of Analytical Results of Soils (From 1990 Environmental Assessment)

Trench	0 to 1 Foot Below Natural Ground				4 to 5 Feet Below Natural Ground				Notes
	VOA	SVOA	Pest/ PCBs	Metals	VOA	SVOA	Pest/ PCBs	Metals	
	µg/kg	µg/kg	µg/kg	mg/kg	µg/kg	µg/kg	µg/kg	mg/kg	
2	ND	Bis- 3400	ND	As- 2.4 Ba- 63.9 Cd- 1.8 Co- 3.1 Cr- 5.9 Cu- 5.0 Hg- 0.03 Mn- 85.0 Mo- 28.0 Ni- 7.9 V- 12.8 Zn- 14.6	ND	ND	ND	As- 1.7 Ba- 121 Cd- 2.9 Co- 3.3 Cr- 9.6 Cu- 4.5 Hg- 0.01 Mn- 57.0 Mo- 47.8 Ni- 7.1 Se- 1.6 V- 17.7 Zn- 19.6	Bis=Bis(2-ethyl-hexyl)phthalate
3	ND	ND	ND	As- 1.7 Ba- 82.1 Cd- 8.5 Co- 3.8 Cr- 10.3 Cu- 20.2 Hg- 0.02 Mn- 138 Ni- 7.8 Se- 0.6 V- 17.8 Zn- 31.6	ND	Ben- 2000	ND	As- 3.0 Ba- 705 Cd- 33.3 Co- 5.2 Cr- 9.4 Cu- 2.3 Hg- 0.02 Mn- 68.2 Mo- 9.2 Ni- 1.5 V- 27.0 Zn- 23.1	Ben=Benzidine 14 SVOA Tentatively identified compounds were also detected in the 4- to 5-foot sample
5	ND	ND	ND	As- 2.9 Ba- 108 Cd- 4.7 Co- 6.7 Cr- 15.4 Cu- 8.3 Hg- 0.65 Mn- 198 Mo- 106 Ni- 13.1 V- 27.9 Zn- 36.9	ND	ND	ND	As- 2.9 Ba- 537 Cd- 3.2 Co- 5.3 Cr- 8.0 Cu- 4.5 Hg- 78.7 Mn- 57.9 Mo- 9.6 Ni- 1.8 V- 21.7 Zn- 18.9	

Table 2-3

(Continued)

Trench	0 to 1 Foot Below Natural Ground				4 to 5 Feet Below Natural Ground				Notes
	VOA	SVOA	Pest/ PCBs	Metals	VOA	SVOA	Pest/ PCBs	Metals	
	µg/kg	µg/kg	µg/kg	mg/kg	µg/kg	µg/kg	µg/kg	mg/kg	
5 (QC Sample)	ND	ND	ND	As- 2.4 Mn- 175 Ba- 85.9 Mo- 32.7 Cd- 1.8 Ni- 11.8 Co- 3.8 Se- 0.3 Cr- 9.1 V- 19.2 Cu- 6.6 Zn- 23.5 Hg- 0.03					
7	ND	ND	ND	As- 2.2 Mn- 89.6 Ba- 408 Mo- 47.0 Cd- 3.0 Ni- 9.7 Co- 4.3 Se- 1.0 Cr- 9.3 V- 16.4 Cu- 8.8 Zn- 24.6 Hg- 0.07	ND	ND	ND	As- 2.7 Mn- 155 Ba- 199 Mo- 69.0 Cd- 45.5 Ni- 11.1 Co- 5.4 Se- 2.7 Cr- 12.3 V- 20.8 Cu- 6.1 Zn- 30.1 Hg- 0.02	
Back-ground	ND	ND	ND	As- 2.8 Mn- 176 Ba- 94.7 Mo- 83.2 Cd- 4.6 Ni- 11.7 Co- 5.9 Se- 1.9 Cr- 11.6 V- 22.3 Cu- 6.5 Zn- 30.7 Hg- 0.07	ND	ND	ND	As- 2.3 Mn- 48.8 Ba- 106 Mo- 46.9 Cd- 2.8 Ni- 8.3 Co- 3.2 Se- 1.9 Cr- 7.8 V- 15.4 Cu- 4.1 Zn- 18.1 Hg- 0.03	1 SVOA Tentatively identified compound was also detected in the 0- to 1- foot sample

specific analyses required. A Field Sampling Plan (FSP) was prepared using the specific investigation provided in the Scope of Services. The FSP was prepared and approved by USACE in 1992 (Radian, 1992).

The original site-specific objectives in the Scope of Services were to further define and confirm subsurface contamination and to delineate the extent of two burnpit areas located during the Environmental Assessment. Between receipt of the Scope of Services and FSP preparation, a site visit of Landfill No. 25 was conducted. During this site visit, it became apparent that, due to the absence of surveyed locations and the lack of surface evidence, the former trenching locations could not be located accurately. The delineation of the two burnpits within a larger landfill would not provide additional information as to the overall extent of contamination. Consequently, the USACE determined that delineation of the burn pit areas would not be included in this RFI effort.

2.3.1 Purpose and Objectives

The purpose of this investigation, as stated in the Scope of Services and modified as a result of the site visit, is to determine if contamination associated with landfill waste has migrated into native soils underlying it. Specific objectives include the following:

- Soil borings will be drilled and sampled in the vicinity of the former trench locations where evidence of contamination had been detected. Analysis of these samples will provide data on contaminant concentrations below source areas.
- Trenches will be excavated and sampled in the previously uninvestigated south half of the landfill. This investigation will provide information on contaminants in native soils throughout the remainder of the known landfill area.

- Deep (60-foot) soil borings will be drilled and sampled throughout much of the landfill to determine the presence or absence of landfill related contamination at depth.
- Risks to human health and the environment associated with site contaminants and their potential mobilization will be evaluated.

2.3.2 Scope and Rationale of the Field Investigation Program

The scope of the field investigation was to make basic field observations and collect a series of soil samples from soil borings and trenches. The specific sampling locations were designated in the Scope of Services (USACE, 1992). The following is a description of the sampling locations and a discussion of the rationale for the various samples. Table 2-4 summarizes the boring and trench depths and the sample intervals.

Borings near previous trench locations

Nine borings were completed in the approximate locations of former trenches 2, 3, 4, and 8. Two borings were completed in each of former trench locations 2, 4, and 8; three borings were completed in former trench location 3 (Figure 2-2).

Two 10-foot BNS (Below Native Soil) borings were completed in each of former trench locations 2 and 4. A 10-foot BNS boring and a 60-foot BNS boring were completed in former trench location 8. Two 10-foot BNS borings and a 60-foot BNS boring were completed in former trench location 3. Samples were collected at the native soil surface and every 5 feet for the entire depth of boring.

The rationale for the 10-foot BNS borings in the former trench locations was to determine if contamination migrated from the rubble into the native soil. The 60-foot BNS borings were intended to determine the presence of contamination at depth.

Table 2-4
Landfill No. 25 Soil Sampling

Location #	Trench	Boring	Total Depth	Sample Intervals
BG		x	60 ft.	S, every 5 ft.
1	o			
2a		x	10 ft.	S, 4-6 ft., 8-10 ft.
2b		x	10 ft.	S, 4-6 ft., 8-10 ft.
3a		x	10 ft.	S, 4-6 ft., 8-10 ft.
3b		x	10 ft.	S, 4-6 ft., 8-10 ft.
3c		x	60 ft.	S, every 5 ft.
4a		x	10 ft.	S, 4-6 ft., 8-10 ft.
4b		x	10 ft.	S, 4-6 ft., 8-10 ft.
5	o			
6	o			
7	o			
8a		x	10 ft.	S, 4-6 ft., 8-10 ft.
8b		x	60 ft.	S, every 5 ft.
9		x	60 ft.	S, every 5 ft.
10		x	60 ft.	S, every 5 ft.
11		x	60 ft.	S, every 5 ft.
12	x		8 ft.	S, I, 6-8 ft.
13	x		8 ft.	S, I, 6-8 ft.
14		x	60 ft.	S, every 5 ft.
15	x		8 ft.	S, I, 6-8 ft.
16	x		8 ft.	S, I, 6-8 ft.
17	x		8 ft.	S, I, 6-8 ft.
18	x		8 ft.	S, I, 6-8 ft.
19	x		8 ft.	S, I, 6-8 ft.
20	x		8 ft.	S, I, 6-8 ft.
21	x		8 ft.	S, I, 6-8 ft.

o = From Environmental Assessment. Not resampled in RFI.
S = Surface sample
I = Rubble/soil interface

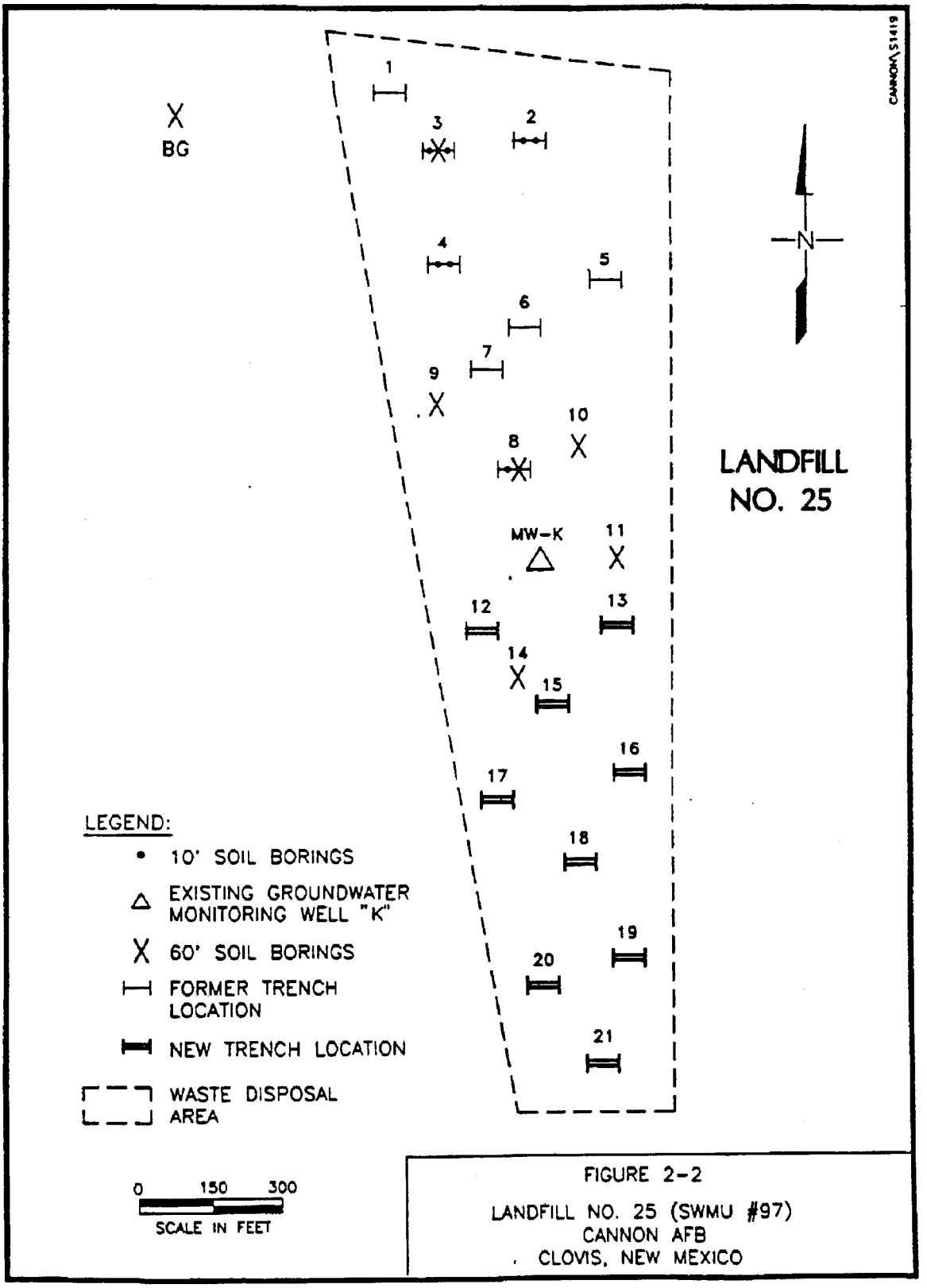


FIGURE 2-2

LANDFILL NO. 25 (SWMU #97)
CANNON AFB
CLOVIS, NEW MEXICO

New 60-foot BNS borings

A total of five 60-foot BNS borings was completed at previously unsampled locations. A background boring (BG) was drilled west of Perimeter Road and north of the sewage lagoons. The other four borings (9, 10, 11, and 14) were drilled near the middle of the site (Figure 2-2). Soil samples were collected at the native soil surface and every 5 feet for the entire depth of boring.

The rationale for these borings was to sample at locations down-gradient, both hydrologically and topographically, from the previously discovered area of contamination.

Trenches

Nine trenches were excavated in the southern half of the site. The trenches are labeled 12, 13, and 15 through 21 on Figure 2-2. The trenches were excavated through the rubble and 8 feet into the native soil. Samples were collected at land surface, at the interface between the rubble and the native soil, and from 6 to 8 feet BNS.

Since the Environmental Assessment trenches were all completed in only the northern portion of the site, this additional trenching was necessary to fully characterize the entire site.

2.3.3 Laboratory Samples and Analysis

A total of 139 soil samples, plus 14 Quality Control (QC) duplicates, and 14 Quality Assurance (QA) splits were collected (Table 2-5) and analyzed for the following:

Table 2-5

Frequency of Field Samples Per Sampling Locations (Exclusive of Duplicates, QA/QC Samples)

Borehole/Trench Number	Analytes							
	VOC (8240)	SVOC (8270)	Herbicides (8150)	Pest/PCB (8080)	TPH (8015M)	TRPH (418.1)	Metals	Geotech
BG	13	13	3	13	3	13	13	2
2a	3	3	1	3	1	3	3	2
2b	3	3	1	3	1	3	3	2
3a	3	3	1	3	1	3	3	2
3b	3	3	1	3	1	3	3	2
3c	13	13	3	13	3	13	13	2
4a	3	3	1	3	1	3	3	2
4b	3	3	1	3	1	3	3	2
8a	3	3	1	3	1	3	3	2
8b	13	13	2	13	2	13	13	2
9	13	13	3	13	3	13	13	2
10	13	13	3	13	3	13	13	2
11	13	13	3	13	3	13	13	2
12	3	3	1	3	1	3	3	2
13	3	3	1	3	1	3	3	2
14	13	13	2	13	2	13	13	2
15	3	3	1	3	1	3	3	2
16	3	3	1	3	1	3	3	2
17	3	3	1	3	1	3	3	2
18	3	3	1	3	1	3	3	2
19	3	3	1	3	1	3	3	2
20	3	3	1	3	1	3	3	2
21	3	3	1	3	1	3	3	2

- Volatile Organic Compounds (SW-846:8240);
- Semi-volatile Organic Compounds (SW-846:8270);
- Total Metals (SW-846:6010 and AA);
- Total Recoverable Petroleum Hydrocarbons (EPA Method 418.1);
- Pesticides/PCBs (SW-846:3520/8080); and,
- pH (SW-846:9045).

Thirty-five soil samples, excluding QA and QC samples, were analyzed for Total Petroleum Hydrocarbons (SW-846:8015M) and Herbicides (SW-846:8150). In order to have a representative population, one soil sample for each 10-foot soil boring or trench excavation and two or three soil samples for each 60-foot soil boring were collected and analyzed for Total Petroleum Hydrocarbons and Herbicides (See Table 2-5).

Forty-six samples were collected for geotechnical analysis. Two samples from each boring were collected at the discretion of the on-site geologist to typify the subsurface geology of the site.

3.0 FIELD ACTIVITIES

Field work was completed according to the following schedule:

28 September - 29 September, 1992:	Site survey, clear access paths.
30 September - 13 October, 1992:	Soil boring and sampling.
13 October - 16 October, 1992:	Trenching and sampling.
18 October, 1992:	Survey

The following list names the subcontractors hired for this Remedial Investigation and the work they performed:

- Lydick Engineers and Surveyors, Inc. of Clovis, New Mexico completed the sieve analysis of the geotechnical samples and completed both site surveys.
- Southwest Engineering, Inc. of Las Cruces, New Mexico was subcontracted to provide all drilling services.
- Radian Analytical Services of Austin, Texas was subcontracted to provide all analytical services.

3.1 Sample Collection Procedures

Following is a brief description of the methodology used to collect samples from soil borings and trench excavations. A more detailed description can be found in Section 3.0 of the Field Sampling Plan.

Soil Boring Samples

Soil samples were collected from the borings using a CME-55 drill rig and a 3-inch diameter 2-foot long stainless steel split-spoon soil sampler. The split-spoon sampler

was driven through 6 ⅝-inch OD hollow stem augers according to ASTM Methods D-1586-84 and D-3550. Standard Penetration Test (SPT) methodology was followed. The split-spoon sampler was attached to a sampling rod and lowered into the hollow-stem continuous-flight auger. A 140-lb. hammer and anvil were attached to the top of the sampling rods. The sampler was seated into place with a single hammer blow. By successively raising and dropping the weight, the sampler was driven into the soil.

Immediately after opening the split-spoon sampler, organic vapor was monitored with an HNu field screening device. The soil necessary for volatile organics and purgeable TPH analyses was collected and placed in 60-mL short, wide-mouth glass jars. The site geologist recorded the physical characteristics of the soil following the guidelines of Section 16.5 of the Scope of Services (USACE, 1992). The description of the soil physical characteristics is recorded on the boring logs (Appendix C). The soil remaining in the split-spoon sampler was packed into three 250-mL (8-ounce) wide-mouth clear glass sample jars leaving some headspace. If the volume of soil recovered in the split-spoon sampler was inadequate to fill the jars, the driller augured out the interval just sampled and pushed the sampler to collect more soil. The recovered soil was composited with the previously recovered soil and packed into the three 250-mL jars, and the sampling interval was recorded in the field log book.

Trench Excavation Samples

Rubble was cleared from the trench locations with a bulldozer prior to sampling. For each trench location, a soil sample was collected from the ground surface before the trench was excavated. As with the split-spoon soil samples, HNu readings were taken on the excavated soil that was sampled. The volatile organics and purgeable TPH samples were collected first and packed without headspace into 60-mL short, wide-mouth glass jars. Enough soil to fill three 250-mL jars was then collected and composited in a stainless steel pan.

A soil sample was then collected from immediately below the interface between the native soil and the rubble. The volatile organics and purgeable TPH samples were collected first, and the samples for remaining analytes were collected and composited as described above. A third sample was collected during trench excavation from between 6 and 8 feet BNS.

When a trench was excavated to 6 feet BNS, the trackhoe bucket was washed with a low phosphate detergent and potable water followed by a de-ionized water rinse. The next bucket of soil excavated from the trench was sampled by collecting soil from the center of the bucket. The volatile organics and purgeable TPH samples were collected first and packed into 60-mL jars without leaving any headspace. Soil for the remaining samples was collected and composited in a stainless steel pan.

Geotechnical Samples

Two geotechnical samples per boring and trench were collected by the site geologist and put into heavy-duty Ziploc® freezer bags. The bags were marked with indelible ink showing the boring number, the depth from which the sample was collected, and the date and time of sample collection. The geotechnical samples were stored in a sealed drum on site until the laboratory results indicated which samples were contaminated. RCRA Subpart S Soil Action Levels were used as the basis of determination. All geotechnical samples were submitted for analysis.

3.2 Sample Identification

A sample identification procedure was developed by the USACE to ensure uniformity of sample labels. All sample names took the form of CAN97-XXx-NN, where "CAN" indicates the samples were taken from Cannon AFB and "97" is the SWMU designation for LF No. 25. Next, XXx indicates the field identifier of the soil boring or trench excavation. Finally, NN is either a two-digit number ranging from 01 to 13 or the

letter "S" or "I". The numbers and letters represent different depths for the soil borings and trench excavations. For the 60-foot soil borings, 01 indicates native soil surface sample (as opposed to the surface sample), 02 indicates the 5-foot BNS sample, and so on, in 5-foot increments until 13 indicates the 60-foot BNS sample. For the 10-foot soil borings, "S" indicates the native soil surface sample, "I" indicates the 5-foot BNS sample, and 06 indicates the 10-foot BNS sample. Finally, for the trench excavations, "S" indicates the surface sample (even if the surface consists of rubble detritus), "I" indicates the sample taken just below the interface between the rubble and the native soil, and "06" indicates the sample taken from 6 to 8 feet BNS (See Table 3-1).

3.3 Sample Handling

All samples were kept cool after collection and during shipment. The samples were placed in coolers. Ice was placed in Ziploc bags above and around the top of the sample contaminers. The remaining space was filled with additional packing material. The chain-of-custody form was completed and sealed in a plastic Ziploc bag and attached to the inside top lid of the cooler. The cooler was completely wrapped with strapping tape around both ends. The cooler was labeled "This Side Up" on each side. Custody seals were placed across the opening to indicate if tampering had occurred. More details on sampling packing can be found in Appendix A of the Field Sampling Plan.

3.4 Field Quality Assurance/Quality Control Program

The following paragraphs discuss the field QA/QC program. A more comprehensive description of the QA/QC program is provided in the QAPP.

Table 3-1

Explanation of Depth Field in Sample Identification System

Boring or Trench	60-foot Borings	10-foot Borings	Trench Excavations
Rubble Surface			S
Native Soil Surface	01	S	
Just Below Rubble/Native Soil Interface			I
5 feet BNS	02	I	
6-8 feet BNS			06
10 feet BNS	03	06	
15 feet BNS	04		
20 feet BNS	05		
25 feet BNS	06		
30 feet BNS	07		
35 feet BNS	08		
40 feet BNS	09		
45 feet BNS	10		
50 feet BNS	11		
55 feet BNS	12		
60 feet BNS	13		

3.4.1 Decontamination of Sampling Equipment

To ensure that soil sampling equipment was not contaminated or cross-contaminated by materials and equipment used in the course of the investigation, *Standard Operating Procedure 15* (Appendix A of FSP) was followed. The following procedures were used to decontaminate all sampling equipment:

- Wash with LIQUINOX detergent;
- Rinse with potable water;
- Rinse with reagent-grade isopropanol;
- Rinse twice with laboratory reagent-grade water;
- Allow to air dry protected from wind and dust; and
- Wrap in foil or visqueen if equipment not used immediately.

The drilling augers and spilt-spoon samplers were decontaminated with a high-pressure, high-temperature steam cleaner between each boring. The trackhoe bucket was washed according to the above procedure, but without the isopropanol wash, between each trench. The back end of the drill rig was decontaminated with the steam cleaner between each borehole. Rinse water was contained in pump sprayers to prevent used rinse water from contaminating subsequent samples. Wash and rinse water used during all decontamination activities was containerized in 55-gallon drums for subsequent analysis and disposal.

3.4.2 QA/QC Samples

The total number of QA/QC samples collected is listed in Table 3-2, and the collection frequency of QA/QC samples per location is listed in Table 3-3.

Table 3-2

Analytical Sample Counts - Landfill No. 25

Chemical Analyses (Method [a] No.)	Base Samples	Field Dups	Equip Rinse	Trip Blank [b]	Amb Blank	MS/MSD	Analyt Dups	Radiau Sample Count [c]	QA Splits	QA Rinse	QA Trip Blanks	Total QA Sample Count [d]	Total Sample Count [c]
Matrix	Soil	Soil	Water	Water	Water	Soil	Soil	--	Soil	Water	Water	--	--
Volatile Organics (8240)	139	14	0	14	0	14	0	167	14	0	14	28	195
Top 10 TIC's	139	14	0	14	0	0	0	167	0	0	0	0	167
SVOC's - soils - (8270)	139	14	7	0	0	14	0	160	14	7	0	22	181
SVOC Top 20 TIC's	139	14	7	0	0	0	0	160	0	0	0	0	160
Herbicides (8150)	35	4	2	0	0	4	0	41	14	7	0	22	62
Pesticides and PCBs - soils-(8080)	139	14	7	0	0	14	0	160	14	7	0	22	181
TPH by modified 8015	35	4	2	0	0	4	0	41	14	7	0	22	62
TRPH (EPA 418.1)	139	14	7	0	0	14	0	160	14	7	0	22	181
Metals [e] (6010, 7060, 7421, 7471, 7740)	139	14	7	0	0	14	0	160	14	7	0	22	181
% Moisture (SW-846) for corr. to dry weight	139	14	0	0	0	0	0	153	0	0	0	0	153
pH (9045)	139	14	0	0	0	0	0	153	0	0	0	0	153

TIC - Tentatively Identified Compounds.
SVOC - Semi-volatile Organic Compounds.
PCB - Polychlorinated Biphenols.
TPH - Total Petroleum Hydrocarbons.
TRPH - Total Recoverable Petroleum Hydrocarbons.
ICPES - Inductively Coupled Plasma Emission Spectroscopy.

[a] Reference Methods from SW-846 Test Methods For Evaluating Solid Wastes. Physical/Chemical Methods. November 1986, third edition.
[b] One trip blank per cooler containing volatile organics or TPH (purgeables) samples.
[c] Sample count does not include MS/MSD.
[d] All QA samples will be submitted to USACE Missouri River Division (MRD) Laboratory for analysis.
[e] ICPES metals: aluminum, antimony, barium, beryllium, cadmium, calcium, chromium, cobalt, copper, iron, magnesium, manganese, nickel, potassium, silver, sodium, thallium, tin, vanadium and zinc. Other metals: arsenic, lead, selenium and mercury.

Table 3-3

Frequency of QA/QC Samples Per Sampling Locations

Borehole/ Trench Number	Type - T, 10, 60 *	Short List Duplicate *	Full List Duplicate *	Full List MRD Split *	Short List MS/MSD *	Full List MS/MSD *	Short List QC (Radian) Rinse *	Full List QC (Radian) Rinse *	Full List QA (MRD) Rinse	CLP Data Valid. Sample *
BG	60		1	1		1		1	1	30 feet
2a	10			1						0 feet
2b	10	1								0 feet
3a	10			1			1		1	8 feet
3b	10									--
3c	60		1	1	1					--
4a	10	1								4 feet
4b	10			1			1		1	0 feet
8a	10									4 feet
8b	60	1		1		1				45 feet
9	60	1		1	1		1		1	25 feet
10	60	1		1						--
11	60		1	1	1					15 feet
12	T			1			1		1	6 feet
13	T	1			1					--
14	60		1	1						40 feet
15	T			1						I
16	T	1					1		1	--
17	T	1			1					--

Table 3-3

(Continued)

Borehole/ Trench Number	Type – T, 10, 60 [a]	Short List Duplicate [b]	Full List Duplicate [c]	Full List MRD Split [d]	Short List MS/MSD [e]	Full List MS/MSD [f]	Short List QC (Radian) Rinse [g]	Full List QC (Radian) Rinse [h]	Full List QA (MRD) Rinse	CLP Data Valid. Sample [j]
18	T			1						--
19	T	1								1
20	T			1				1	1	--
21	T	1								--

[a] T = 8-foot trench, 10 = 10-foot boring, and 60 = 60-foot boring.

[b] Short list duplicate to be duplicate of short list field sample. Short list duplicate includes VOCs (8240), Metals, TRPH (418.1), SVOCs (8270), and Pesticides/PCBs (8080). See Table 3-4.

[c] Full list duplicate to be duplicate of full list field sample. Short list duplicate includes VOCs (8240), purgeable TPH (8015M), Metals, TRPH (418.1), SVOCs (8270), extractable TPH (8015M), Pesticides/PCBs (8080), and Herbicides (8150). See Table 3-4.

[d] All QA (MRD) splits will be full list splits of full list field samples.

[e] Short list MS/MSD samples include those analyses listed in note b. MS/MSD samples not separate field samples -- taken by laboratory personnel from designated field samples.

[f] Full list MS/MSD samples include those analyses listed in note c. MS/MSD samples not separate field samples -- taken by laboratory personnel from designated field samples.

[g] Short list QC rinse samples collected in 1-liter bottles, one each for Metals (6010, 7060, 7421, 7471, 7740), TRPH (418.1), SVOC (8270), Pesticides/PCBs (8080). See Table 3-7. Send to Radian Laboratory.

[h] Full list QC rinse samples same as note g, except also collect Herbicides (8150) and extractable TPH (8015M) samples.

[i] All QA rinse samples are full list and will be collected in 1-Liter bottles, two bottles each for Metals (6010, 7060, 7421, 7471, 7740), TRPH (418.1), SVOC (8270), Pesticides/PCBs (8080), Herbicides (8150), and extractable TPH.

[j] CLP data validation samples are not collected as separate samples. The designated CLP samples are indicated on the chain-of-custody by marking "CLP" in the remarks column or in the left margin.

QA and QC Split Samples

Ten percent of samples were collected for QA and QC split samples, respectively. The soil was homogenized and divided equally among all containers for both standard and duplicate samples, with the exception of samples collected for volatile organics or purgeable (light) TPH analyses. To minimize volatilization, samples collected for either volatile organics or purgeable-TPH analyses were split but not homogenized. The QA split samples were sent to Missouri River Division (MRD) Laboratory as described in Section 4.0 of the FSP. The QC samples were analyzed by Radian Analytical Services.

Matrix Spike and Matrix Spike Duplicate (MS/MSD) Samples

Matrix spike and matrix spike duplicate (MS/MSD) samples were collected at a rate of 5% for each chemical analyte. For all analyses except volatile organics and purgeable TPH, the soil was homogenized. The MS/MSD samples were not collected as separate samples in the field. Instead, the field personnel marked the labels of the samples chosen to be MS/MSDs with the letters "MS/MSD" in indelible ink and marked the chain-of-custody in the left margin adjacent to the Sample ID. A note was made in the remarks section of the chain-of-custody designating all MS/MSD samples included. Table 3-3 shows that, for all analyses except herbicides and TPH, 14 MS/MSD analyses were performed by the Radian laboratory, seven of which were MS samples, and seven of which were MSD samples. The seven MS/MSD samples were chosen to include the full diversity of soil types found at the site.

Trip Blanks

Trip blanks consisted of 40-mL VOA vials filled by the laboratory with organic-free water. Trip blanks accompanied all ice chests that contained volatile organic or purgeable-TPH samples during both the sampling activities and the shipping procedures. The

trip blanks were then analyzed for volatile organics and purgeable TPH to show that no contamination occurred during sampling and shipping.

Equipment Rinse Samples

Equipment blanks were collected by pouring reagent-grade deionized water over decontaminated split-spoon sampling tubes and some handling equipment, and catching the rinsate in 1-liter bottles. The equipment from which the rinsate blank was collected was noted in the field log book. Each metals rinsate sample was collected in polyethylene 1-liter bottles. Rinsate samples were sent to both the MRD Laboratory and the Radian Laboratory. The rinsate locations and analyses are summarized in Table 3-3.

3.4.3 Sample Handling

All field samples were kept in a locked trailer prior to shipment. The coolers were taped shut, and a tamper-evident seal was placed across the lid. Upon arrival at the laboratory, the coolers were checked for tampering, and the samples were logged in and checked for quality control parameters (i.e., temperature, breakage, and leaking).

3.5 Site Management

3.5.1 Utility Clearance

Digging permits were required for all soil boring and trenching activities. A permit was obtained from the Base Civil Engineering Division. A scaled map with the proposed sample locations was circulated with the permit application to the Base utility groups. U.S. West conducted a field check and marked buried communication cables on the site. A 3-inch water line was the only subsurface structure of concern at Landfill No. 25. Base Safety, Fire, Security, and Environmental Divisions checked and signed the permit. Copies of the permit were kept on site for the duration of the field activities.

3.5.2 Handling of Drill Cuttings and Decontamination Water

Drill cuttings and decontamination water were drummed and clearly labeled with the following information:

- Type of material contained;
- Site number and location;
- Telephone number of the Base Environmental Coordinator (Extension 4639);
- Boring number and depth interval; and
- Date of sampling activity.

An indelible-paint pen was used to mark this information on the sides of the drums.

Water collected from decontamination activities was considered potentially contaminated and was captured in a large trough. The water was pumped from the trough into drums using a small submersible pump. The drums were labeled, placed on wooden pallets, and stored with the cuttings. At the conclusion of the drilling activities, all drums were transported to Landfill No. 5 for temporary storage.

3.5.3 Sampling Site Preparation

Before sampling began, paths through the rubble were cleared with a bulldozer to enable the drill rig to reach the sampling locations. Since no survey had been made of the trench locations during the December 1990 investigation (USACE, 1990), only approximate locations were known. For this RFI, surveyors marked the approximate locations for the former trenches based on field observations. New trenches and boring locations were marked and cleared.

3.5.4 Site Restoration

All borings were backfilled with a cement/bentonite slurry according to Appendix A of the Field Sampling Plan. The trenches were backfilled with the excavated soil/rubble. Debris was moved by trackhoe to block access road entrances. Due to the access path construction, the site was not restored to its exact original state. The site was left neat and orderly, and the restoration efforts met the approval of the CAFB Base Environmental Coordinator's office.

3.5.5 Field Documentation

A field log book was used to document all field activities. All important observations made during on-site work were recorded in the field log book. The book is bound, with sequentially numbered pages; only indelible ink was used. After the completion of the field activities, the book was copied, and the original and copy are stored in two separate secured areas.

3.5.6 Surveying

At the conclusion of the project, Lydick Engineers returned to the site and surveyed the boring locations and the four corners of the trenches excavated during this investigation. A base map was generated (See Plate 1) to show the major site features (i.e., roads and fences) in addition to the sampling locations.

3.6 Deviations From Intended Sampling Locations

Following is a brief list of those samples that were collected from locations other than those previously specified in this chapter.

3.6.1 Soil Borings

Table 3-4 lists the soil boring samples that were taken from locations other than those originally proposed.

3.6.2 Trenches

The proposed sampling called for collection of a rubble sample and a native soil surface sample. The thickness of the rubble on the southern half of the site, however, varies from nonexistent to approximately three feet. Rubble was absent at trenches 12, 16, 18, and 19, so the "I" samples were collected within six inches below the surface samples in these trenches.

3.6.3 Resampling

On two occasions, the quality control program identified samples that were damaged during transportation. The surface sample from boring BG and all of the samples from boring 3a were compromised when water (from melted ice) penetrated the sample containers. On another occasion, samples CAN97-3a-I, CAN97-8a-I, CAN97-9-01, and CAN97-9-07, and all samples from boring 8a reached the lab above the required 4°C temperature. If any samples other than surface samples were damaged, the entire boring was redrilled and resampled. Because of this, borings 3a, 8a, 8b, and 9 have multiple locations designated as 3aa, 3aaa, etc. (See Plate 1).

Table 3-4

Alternative Soil Boring Sample Locations

Sample I.D.	Sampled from:	Reason
CAN97-BG-04	14-18 ft. BNS	Needed two spoons for adequate sample
CAN97-BG-06	No sample	Insufficient recovery
CAN97-09-11	49-53 ft. BNS	Needed two spoons for adequate sample
CAN97-11-10	46'-48'(not 44'-46')	No recovery from 44'-46' BNS
CAN97-11-11	51'-53'(not 49'-51')	No recovery from 49'-51' BNS

4.0 RESULTS

This section contains the field data from the 1992 sampling events at Landfill No. 25 and relevant conclusions made from these data. The following subsections are present:

- Overview of the 1992 sampling events and the tabulation of the detailed analytical results;
- Geologic results;
- Comparison of the field metals data to background soil metals data;
- Description of organic contaminants found at the site; and a
- Comparison of the field data to the recommended soil action levels listed in the RCRA proposed Subpart S Media Action Levels (40 CFR, Section 264.521).

4.1 Sampling Overview

A total of 14 soil borings, including a background boring, were drilled and nine trenches were excavated at Landfill No. 25. In seven of the borings, samples were collected at the native soil surface just below the rubble detritus, between 4 and 6 feet BNS (below native soil), and between 8 and 10 feet BNS. The other seven borings were sampled at the native soil surface and every 5 feet, from 5 to 60 feet BNS.

Nine trenches (locations 12 and 13 and locations 15 through 21) were excavated and sampled in the south half of Landfill No. 25. Three samples were taken at each of the trench locations. A rubble matrix sample was collected from the existing ground surface before the trench was excavated, a second sample was collected from just below the native soil and rubble interface, and a third sample was collected between 6 and 8 feet BNS. The sampling locations for all borings and trenches are shown in Figure 4-1. The designators BLS (below land surface) and BNS (below native soil) are used in

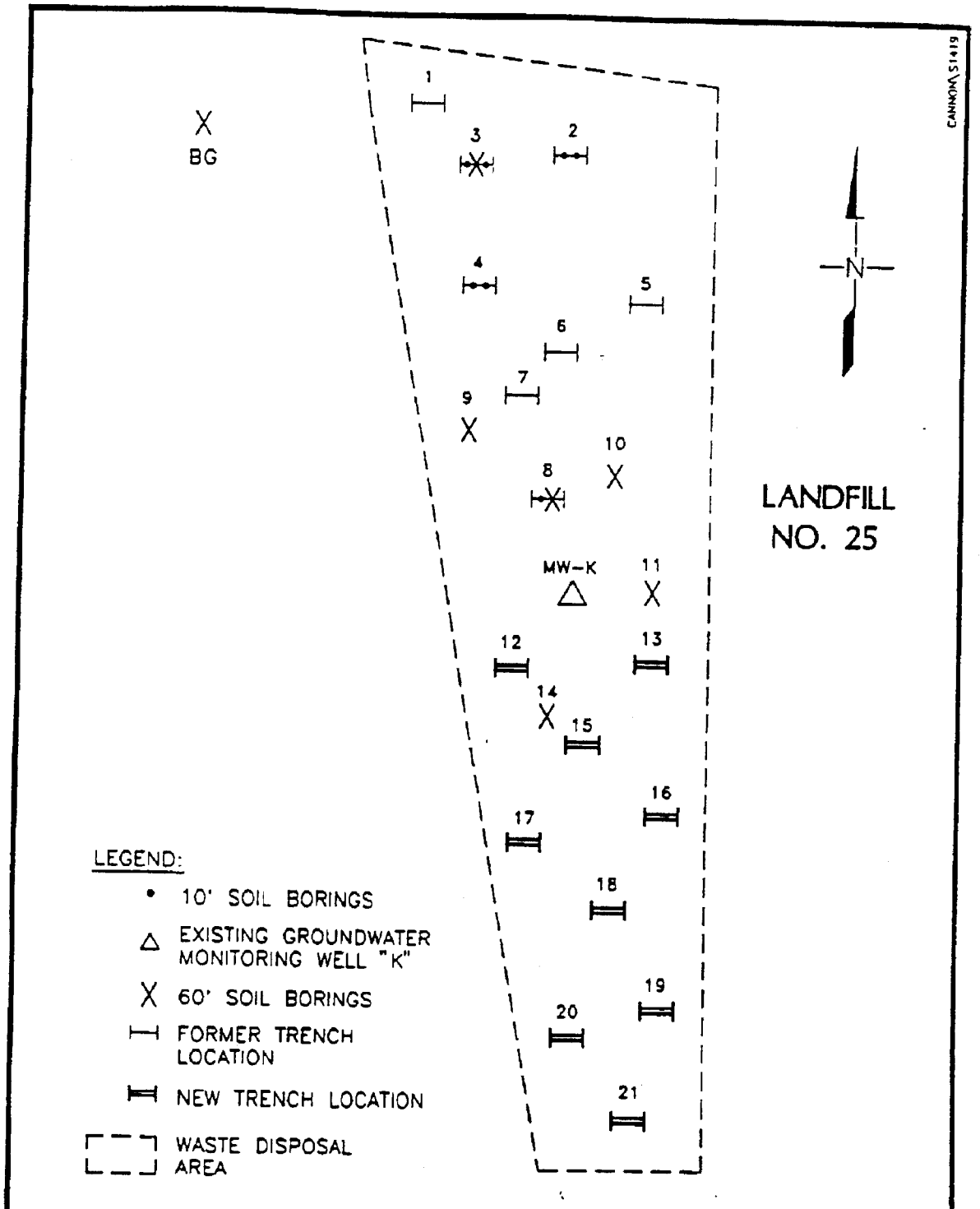


Figure 4-1

Sampling Locations
Landfill No. 25 (SWMU #97)
Cannon AFB, Clovis, New Mexico

this discussion. Where the surface is covered with rubble, BLS and BNS are not the same. The following results are presented as BLS.

This sampling program produced 139 field samples which were analyzed for organochlorine pesticides, polychlorinated biphenyls (PCBs), volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), total recoverable petroleum hydrocarbons (TRPH), total analyte list (TAL) metals, and soil pH. In addition, 40 of the field samples were also analyzed for total extractable hydrocarbons (diesel, jet fuel, and kerosene), total purgeable hydrocarbons (gasoline and its components), and chlorinated herbicides. Three additional samples were analyzed for total purgeable hydrocarbons and herbicides. The geologic results are presented in Section 4.2. The analytical results are presented in Appendix B (Tables B-1 and B-2) and will be discussed in Sections 4.3 through 4.5. Table 4-1 lists the analytical methods used to analyze these samples.

4.2 Geologic Results

The geology of Landfill No. 25 is characterized from visual observations of the surface rubble, lithologic descriptions of the soil boring and trench samples, and selected sieve analysis.

4.2.1 General Stratigraphy of Landfill No. 25

The results suggest that the material present at Landfill No. 25 can be divided into five groups. These groups, shown in the generalized geologic column (Figure 4-2), are: the surface rubble; the subsurface rubble; the soil horizon; and two divisions within the Ogallala Formation.

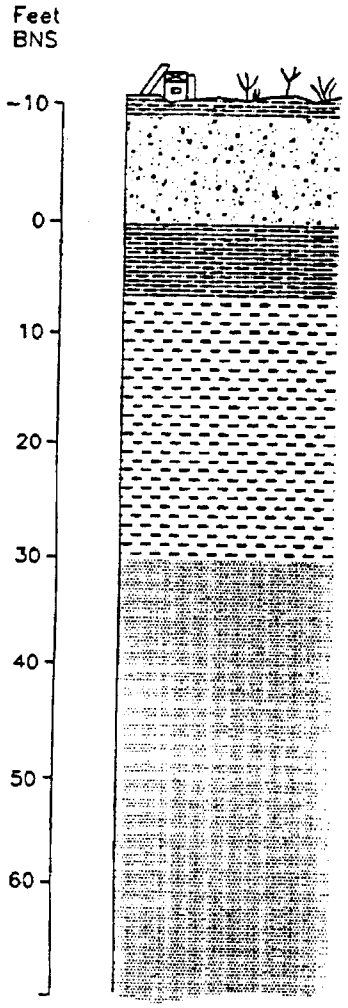
Table 4-1

Analytical Methods Used to Characterize Landfill No. 25 CAFB, Clovis, New Mexico

Parameter	Method
Organochlorine Pesticides and PCBs	SW 8080
Volatile Organic Compounds	SW 8240
Semivolatile Organic Compounds	SW 8270
Total Recoverable Petroleum Hydrocarbons	SW 9071/EPA 418.1[a]
TAL Metals - ICPES	SW 6010
Hg by CVAAS	SW 7471
As by GFAAS	SW 7060
Pb by GFAAS	SW 7421
Se by GFAAS	SW 7740
Sb by GFAAS	SW 7041
Tl by GFAAS	SW 7841
Total Extractable Hydrocarbons	SW 8015 ME[b]
Total Purgeable Hydrocarbons	SW 8015 MP[b]
Chlorinated Herbicides	SW 8150

[a] EPA 418.1 was used to analyze the extract generated using SW 9071.

[b] SW 8015 was modified according to California LUFT.



- SURFACE RUBBLE: Assorted building, runway and subgrade material.

- SUBSURFACE RUBBLE: Smaller pieces of rubble mixed with native soil.

- ARIDISOL: Minor organic layer. Calcic enriched layer. Primarily, fine sands, silts, and clays. (Coarse gravel: 0–24%, Fine gravel: 0–9%, Coarse Sand: 0.1–5%, Medium sand: 1–20%, Fine sand: 29–63%, Silt and Clay: 27–54%)

- SANDSTONE/CALICHE: Well cemented sandstone with calcite cement. Solid, but friable, pure caliche layers and nodules. A non-homogeneous mix of gravels, sands, and silts with some minor clay. (Coarse gravel: 0–37%, Fine Gravel: 0–11%, Coarse sand: 0–11%, Medium sand: 2–10%, Fine sand: 15–59%, Silt and Clay: 8–76%)

- SAND: Unconsolidated fine-grained sands with minor caliche layers. (Coarse gravel: 2–15%, Fine gravel: 1–8%, Coarse sand: 1–6%, Medium sand: 5–13%, Fine sand: 48–78%, Silt and Clay: 7–26%)

FIGURE 4-2

GENERALIZED GEOLOGIC COLUMN
LANDFILL NO. 25
CAFB, NM

269069-9300074-MIL

Surface Rubble

The surface rubble was not the focus of this investigation, but visual observations support the results of the 1990 Environmental Assessment (USACE, 1991). The surface rubble consists of construction debris, bricks, concrete blocks, tiles, concrete culvert, asphalt roofing shingles, asphalt and concrete paving, and sub-base material (USACE, 1991).

Subsurface Rubble

The subsurface rubble has a make-up similar to the surface rubble. It consists of assorted building, runway, and sub-grade material, generally 5 inches in diameter or less. Occasionally, there are large pieces of concrete or asphalt at depth. The rubble is mixed with sands and gravels that appear to be from the upper portion of the Ogallala Formation.

Soil Horizon

The soils found on Landfill No. 25 consist of a thin sandy topsoil, generally less than 4 inches thick, a large calcic zone of accumulation ranging from 2 to 3 feet thick, and a c-horizon made of broken down Ogallala Formation. Total thickness of the soil ranges from nonexistent, where eroded from wind or water, to more than 4 feet thick. On the north side of the site, where the subsurface rubble is as much as 15 feet thick, the original (i.e. pre-dumping) surface soil was evident in samples collected at the base of the rubble.

Sandstone/Caliche

The upper 25 to 30 feet of the Ogallala Formation underlying Landfill No. 25 is a well cemented sandstone with extremely hard caliche layers and nodules. The

caliche ranges from the consistency of concrete to a more friable material that can be crumbled by hand. The sands are well cemented, red to white, and medium to fine grained.

Sand

By 30 feet BNS, the Ogallala Formation consists of unconsolidated sand. The sand is red to white, fine to medium grained, and well sorted. Some caliche layers are present, but not nearly as abundant as in the top 25 feet.

4.2.2 Geologic Cross Sections

Two site specific cross sections were completed from the soil boring data. Figure 4-3 is a cross section through borings 3c, 4a, 9, 8b, and 14. Figure 4-4 is a cross section through borings 2, 10, and 11. The boring logs are included as Appendix C.

4.2.3 Sieve Analysis

Forty-seven samples were sieve analyzed for grain size. The cumulative results are shown in Table 4-2 and the original results from the laboratory are included as Appendix E.

4.3 Comparison of the Field Results to Site Specific Background Metals Concentrations

Site specific background metals data were determined from background soil boring samples taken west of Perimeter Road and north of the sewage lagoons at depths ranging from 0 to 60 feet. A statistical analysis of the background data was used to calculate an upper tolerance limit (UTL) for the metals in the Landfill No. 25 soil.

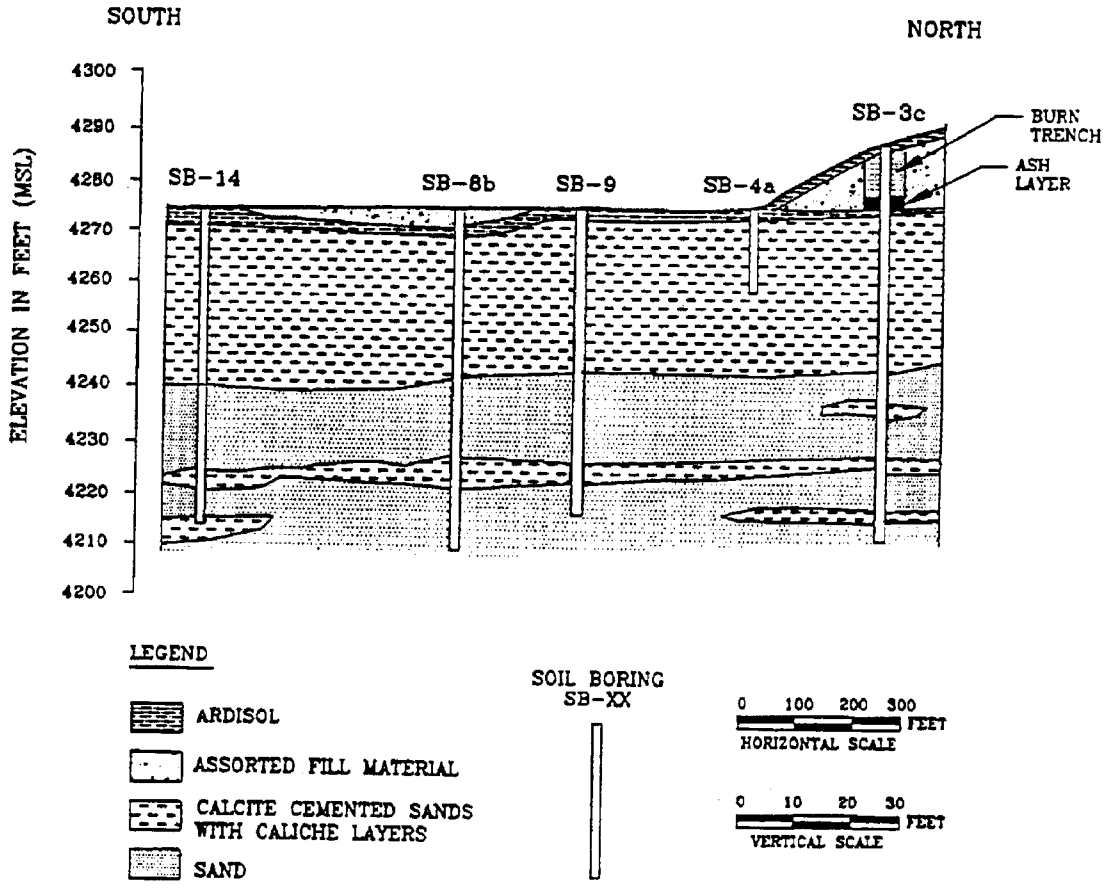
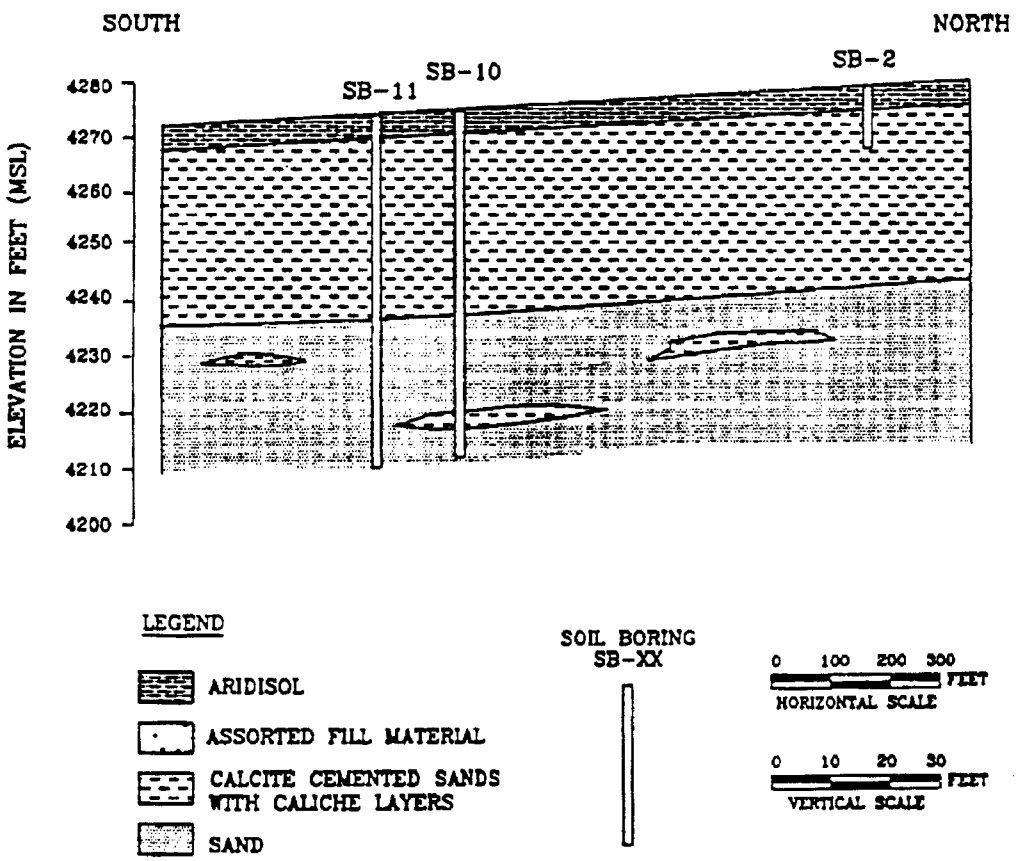


FIGURE 4-3

CROSS SECTION THROUGH BORINGS
3c, 4a, 8b, 9 AND 14
LANDFILL NO. 25

269069-9300073-MIL



CANNON\SOIL4

FIGURE 4-4

CROSS SECTION THROUGH BORINGS
2, 10 AND 11
LANDFILL NO. 25

Table 4-2

Grain Size per Major Geologic Division

Material	%Coarse Gravel	%Fine Gravel	%Coarse Sand	%Medium Sand	%Fine Sand	%Silt/ Clay
Soil	0-24	0-9	0-5	1-20	29-63	27-54
Sandstone - caliche	0-37	0-11	0-11	2-10	15-59	8-76
Sand	2-15	1-8	1-6	5-13	48-78	7-26

Coarse gravel: $x > 20$mm
Fine gravel: 5mm $< x < 20$mm
Coarse sand: 2mm $< x < 5$mm
Medium sand: 0.5mm $< x < 2$mm
Fine sand: 0.08mm $< x < 0.5$mm
Silt/clay: $x < 0.08$mm (Fetter, 1988)

Upper tolerance limits are calculated to establish the concentration range that will contain a specific portion (in this case 95%) of the background data with a specified level of confidence (95%). Upper tolerance limits are extreme value tests. The background data is used to define the upper tolerance limit (UTL), which is defined as the concentration that a large portion (95%) of the sample data should be below for a large proportion of the time (95%). Sample data can then be checked for evidence of contamination by determining whether they fall below the UTL. Extreme value tests, such as UTLs, are used to determine whether a site has any "hot spots", or areas of contamination.

Data exceeding the UTLs are by definition significantly greater than background concentrations for that metal. The UTLs for each constituent were calculated based on a 95% confidence level, where the UTL (95%) defines a limit such that 95% of the background results should be less than the UTL 95% of the time (i.e, a coverage of 95 percent). The background data was tested to determine if it was normally distributed about the mean. If data were found to be normally distributed, a normal test was used to determine the UTL. If the data were not normally distributed, a non-parametric test was used to determine a more conservative UTL. However, when a non-parametric test is used, the coverage may be less than 95 percent. For silver, which was not detected in the background soil samples, and thallium, which was not analyzed by graphite furnace atomic absorption (GFAAS) in any background samples, the maximum detection limit in the field samples was used as the UTL. The UTLs for the background soil are listed in Table 4-3. These procedures are consistent with the RCRA and/or EPA guidance for determining background UTLs and are described in Appendix F.

Arsenic, lead, mercury, and selenium were analyzed by atomic absorption spectroscopy (AAS); the remainder of the metals were analyzed by inductively coupled plasma emission spectroscopy (ICPES). Most samples contained high concentrations of

Table 4-3

Soil Samples Upper Background Limits
Confidence Level = 95%
for Landfill No. 25, CAFB, Clovis, New Mexico

Analyte	Method	Total Number of Results	Percent Detected (%)	Test Type	Minimum BG Rep. Limit (mg/kg)	Maximum BG Rep. Limit (mg/kg)	Maximum BG Det. Conc. (mg/kg)	Upper Background Limit (mg/kg)	Coverage (%)
Aluminum	SW6010	12	100	Normal	14	17	11000	15100	95
Antimony	SW7041	2	100	Normal	0.4	0.52	0.07	1.67	95
Arsenic	SW7060	12	100	Normal	0.28	0.60	6.9	8.65	95
Barium	SW6010	12	100	Non-Parametric	0.71	0.84	860	860	77
Beryllium	SW6010	12	100	Normal	0.14	0.17	0.48	0.62	95
Cadmium	SW6010	12	100	Normal	0.37	0.42	0.45	0.61	95
Calcium	SW6010	12	100	Normal	74	660	220000	290000	95
Chromium	SW6010	12	100	Normal	0.71	0.84	7.2	10.5	95
Cobalt	SW6010	12	100	Normal	0.74	0.84	3.2	3.9	95
Copper	SW6010	12	100	Normal	1.4	1.7	4.9	5.7	95
Iron	SW6010	12	100	Normal	3.7	4.2	6800	8840	95
Lead	SW7421	12	100	Non-Parametric	0.21	1.0	9.15	9.15	77
Magnesium	SW6010	12	100	Normal	84	84	7700	10700	95
Manganese	SW6010	12	100	Non-Parametric	0.71	0.84	140	140	77
Mercury	SW7471	12	91.7	Normal	0.037	0.054	0.06	0.08	95
Molybdenum	SW6010	12	100	Normal	3.7	4.2	0.51	0.69	95
Nickel	SW6010	12	100	Normal	1.5	6.7	12.5	16.7	95
Potassium	SW6010	12	100	Normal	220	250	2000	2850	95

Table 4-3

(Continued)

Analyte	Method	Total Number of Results	Percent Detected (%)	Test Type	Minimum BG Rep. Limit (mg/kg)	Maximum BG Rep. Limit (mg/kg)	Maximum BG Det. Conc. (mg/kg)	Upper Background Limit (mg/kg)	Coverage (%)
Selenium	SW7740	12	66.7	Normal	0.35	0.42	0.78	1.2	95
Silver	SW6010	12	0.0	None	0.71	0.84	--	--[b]	--
Sodium	SW6010	12	100	Normal	74	84	210	317	95
Thallium	SW7841	0	--	None	0.38[a]	0.51[a]	--	--[b]	--
Vanadium	SW6010	12	100	Normal	1.4	1.7	17	24	95
Zinc	SW6010	12	100	Normal	1.4	1.7	15.5	21	95

[a] Reporting limits are from field data; no background samples were analyzed for thallium by GFAAS.

[b] When the constituent was not detected in the background soils (i.e., silver and thallium), the maximum detection limit was used as the UTL.

Notes:

1. Random numbers were substituted for non detects.
2. Limits not calculated when background is all non-detect.

641 105

calcium which interfered with the antimony analyses, and the ICPES thallium detection limits were not low enough to adequately evaluate the data. Therefore 18 field samples, selected based on high detection limits or apparent hits when analyzed by ICPES, were submitted for analysis by graphite furnace atomic absorption (GFAAS). These samples are listed in a footnote to Table 4-4.

The metals data were then compared to the UTLs. Those samples containing metals concentrations greater than the UTLs are listed in Table 4-4.

4.3.1 Trenches

The trench data were compared to the calculated site-specific UTLs and samples containing at least one target metal at concentrations exceeding the UTLs are listed in Table 4-4. Twenty-one samples from eight of the sampling locations (12, 13, and 15 through 20) exceed the manganese UTL of 140 mg/kg. These surface rubble samples (0 to 2 feet) had manganese concentrations of 300, 460, and 650 mg/kg, respectively. Eight additional surface samples exceeded the manganese UTL with concentrations ranging from 140 to 250 mg/kg. Eight of the samples from the rubble/native soil interface exceeded the manganese UTL with concentrations ranging from 150 mg/kg in CAN97-19-I to 250 mg/kg in sample CAN97-16-I. Samples CAN97-19-06 (150 mg/kg) and CAN97-21-06 (140 mg/kg), from the 6 to 8 feet BLS depth interval, also exceeded the manganese UTL. Trench location 19 exhibited manganese concentrations which exceeded the manganese UTL at each of the three sampling depths.

Twenty-one of twenty-seven trench samples exceeded the background soil UTL for zinc. Surface rubble samples from eight of the locations also exceeded the UTL of 21.8 mg/kg for zinc. With the exception of samples CAN97-19-S and CAN97-20-S, which contained 130 and 63 mg/kg zinc respectively, the remaining rubble samples exceeding the UTL ranged from 22 to 36 mg/kg zinc. The only rubble/native soil

Table 4-4

Metals Found at Concentrations Greater Than the Background Soil UTLs in Field Samples From Landfill No. 25, CAFB, New Mexico, 1992

Sample ID	Depth ft. BLS	Metals (mg/kg)																				
		Aluminum	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium[a]	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Molybdenum	Potassium	Selenium	Silver[b]	Sodium	Vanadium	Zinc
Background UTL		15100	8.65	860[a]	0.62	0.61	290000	10.5	3.9	5.7	8840	9.15[a]	10700	140[a]	0.08	0.69	2850	1.2	0.84[b]	317	24.6	21.8
Trenches																						
CAN-97-12-I	4-6	--	--	--	--	--	--	12	--	7.5@	10000	--	--	180	--	--	--	--	--	--	--	27
CAN-97-12-S	0-2	18000	--	--	0.62@	--	--	15	4.2	8.2	13000	16	--	210	--	--	3200	--	--	--	29	31
CAN-97-13-06	5-7	--	--	--	--	1.1@	--	--	4.0@	--	--	--	--	--	--	--	--	--	--	--	--	--
CAN-97-13-I	4-6	--	--	--	--	--	--	13	4.3@	7.8@	11000	--	--	210	--	--	--	--	--	--	--	26
CAN-97-13-S	0-2	--	--	--	--	--	--	13	4.0@	7.3@	11000	9.3	--	230	--	--	--	--	--	--	--	28
CAN-97-13-99[a]	0-2	--	--	--	--	--	--	12	--	7.0@	10000	--	--	210	--	--	--	--	--	--	--	27
CAN-97-15-06[c, f]	6-8	--	--	--	--	--	--	--	--	--	9100	--	--	--	--	--	--	--	--	--	27	--
CAN-97-15-I	4-6	--	--	--	--	--	--	13	4.4	7.0@	12000	--	--	220	--	0.9@	--	--	--	--	--	27
CAN-97-15-S	0-2	--	--	--	--	1.2@	640000	11	--	7.8	9200	25	--	200	--	--	--	--	--	--	--	36
CAN-97-16-06	5-7	--	--	--	--	1.7@	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	22@
CAN-97-16-I	4-6	--	--	--	--	--	--	14	4.4@	8.1@	12000	--	--	250	--	--	--	--	--	--	--	30
CAN-97-16-99[a]	0-0	--	--	--	--	--	--	13	4.5	7.9@	11000	--	--	240	--	0.78@	--	--	--	--	--	29
CAN-97-16-S	0-2	--	--	--	--	--	--	14	4.1	7.6	12000	11	--	230	--	--	2900	--	--	--	25	33
CAN-97-17-06[c]	6-8	--	--	--	--	--	--	--	--	--	9100	--	--	--	--	--	--	--	--	--	--	--
CAN-97-17-I	4-6	--	--	--	--	--	--	14	4.6	7.5@	12000	--	--	240	--	0.88@	--	--	--	--	25	28
CAN-97-17-S	0-2	--	9.0	--	--	--	--	--	--	--	--	120	--	460	0.098@	--	--	--	--	--	--	--
CAN-97-18-06[c]	5-7	--	--	--	--	--	--	--	--	--	10000	--	--	--	--	0.82@	--	--	--	--	26	--
CAN-97-18-I[c]	4-6	21000	--	--	0.76@	--	--	17	5.0	9.6	15000	--	--	230	--	--	3100	--	--	--	32	35
CAN-97-18-S	0-2	--	--	--	--	--	--	--	--	7.0@	9300	14	--	210	--	--	--	--	--	--	--	26
CAN-97-19-06[c]	5-7	16000	--	--	--	--	--	13	--	6.7@	11000	--	--	150	--	0.73@	--	--	--	--	--	28
CAN-97-19-I[c]	4-6	--	--	--	--	--	--	--	--	6.7@	9100	--	--	150	--	--	--	--	--	--	--	33
CAN-97-19-S	0-2	--	--	--	--	--	--	12	--	6.4@	9900	16	--	200	--	--	--	--	--	--	--	130

Table 4-4

(Continued)

Sample ID	Depth ft. BLS	Metals (mg/kg)																				
		Aluminum	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Molybdenum	Potassium	Selenium	Silver	Sodium	Vanadium	Zinc
Background UTL		15100	8.65	868[a]	0.62	0.61	290000	10.5	3.9	5.7	8840	9.15[a]	10700	140[a]	0.08	0.69	2850	1.2	0.84[b]	317	24.6	21.8
CAN-97-19-99[h]	0-2	--	--	--	--	--	--	--	--	--	--	--	--	650	--	--	--	--	--	--	--	--
CAN-97-20-06	7-9	--	--	--	--	--	--	12	4.0@	6.4@	11000	--	--	--	--	--	--	--	--	--	--	24
CAN-97-20-I	4-6	18000	--	--	0.63@	--	--	15	4.3@	7.8@	13000	--	--	170	--	1.1@	--	--	--	--	27	32
CAN-97-20-S	0-2	--	--	--	--	--	--	11	--	10	9900	23	--	300	--	--	--	--	--	--	--	63
CAN-97-21-06	5-7	17000	--	--	0.62@	--	--	14	4.4	6.6@	12000	--	--	140	--	0.8@	--	--	--	--	26	27
Soil Borings (0-11 ft)																						
CAN-97-09-01	0-2	--	--	--	--	--	--	--	--	5.7@	--	--	--	--	--	0.8@	--	--	--	--	--	--
CAN-97-10-01[e]	0-2	--	--	--	--	--	--	--	--	--	--	9.2	--	--	--	--	--	--	--	--	--	22
CAN-97-11-01[e]	0-2	--	--	--	--	--	--	15	4.1@	8.8@	12000	9.2	--	220	--	--	3200	--	--	--	26	34
CAN-97-11-03	9-11	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	23@
CAN-97-14-01	0-2	--	--	--	--	--	--	11	4.1@	7.5@	10000	--	--	240	--	--	--	--	--	--	--	26
CAN-97-14-02	4-6	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.3@	--	--	--	--
CAN-97-2A-06	8-10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.9@	--	--	--	--
CAN-97-2A-I	4-6	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.7@	--	--	--	--
CAN-97-2A-S	0.5-1	--	--	--	--	--	--	11	--	5.9@	8900	--	--	170	--	--	--	1.3@	--	--	--	23
CAN-97-2B-06	8-10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.7@	--	--	--	--
CAN-97-2B-99[i]	4-6	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.8	--	--	--	--
CAN-97-2B-S	0.5-1	--	--	--	--	--	--	11	--	--	--	--	--	140	--	--	--	1.3@	--	--	--	22
CAN-97-3B-06[f]	8-10	--	--	--	0.71@	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CAN-97-3B-S[f]	0-2	--	--	--	0.62@	--	--	11	4.0@	--	9500	--	--	--	--	--	--	--	--	--	26	23
CAN-97-4A-I[f]	4-6	--	--	1000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CAN-97-4A-S	0.5-1	--	--	--	--	--	--	--	--	--	9000	--	--	150	--	--	--	--	--	--	--	--
CAN-97-4A-99[j]	0.5-1	--	--	--	--	--	--	--	--	--	9200	--	--	160	--	--	--	--	--	--	--	--
CAN-97-4B-S	0-2	--	--	--	--	--	--	11	--	--	--	--	--	140	--	--	--	--	--	--	--	24

Table 4-4

(Continued)

Sample ID	Depth ft. BLS	Metals (mg/kg)																				
		Aluminum	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Molybdenum	Potassium	Selenium	Silver	Sodium	Vanadium	Zinc
Background UTL		15100	8.65	868[a]	0.62	0.61	290000	10.5	3.9	5.7	8840	9.15[a]	10700	140[a]	0.08	0.69	2850	1.2	0.84[b]	317	24.6	21.8
CAN-97-8A-06[f]	8-10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	380@	--	--
CAN-97-8A-I[f]	4-6	--	--	1100	--	--	--	--	--	--	--	--	--	--	--	--	--	1.8@	--	--	--	--
CAN-97-8A-S	0.5-1	17000	--	--	--	0.87@	--	14	--	13	11000	14	--	160	--	--	2900	--	--	--	25	53
CAN-97-8B-01[f]	4-6	--	--	1700	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	85
CAN-97-8B-02	8-10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	380@	--	--
CAN-97-BG-01	0-2	--	--	--	--	--	--	--	--	--	--	9.7	--	140	--	--	--	--	--	--	--	--
Soil Borings (> 11 ft)																						
CAN-97-10-04	14-16	--	--	--	--	--	--	--	--	7.5@	--	--	--	--	--	--	--	1.6@	--	--	--	--
CAN-97-10-05	19-21	--	--	--	--	--	--	--	--	--	--	--	12000	--	--	--	--	--	--	--	--	--
CAN-97-10-99[e]	19-21	--	--	--	--	--	--	--	--	--	--	--	11000	--	--	--	--	--	--	--	--	--
CAN-97-10-06	24-26	--	--	--	--	--	--	--	--	--	--	--	12000	--	--	--	--	--	--	--	--	--
CAN-97-11-04[e]	14-16	--	--	--	--	--	--	12	--	--	--	--	--	--	--	--	3300	--	--	330@	32@	23@
CAN-97-11-05[e]	19-21	20000	--	--	0.85@	--	--	13	--	--	11000	--	--	150	--	--	4500	--	--	370@	39	29
CAN-97-11-10[e]	46-48	--	--	--	--	1.3@	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CAN-97-14-04	14-16	--	--	1100	--	--	--	--	--	--	--	--	--	--	--	--	--	1.2@	--	--	--	--
CAN-97-14-06	24-26	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5.0	--	--	--
CAN-97-14-07[e]	29-31	--	--	1000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.1@	--	--	--
CAN-97-3A-06	21-25	--	--	--	0.63@	--	--	--	--	--	9200	--	--	--	--	0.73@	2900	--	--	--	--	22
CAN-97-3A-I	19-21	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	330@	--	--
CAN-97-3A-S[f]	15-17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	420@	--	--
CAN-97-3C-01	12-14	--	--	--	0.63@	--	--	12	--	7.9@	11000	--	--	170	--	0.74@	--	--	--	--	--	28
CAN-97-3C-02	18-20	--	--	--	0.64@	--	--	--	--	--	10000	--	--	150	--	--	--	--	--	--	27	24
CAN-97-3C-03	23-25	--	--	--	--	--	--	--	--	--	--	--	--	170	--	--	--	--	--	--	--	--
CAN-97-3C-04	28-30	--	--	--	0.68@	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 4-4

(Continued)

Sample ID	Depth ft. BLS	Metals (mg/kg)																				
		Aluminum	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Molybdenum	Potassium	Selenium	Silver	Sodium	Vanadium	Zinc
Background UTL		15100	8.65	860 [a]	0.62	0.61	290000	10.5	3.9	5.7	8840	9.15 [a]	10700	140 [a]	0.08	0.69	2850	1.2	0.84 [b]	317	24.6	21.8
CAN-97-3C-09	53-55	--	--	--	--	--	--	--	--	--	--	--	15000	--	--	--	--	--	--	--	--	--
CAN-97-8B-03	14-16	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	330@	--	--
CAN-97-BG-99 [k]	59-61	--	--	--	--	--	--	--	--	--	--	--	--	140	--	--	--	--	--	--	--	--

@ Result is less than five times the detection limit.

[a] Maximum detected value in background soil used as UTL when data is not normally distributed.

[b] Maximum detection limit used. Analyte not detected in the background soil.

[c] Samples reanalyzed for thallium by GFAAS. None of these results were above the background UTL of 0.51 mg/kg.

[d] Field duplicate of CAN-97-10-05.

[e] Field duplicate of CAN-97-13-S.

[f] Samples reanalyzed for antimony by GFAAS. None of these results were above the background UTL of 0.07 mg/kg.

[g] Field duplicate of CAN-97-16-I.

[h] Field duplicate of CAN-97-19-S.

[i] Field duplicate of CAN-97-2B-I.

[j] Field duplicate of CAN-97-4A-S.

[k] Field duplicate of CAN-97-BG-01.

Note: Atomic absorption data were used to compare arsenic, lead, and selenium data to the UTLs. All field samples were analyzed for antimony and thallium by ICPES. Due to the high concentrations of calcium in these samples, the ICPES antimony and thallium results were biased high. About 10 percent of the field samples (the 18 exhibiting the highest ICPES concentrations or detection limits for Sb and/or Tl) were submitted for analyses by GFAAS. These analyses indicate that Sb and Tl are at/or below the UTLs for this site.

Results not listed are below background soil UTLs.

interface sample that did not exceed the zinc UTL was CAN97-21-I. The other interface samples contained 26 to 32 mg/kg zinc. Samples CAN97-15-06, CAN97-19-06, CAN97-20-06, and CAN97-21-06, from the 6 to 8 feet BLS depth interval, exceeded the zinc UTL with concentrations ranging from 22 to 28 mg/kg. Trench locations 15, 19, and 20 contained zinc concentrations exceeding the UTL at each of the three sampling depths.

Surface rubble samples from eight of the locations exceeded the UTL of 9.15 mg/kg for lead. With the exception of samples CAN97-17-S which contained 120 mg/kg, the sample concentrations ranged from 9.3 to 25 mg/kg lead. The rubble/native soil interface samples and the 6 to 8 feet BLS interval trench samples did not exceed the lead UTL.

Surface samples from seven of the trenches exceeded the UTL of 5.7 mg/kg for copper with concentrations ranging from 6.4 to 10 mg/kg. Eight of the rubble/native soil interface samples exceeded the copper UTL with concentrations ranging from 6.7 to 9.6 mg/kg. Samples CAN97-19-06, CAN97-20-06, and CAN97-21-06, from the 6 to 8 feet BLS depth interval, exceeded the copper UTL with concentrations ranging from 6.4 to 6.7 mg/kg. Trench locations 19 and 20 contained copper concentrations exceeding the UTL at each of the three sampling depth intervals.

Chromium was found in six of the surface rubble samples at concentrations ranging from 11 to 15 mg/kg, exceeding the UTL of 10.5 mg/kg. Seven of the rubble/surface soil interface samples exceeded the UTL with chromium concentrations ranging from 12 to 17 mg/kg. Chromium was also found in the 6 to 8 feet BLS samples from trenches 19, 20, and 21 with concentrations ranging from 12 to 14 mg/kg. Trench 20 contained chromium at concentrations exceeding the UTL at all three depth intervals.

At least three samples from each depth interval exceeded the cobalt UTL of 3.9 mg/kg. These samples contained 4 to 5 mg/kg cobalt. Only trench location 13 contained cobalt concentrations exceeding the UTL at all three depth intervals.

At least one of the trench samples from each of the three depth intervals exceeded the UTLs for arsenic (9.0 mg/kg), beryllium (0.62 mg/kg), cadmium (0.61 mg/kg), mercury (0.08 mg/kg), molybdenum (0.69 mg/kg), and vanadium (24.6 mg/kg). None of these metals was detected at all three intervals at a trench location.

4.3.2 Soil Boring Samples (0 to 11 feet BLS)

The metals data from both the shallow soil borings and the deep soil boring samples from the 0 to 11 feet BLS depth interval were compared to the calculated site-specific UTLs and samples containing at least one target metal at concentrations exceeding the UTLs are listed in Table 4-3. Eight soil boring samples from the 0 to 2 feet depth interval exceeded the manganese UTL of 140 mg/kg with concentrations up to 240 mg/kg in sample CAN97-14-01. Manganese concentrations in the 4 to 6 feet and 8 to 10 feet depth intervals did not exceed the manganese UTL.

The 0 to 2 feet interval samples from nine of the locations exceeded the UTL of 21.8 for zinc. With the exception of sample CAN97-8A-S, which contained 53 mg/kg zinc, the remaining 0 to 2 feet samples exceeding the UTL ranged from 22 to 34 mg/kg zinc. CAN97-8B-01 (4 to 6 feet BLS) contained 85 mg/kg zinc.

The native soil surface samples (0 to 2 feet) from three of the soil boring locations exceeded the UTL of 9.15 mg/kg for lead with concentrations ranging from 9.2 to 14 mg/kg lead. The remaining soil boring samples did not contain lead concentrations above the UTL.

Surface samples from five of the soil borings exceeded the UTL of 5.7 mg/kg for copper with concentrations ranging from 5.7 to 13 mg/kg. Copper did not exceed the UTL in the remaining 4 to 6 feet and 8 to 10 feet soil boring samples.

Chromium was found in seven of the surface (0 to 2 feet) samples at concentrations ranging from 11 to 15 mg/kg, exceeding the UTL of 10.5 mg/kg. Chromium did not exceed the UTL in the remaining 4 to 6 feet and 8 to 10 feet soil boring samples.

At least two samples from each depth interval (0 to 2 feet, 4 to 6 feet, and 8 to 10 feet) exceeded the selenium UTL of 1.2 mg/kg. These samples contained 1.3 to 1.9 mg/kg selenium. Only shallow soil boring locations 2A and 2B exceeded the selenium UTL at all three depth intervals.

At least one of the shallow soil boring samples exceeded the UTLs for barium (860 mg/kg), beryllium (0.62 mg/kg), cadmium (0.61 mg/kg), molybdenum (0.69 mg/kg), and vanadium (24.6 mg/kg). None of these metals were detected at all three shallow intervals at a given boring location.

4.3.3 Soil Boring Samples (deeper than 11 feet BLS)

The metals data from the deep soil boring samples taken at depth intervals deeper than 11 feet BLS were compared to the calculated site-specific UTLs and samples containing at least one target metal at concentrations exceeding the UTLs are listed in Table 4-3. Samples CAN97-3C-01 (12-14 feet BLS), CAN97-3C-02 (18-20 feet BLS), CAN97-3C-03 (23-25 feet BLS), and CAN97-11-05 (19-21 feet BLS) exceeded the manganese UTL of 140 mg/kg with concentrations ranging from 150 to 170 mg/kg. Manganese concentrations did not exceed the UTL in samples taken below 25 feet.

The silver UTL of 0.84 mg/kg was exceeded in samples CAN97-14-06 (24-26 feet BLS) and CAN97-14-07 (29 to 31 feet BLS) at concentrations of 5.0 and 2.1 mg/kg, respectively.

At least one sample from each depth interval up to 31 feet exceeded UTLs for barium (860 mg/kg), beryllium (0.62 mg/kg), chromium (10.5 mg/kg), copper (5.7 mg/kg), molybdenum (0.69 mg/kg), selenium (1.2 mg/kg), vanadium (24.6 mg/kg), and zinc (22 mg/kg). None of these metals were detected at concentrations greater than two times the respective UTL.

Only one sample taken below 31 feet contained a metal at a concentration exceeding a site-specific UTL. Sample CAN97-11-10 contained 1.3 mg/kg cadmium, which exceeded the UTL of 0.61 mg/kg.

Soil boring samples taken below 48 feet did not contain any target metals at concentrations exceeding the UTLs.

4.4 Organic Compounds Detected at Landfill No. 25

In 1992

The Landfill No. 25 samples were analyzed for organochlorine pesticides, polychlorinated biphenyls (PCBs), volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), total recoverable petroleum hydrocarbons (TRPH). In addition, forty of the field samples were also analyzed for total extractable hydrocarbons (diesel, jet fuel, and kerosene), total purgeable hydrocarbons (gasoline and its components), and chlorinated herbicides. Three additional samples were analyzed for total purgeable hydrocarbons and herbicides. Tables 4-5 through 4-7 list only those samples where one or more of a target organic compound was detected at concentrations greater than the method reporting limits. J-Flagged data (data above the instrument detection limit but below the method reporting limit) are only reported for those samples

Table 4-5

Organochlorine Pesticides and PCBs Found in Soil Samples from Landfill No. 25, 1992
CAFB, Clovis, New Mexico

Sample ID	Depth ft BLS	Organochlorine Pesticides and PCBs (SW8080), (µg/kg)													
		4,4'-DDD	4,4'-DDE	4,4'-DDT	Aldrin	Chlordane	Dieldrin	Endosulfan Sulfate	Endrin	Heptachlor	Heptachlor Epoxide	alpha-BHC	beta-BHC	delta-BHC	gamma-BHC
Reporting Limit		0.39	0.39	0.78	0.39	2.0	0.39	2.0	0.39	0.39	0.39	0.39	0.39	0.39	0.39
Trenches															
CAN-97-12-I	4-6	<	<	1.4@	<	<	<	<	<	<	0.11J	<	<	<	<
CAN-97-12-S	0-2	< [k]	8.4@	3.8J	< [k]	< [l]	< [k]	< [l]	< [k]	< [k]	< [k]	< [k]	< [k]	< [k]	< [k]
CAN-97-13-S	0-2	< [k]	4.3@	2.4J	1.9J	< [l]	< [k]	< [l]	< [k]	< [k]	< [k]	< [k]	< [k]	< [k]	< [k]
CAN-97-13-99[d]	0-2	< [k]	4.4@	2.3J	< [k]	< [l]	< [k]	< [l]	< [k]	< [k]	< [k]	< [k]	< [k]	< [k]	1.6J
CAN-97-15-I	4-6	<	<	<	<	<	<	<	<	<	<	<	<	<	0.56G@
CAN-97-15-S	0-2	< [l]	17@	27J	< [l]	< [m]	< [l]	< [m]	< [l]	0.12J	< [l]	< [l]	< [l]	< [l]	< [l]
CAN-97-16-06	5-7	<	<	0.34J	<	<	<	<	<	<	0.94G@	<	<	<	<
CAN-97-16-I	4-6	<	12	6.1	<	<	<	<	<	<	<	<	<	<	<
CAN-97-16-99[e]	0-0	<	12	6.6	<	<	<	<	<	<	<	<	<	0.35G@	<
CAN-97-16-S	0-2	< [k]	10@	4.8J	< [k]	< [l]	< [k]	< [l]	< [k]	< [k]	< [k]	< [k]	< [k]	< [k]	< [k]
CAN-97-17-06	6-8	<	0.88@	0.94G@	<	<	<	<	<	<	<	<	<	<	<
CAN-97-17-99[f]	6-8	<	0.83@	2.3@	<	<	<	<	<	<	<	<	<	<	0.31J
CAN-97-17-I	4-6	<	1.6@	1.1@	<	<	<	<	<	<	<	<	<	<	0.27J
CAN-97-17-S	0-2	5.9B@	0.75J	5.3J	5.7@	< [l]	1.2J	< [l]	2.5J	< [k]	< [k]	< [k]	1.3J	< [k]	< [k]
CAN-97-18-06	5-7	<	<	<	<	<	<	<	<	<	<	<	<	0.86G@	0.37G@
CAN-97-18-I	4-6	0.19J	0.26J	<	4G	<	<	<	<	<	0.79G@	<	<	0.4G@	<
CAN-97-18-S	0-2	< [k]	4.8@	11@	< [k]	< [l]	< [k]	1.6J	< [k]	< [k]	< [k]	< [k]	< [k]	< [k]	1.6J
CAN-97-19-06	5-7	0.31J	17	8.5	<	17	0.37G	<	<	<	<	<	<	<	0.34J
CAN-97-19-I	4-6	0.86G@	5.9	9.2	<	10	0.43@	<	<	<	<	<	<	<	0.31J
CAN-97-19-S	0-2	3.8B@	2.6J	8@	< [k]	< [l]	< [k]	< [l]	< [k]	< [k]	< [k]	< [k]	< [k]	< [k]	< [k]
CAN-97-19-99[g]	0-2	4.2B@	3.5@	10@	< [k]	< [l]	< [k]	< [l]	< [k]	< [k]	< [k]	< [k]	< [k]	< [k]	< [k]
CAN-97-20-I	4-6	<	<	1.1@	<	<	<	<	<	<	<	<	<	<	<
CAN-97-20-S	0-2	9.9B@	1.6J	< [n]	< [k]	< [l]	< [k]	38G@	< [k]	< [k]	< [k]	< [k]	< [k]	< [k]	< [k]
CAN-97-21-99	5-7	<	0.42G@	<	<	<	<	<	<	<	<	<	<	<	<

Table 4-5

(Continued)

Sample ID	Depth ft BLS	Organochlorine Pesticides and PCBs (SW8080), (µg/kg)													
		4,4'-DDD	4,4'-DDE	4,4'-DDT	Aldrin	Chlordane	Dieldrin	Endosulfan Sulfate	Endrin	Heptachlor	Heptachlor Epoxide	alpha-BHC	beta-BHC	delta-BHC	gamma-BHC
Reporting Limit		0.39	0.39	0.78	0.39	2.0	0.39	2.0	0.39	0.39	0.39	0.39	0.39	0.39	0.39
CAN-97-21-I	4-6	<	0.48@	<	0.27J	<	<	<	<	<	<	<	<	<	<
CAN-97-21-S	0-2	< [k]	0.76J	< [a]	< [k]	< [l]	< [k]	< [l]	< [k]	5.9G@	< [k]	< [k]	< [k]	< [k]	< [k]
Soil Borings (0-11 ft)															
CAN-97-09-01	0-2	0.35J	20	10	<	12	<	<	<	<	<	<	<	<	<
CAN-97-09-02	4-6	<	0.29J	<	<	<	<	<	<	<	<	<	<	0.51G@	<
CAN-97-10-01	0-2	< [k]	220	110	2.1J	< [l]	< [k]	< [l]	< [k]	< [k]	1.8J	< [k]	< [k]	< [k]	< [k]
CAN-97-10-02	4-6	0.43GB@	0.21J	0.61J	<	<	<	<	<	0.11J	<	<	<	<	<
CAN-97-11-01	0-2	< [k]	15@	13@	< [k]	< [l]	< [k]	< [l]	< [k]	< [k]	< [k]	< [k]	< [k]	< [k]	< [k]
CAN-97-11-02	4-6	0.8@	<	<	<	<	<	<	<	<	<	<	<	<	<
CAN-97-14-01	0-2	< [k]	8.8@	10@	< [k]	< [l]	< [k]	< [l]	< [k]	< [k]	< [k]	< [k]	< [k]	< [k]	< [k]
CAN-97-14-02	4-6	< [k]	< [k]	0.93@	0.44@	<	<	<	<	<	<	<	<	<	<
CAN-97-14-03	9-11	0.76@	<	<	<	<	<	<	0.54@	0.45@	<	<	<	0.82@	<
CAN-97-2A-06	8-10	<	<	<	<	<	<	<	<	<	<	<	<	0.68G@	<
CAN-97-2A-I	4-6	<	1@	<	<	<	<	<	<	<	<	<	<	<	0.33J
CAN-97-2A-S	0-2	< [k]	8.9@	37	< [k]	< [l]	< [k]	< [l]	< [k]	< [k]	< [k]	< [k]	< [k]	< [k]	< [k]
CAN-97-2B-06	8-10	<	<	<	<	<	<	<	<	<	<	<	<	<	0.46GB@
CAN-97-2B-99 [h]	4-6	<	<	1.4G@	<	<	<	<	<	<	<	<	<	<	0.34J
CAN-97-2B-S	0-2	9.4@	10@	30@	< [o]	< [p]	< [o]	< [p]	< [o]	< [o]	< [o]	< [o]	1.3J	< [o]	< [o]
CAN-97-3B-06	8-10	0.43G@	0.059J	<	<	<	<	<	<	0.1J	<	<	<	<	<
CAN-97-3B-I	4-6	<	<	0.83@	<	<	<	0.078J	<	<	<	<	<	<	<
CAN-97-3B-S	0-2	0.59@	<	1.1G@	<	<	<	<	<	<	0.45G@	<	<	<	<
CAN-97-4A-06	8-10	0.41GB@	<	0.53J	<	<	<	<	<	0.11J	<	<	<	<	<
CAN-97-4A-I	4-6	0.39GB@	0.097J	0.4J	<	<	<	<	<	0.041J	<	<	<	<	<
CAN-97-4A-S	0-2	0.43GB@	0.5@	1.6@	1.2G@	<	0.15J	<	<	<	0.7GB@	<	<	0.54@	3.5G
CAN-97-4A-99 [j]	0-2	<	1.2@	0.84@	1.3G@	<	<	<	<	<	0.86GB@	<	<	0.97@	<
CAN-97-4B-06	8-10	0.4G@	0.059J	0.46J	<	<	<	<	0.13J	0.057J	<	<	<	<	<

Table 4-5

(Continued)

Sample ID	Depth ft BLS	Organochlorine Pesticides and PCBs (SW8080), (µg/kg)													
		4,4'-DDD	4,4'-DDE	4,4'-DDT	Aldrin	Chlordane	Dieldrin	Endosulfan Sulfate	Endrin	Heptachlor	Heptachlor Epoxide	alpha-BHC	beta-BHC	delta-BHC	gamma-BHC
Reporting Limit		0.39	0.39	0.78	0.39	2.0	0.39	2.0	0.39	0.39	0.39	0.39	0.39	0.39	0.39
CAN-97-4B-S	0-2	< [k]	6.1@	3.8J	< [k]	< [l]	< [k]	< [l]	< [k]	< [k]	< [k]	< [k]	< [k]	< [k]	< [k]
CAN-97-8A-06	8-10		<	0.62J	<	<	<	<	<	0.16J	9.6G	<	<	1@	<
CAN-97-8A-I	4-6	0.028J	17	8.4	<	<	<	<	<	<	<	<	<	<	0.36J
CAN-97-8A-S	0-2	< [k]	35	19@	< [k]	< [l]	< [k]	< [l]	< [k]	< [k]	< [k]	< [k]	< [k]	< [k]	< [k]
CAN-97-8B-01	4-6	1.1G@	16	41	<	9.4	<	<	<	<	<	<	<	0.42@	<
Soil Borings (>11 ft)															
CAN-97-09-06	24-26	0.41@	1.4@	0.99@	<	<	<	<	<	<	<	<	<	<	<
CAN-97-09-99[a]	24-26	<	1.6@	1@	<	<	<	<	<	<	0.24J	<	<	<	<
CAN-97-09-10	44-46	<	3	<	<	<	<	<	0.022J	<	<	<	<	0.41G@	0.28J
CAN-97-10-04	14-16	0.4GB@	1.2@	0.83@	<	<	<	<	<	<	<	<	<	<	<
CAN-97-10-99[b]	19-21	0.46GB@	<	0.73J	<	<	<	<	0.17J	0.1J	<	<	<	<	<
CAN-97-10-06	24-26	<	0.68@	0.34J	<	<	<	<	<	<	0.34J	<	<	<	<
CAN-97-10-07	29-31	0.39B@	<	0.17J	<	<	<	<	<	<	<	<	<	<	<
CAN-97-10-08	34-36	0.39GB@	<	0.42J	<	<	<	<	<	<	<	<	<	<	<
CAN-97-10-09	39-41	0.38B@	<	<	<	<	<	<	<	<	<	<	<	<	<
CAN-97-10-10	44-46	0.38GB@	<	0.42J	<	<	<	<	<	<	<	<	<	<	<
CAN-97-10-11	49-51	0.4GB@	0.064J	0.51J	<	<	<	<	0.13J	0.082J	<	<	<	<	<
CAN-97-10-12	54-56	0.44GB@	<	0.63J	<	<	<	0.073J	<	0.12J	<	<	<	<	<
CAN-97-10-13	59-61	0.4GB@	<	<	<	<	<	<	0.11J	0.0066J	<	<	<	<	<
CAN-97-11-04	14-16	<	<	0.95@	<	<	<	<	<	<	<	<	<	<	<
CAN-97-11-07	29-31	0.8@	0.51@	0.92@	<	<	<	<	<	0.26J	<	<	0.2J	<	<
CAN-97-11-99[c]	39-41	0.74@	<	<	<	<	<	<	<	<	<	<	<	<	<
CAN-97-11-10	46-48	0.8@	<	1@	<	<	<	<	0.53@	0.31J	<	<	<	<	<
CAN-97-11-11	51-53	<	<	0.82@	<	<	<	<	<	0.31J	<	<	<	<	<
CAN-97-14-09	39-41	<	<	1.2@	<	<	<	<	<	<	<	<	<	<	<
CAN-97-14-10	44-46	<	<	0.91@	0.47@	<	<	<	<	<	<	<	0.22J	<	<

Table 4-5

(Continued)

Sample ID	Depth ft BLS	Organochlorine Pesticides and PCBs (SW8080), (µg/kg)													
		4,4'-DDD	4,4'-DDE	4,4'-DDT	Aldrin	Chlordane	Dieldrin	Endosulfan Sulfate	Endrin	Heptachlor	Heptachlor Epoxide	alpha-BHC	beta-BHC	delta-BHC	gamma-BHC
Reporting Limit		0.39	0.39	0.78	0.39	2.0	0.39	2.0	0.39	0.39	0.39	0.39	0.39	0.39	0.39
CAN-97-14-13	59-61	<	<	1@	<	<	<	<	<	<	<	<	<	<	<
CAN-97-3C-01	12-14	3@	<	< [k]	3@	< [e]	9.2G	< [e]	1.9G@	5.8G@	2.5G@	2.4@	< [k]	< [k]	7.5G@
CAN-97-3C-02	18-20	<	<	<	<	<	<	<	<	<	0.21J	<	4.3G	<	<
CAN-97-3C-04	28-30	<	<	<	<	<	<	<	0.37@	<	<	<	4.8G	<	<
CAN-97-3C-05	33-35	<	<	<	<	<	<	<	0.52@	<	<	<	0.95@	<	<
CAN-97-3C-06	38-40	<	0.41@	0.52J	<	<	<	<	<	<	<	<	<	<	<
CAN-97-3C-99[i]	38-40	<	<	<	<	<	<	<	<	<	<	<	4.7G	<	<
CAN-97-3C-08	48-50	<	<	<	<	<	<	<	<	<	0.21J	<	9.9G	<	<
CAN-97-3C-09	53-55	<	<	0.49J	<	<	<	<	<	<	0.26J	<	12G	<	<
CAN-97-8B-03	14-16	0.55G@	<	0.97@	<	<	0.15J	<	0.28J	0.16J	<	<	<	<	<
CAN-97-8B-04	19-21	0.42G@	0.072J	0.55J	<	<	<	<	0.13J	0.06J	<	<	<	<	<
CAN-97-8B-05	24-26	0.4G@	0.075J	0.34J	<	<	<	<	0.11J	0.067J	<	<	<	<	<
CAN-97-8B-06	29-31	0.43G@	<	<	<	<	<	<	<	0.12J	<	<	<	<	<
CAN-97-8B-07	34-36	<	0.43@	0.62J	<	<	<	<	<	<	0.17J	<	<	<	<
CAN-97-8B-10	49-51	0.41G@	<	<	<	<	<	0.09J	0.11J	0.057J	<	<	<	<	<
CAN-97-8B-11	54-56	0.39@	<	<	<	<	<	<	0.1J	0.016J	<	<	<	<	<
CAN-97-8B-13	64-66	0.41G@	0.066J	<	<	<	<	<	0.12J	0.078J	<	<	<	<	<

@ Result is less than five times the reporting limit.
B Analyte detected in blank.
G Presence of analyte confirmed by second column but quantitation is estimated due to matrix interferences.
J Estimated result less than reporting limit.

Table 4-5

(Continued)

Note: Only samples and analytes with at least one result greater than the reporting limit are included in this table. Complete results are in Appendix B.

[a] Field duplicate of CAN-97-09-06
[b] Field duplicate of CAN-97-10-04
[c] Field duplicate of CAN-97-11-07
[d] Field duplicate of CAN-97-13-S
[e] Field duplicate of CAN-97-16-I
[f] Field duplicate of CAN-97-17-06
[g] Field duplicate of CAN-97-19-S
[h] Field duplicate of CAN-97-2B-I
[i] Field duplicate of CAN-97-3C-06
[j] Field duplicate of CAN-97-4A-S

[k] Sample diluted for analyses. Reporting limit is 3.7 μg/kg.
[l] Sample diluted for analyses. Reporting limit is 19 μg/kg.
[m] Sample diluted for analyses. Reporting limit is 85 μg/kg.
[n] Sample diluted for analyses. Reporting limit is 6.8 μg/kg.
[o] Sample diluted for analyses. Reporting limit is about 9 μg/kg.
[p] Sample diluted for analyses. Reporting limit is 44 μg/kg.
[q] Sample diluted for analyses. Reporting limit is 1.8 μg/kg.

< Compound not detected at the reporting limit. All compounds detected between the instrument detection limit and the reporting limit are reported and "J-flagged."

Table 4-6

Semivolatile Organic Compounds Found at Landfill No. 25, 1992
CAFB, Clovis, New Mexico

Sample ID	Depth ft BLS	SVOCs (SW8270), µg/kg											TICs						
		Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Butylbenzylphthalate	Chrysene	Fluoranthene	Phenanthrene	Pyrene	bis(2-Ethylhexyl)phthalate	C4-Tetrahydrofuran	Cyclohexanol	Chlorocyclohexanol	Cyclohexanone	Dimethylisopropylnaphthalene	Trichloropropane(s)	Cyclohexanone
Reporting Limit		370	370	370	370	370	370	370	370	370	370	370	–	–	–	–	–	–	–
Trenches																			
CAN-97-13-99*	0-2	<	<	11JX	<	11JX	<	<	8.4J	9.4J	7.9J	<		380					
CAN-97-15-S	0-2	730@	970@	1000@	270J	890@	<	780@	1100@	540@	970@	120JB							
CAN-97-17-S	0-2	18J	180J	180J	<	180J	22J	120J	33J	45J	120J	1300@							
Soil Borings (0-11 ft)																			
CAN-97-10-02	4-6	<	<	<	<	<	<	<	<	<	<	<				290			
CAN-97-11-01	0-2	70J	86J	200JX	58J	200JX	<	94J	79J	32J	79J	230JB					190		
CAN-97-11-02	4-6	<	<	<	<	<	<	<	<	<	<	530B@							
CAN-97-3B-I	4-6	<	<	<	<	<	<	<	<	<	<	<						190	
CAN-97-4A-S	0-2	<	<	<	<	<	<	<	<	<	<	<				180			
CAN-97-4B-06	8-10	<	<	<	<	<	<	<	<	<	<	<						280	
CAN-97-4B-S	0-2	<	<	<	<	<	<	<	<	<	<	<		280					
CAN-97-8A-06	8-10	<	<	<	<	<	<	<	<	<	<	48J			180	180		260	
CAN-97-8A-S	0-2	<	<	<	<	<	<	<	<	<	<	<				140			
CAN-97-8B-01	4-6	<	<	<	<	<	<	<	<	<	<	<						140	
CAN-97-BG-01	0-2	69J	<	<	<	<	<	96J	290J	430@	270J	92J							
CAN-97-BG-02	4-6	<	<	<	<	<<	<	<	<	<	<	<			260			780	
CAN-97-BG-03	9-11	<	<	<	<	<	<	<	<	<	<	<		220					

Table 4-6

(Continued)

Sample ID	Depth ft BLS	SVOCs (SW8270), µg/kg											TICs						
		Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Butylbenzylphthalate	Chrysene	Fluoranthene	Phenanthrene	Pyrene	bis(2-Ethylhexyl)phthalate	C4-Tetrahydrofuran	Cyclohexenol	Chlorocyclohexenol	Cyclohexenone	Dimethylisopropylnaphthalene	Trichloropropene(g)	Cyclohexanone
Reporting Limit	370	370	370	370	370	370	370	370	370	370	370	370	1	1	1	1	1	1	1
Soil Borings (>11 ft)																			
CAN-97-09-06	24-26	<	<	<	<	<	<	<	<	<	<	160J	210	280		140			
CAN-97-09-99*	24-26	<	<	<	<	<	<	<	<	<	<	160J	240	350				320	
CAN-97-10-12	54-56	<	<	<	<	<	<	<	<	<	<	<				170			
CAN-97-14-12	54-56	<	<	<	<	<	<	<	<	<	<	<						240	
CAN-97-3A-S	15-17	<*	<*	<*	<*	<*	<*	<*	<*	<*	<*	6800JB				5800			
CAN-97-3C-02	18-20	<	<	<	<	<	<	<	<	<	<	<						600	
CAN-97-3C-03	23-25	<	<	<	<	<	<	<	<	<	<	<		360		220			
CAN-97-3C-04	28-30	<	<	<	<	<	<	<	<	<	<	29J		180					
CAN-97-3C-05	33-35	<	<	<	<	<	<	<	<	<	<	<		340		150			
CAN-97-3C-06	38-40	<	<	<	<	<	<	<	<	<	<	<		370		190			
CAN-97-3C-99*	38-40	<	<	<	<	<	<	<	<	<	<	<				180			
CAN-97-3C-07	43-45	<	<	<	<	<	<	<	<	<	<	<						480	
CAN-97-3C-11	63-65	<	<	<	<	<	<	<	<	<	<	<						420	
CAN-97-3C-12	68-70	<	<	<	<	<	<	<	<	<	<	<				280		390	
CAN-97-3C-13	71-73	<	<	<	<	<	<	<	<	<	<	<		280		180			
CAN-97-8B-03	14-16	<	<	<	<	<	<	<	<	<	<	<						150	
CAN-97-8B-04	19-21	<	<	<	<	<	<	<	<	<	<	5300							
CAN-97-8B-06	29-31	<	<	<	<	<	<	<	<	<	<	<		780	590	160		190	

Table 4-6

(Continued)

Sample ID	Depth ft BLS	SVOCs (SW8270), µg/kg											TICs						
		Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Butylbenzylphthalate	Chrysene	Fluoranthene	Phenanthrene	Pyrene	bis(2-Ethylhexyl)phthalate	C4-Tetrahydrofuran	Cyclohexanol	Chlorocyclohexanol	Cyclohexanone	Dimethylisopropylnaphthalene	Trichloropropene(s)	Cyclohexanone
Reporting Limit	370	370	370	370	370	370	370	370	370	370	370	370	1	1	1	1	1	1	1
CAN-97-8B-07	34-36	<	<	<	<	<	<	<	<	<	<	<						390	
CAN-97-8B-08	39-41	<	<	<	<	<	<	<	<	<	<	<		600		180		250	
CAN-97-8B-09	44-46	<	<	<	<	<	<	<	<	<	<	<						170	
CAN-97-8B-10	49-51	<	<	<	<	<	<	<	<	<	<	<		240				180	140
CAN-97-8B-12	59-61	<	<	<	<	<	<	<	<	<	<	28J							
CAN-97-8B-99[4]	59-61	<	<	<	<	<	<	<	<	<	<	<						340	
CAN-97-8B-13	64-66	<	<	<	<	<	<	<	<	<	<	<		950				140	
CAN-97-BG-04	17-19	<	<	<	<	<	<	<	<	<	<	<						250	
CAN-97-BG-05	19-21	<	<	<	<	<	<	<	<	<	<	480@		180				880	
CAN-97-BG-07	32-34	<	<	<	<	<	<	<	<	<	<	<						730	
CAN-97-BG-08	34-36	<	<	<	<	<	<	<	<	<	<	<						780	
CAN-97-BG-09	39-41	<	<	<	<	<	<	<	<	<	<	<						720	
CAN-97-BG-10	44-46	<	<	<	<	<	<	<	<	<	<	32J		250				470	
CAN-97-BG-11	51-53	<	<	<	<	<	<	<	<	<	<	220J		170				850	
CAN-97-BG-12	56-58	<	<	<	<	<	<	<	<	<	<	<						650	

Table 4-6

(Continued)

@ Result is less than five times the reporting limit.
B Analyte detected in blank.
J Estimated results is less than reporting limit.
X Benzo(b)fluoranthene and benzo(k)fluoranthene coelute. The result reported is the combined total of the two compounds.
< Compound was not detected in the sample at the method reporting limit. All compounds detected between the instrument detection limit and the method reporting are reported and "J-flagged."

[a] Field duplicate of CAN-97-09-06
[b] Field duplicate of CAN-97-13-S
[c] Field duplicate of CAN-97-3C-06
[d] Field duplicate of CAN-97-8B-12
[e] Detection of sample for high concentrations of cyclohexenone (TIC) resulted in a reporting limit of 12000 μg/kg for this sample.

Note: Only samples and analytes with results greater than the detection limit are included in this table. Complete results are in Appendix __. The results for tentatively identified compounds (TICs) are semi-quantitative and are listed only when a TIC is detected in a sample; reporting limits are not available for TICs.

Table 4-7

TPH, Chlorinated Herbicides, and Volatile Organic Compounds Found in Soil Samples at Landfill No. 25, 1992 CAFB, Clovis, New Mexico

Sample ID	Depth ft BLS	TRPH (9071/ 418.1) mg/kg	TPH (8015 MK and 8015 MP) (µg/kg)		Herbicides (8150) (µg/kg)					VOCs (8240) (µg/kg)					VOC TICs				
			Diesel	Gasoline	2,4,5-T	2,4,5-TP	2,4-DB	Dichloroprop	MCPP	Acetone	Benzene	Methylene chloride	Toluene	Xylenes	Ethyl acetate	Decanal	Methyl acetate	Nonanal	2-Ethylhexyl acetate
Reporting Limit		29		5800	7.8	6.6	36	25	7500	120	5.9	5.9	5.9	5.9	-	-	-	-	-
Trenches																			
CAN-97-12-06	5-7	<	21000GB@	<	<	<	<	<	<	<	<	<	<	<					
CAN-97-12-I	4-6	35@								<	<	<	<	<					
CAN-97-12-S	0-2	67@								<	<	32	2.4J	<					
CAN-97-13-I	4-6	<	18000GB@	<	0.88J	2.9J	<	<	2000J	<	<	<	<	<					
CAN-97-13-S	0-2	62@								<	2.7J	11@	37	2.6J					
CAN-97-13-99[b]	0-2	93@								34J	3.8J	7.1@	36	2.6J					
CAN-97-15-S	0-2	1600	120000G@	5000G@	<	<	34G@	17J	<	<	6.7@	6.3@	79	3.6J					
CAN-97-16-06	5-7	<	15000GB@	<	<	<	<	11J	<	<	<	<	<	<					
CAN-97-16-I	4-6	32@								<	<	<	<	<					
CAN-97-16-S	0-2	75@								120@	<	100	68	4.9J					
CAN-97-16-99[e]	0-2	46@								<	<	<	<	<					
CAN-97-17-06	6-8	47@								<	<	<	<	<					
CAN-97-17-I	4-6	100@	13000GB@	<	<	2.1J	9.4J	18J	<	45J	<	<	1.1J	<					
CAN-97-17-S	0-2	9900								30J	2J	86	7.8@	<					
CAN-97-17-99[e]	6-8	42@								<	<	<	<	<					
CAN-97-18-S	0-2	110@	17000GB@	3000J	9.6G@	17G@	<	190G	<	<	<	6.6@	25	1.4J					
CAN-97-19-06	5-7	56@	100000G@	<	<	13G@	5.6J	16J	<	<	<	<	<	<					
CAN-97-19-I	4-6	180								<	<	<	0.79J	<					
CAN-97-19-S	0-2	400								<	2.7J	43	21@	<					
CAN-97-19-99[f]	0-2	340								16J	3.1J	36	44	3.1J					

Table 4-7

(Continued)

Sample ID	Depth BLS	TRPH (9071/418.1) mg/kg	TPH (8015 ME and 8015 MP) (µg/kg)		Herbicides (8150) (µg/kg)					VOCs (8240) (µg/kg)					VOC TICs				
			Diesel	Gasoline	2,4,5-T	2,4,5-TP	2,4-DB	Dichloroprop	MCPP	Acetone	Benzene	Methylene chloride	Toluene	Xylenes	Ethyl acetate	Decanal	Methyl acetate	Nonanal	2-Ethylhexyl acetate
Reporting Limit		29		5800	7.8	6.6	36	25	7500	120	5.9	5.9	5.9	5.9	–	–	–	–	–
CAN-97-20-I	4-6	33@	19000GB@	<	<	4.5J	4.8J	<	<	<	<	<	<	<					
CAN-97-20-S	0-2	610								31J	2.8J	<	100	<					
CAN-97-21-S	0-2	25@	33000GB@	5400G@	3.7J	<	12J	<	<	<	8.2@	74	220	25					
Soil Borings (0-11 ft)																			
CAN-97-09-01	0-2	27@								<	<	<	<	<					
CAN-97-09-03	9-11	<	6800GB@	<	<	<	<	<	520J	<	<	3.4J	1J	<					
CAN-97-10-01	0-2	48@								<	<	4.9J	4.7J	<					
CAN-97-10-03	9-11	<	7700GB@	<	<	<	<	3.2J	<	<	<	<	0.63J	<					
CAN-97-11-01	0-2	160								<	<	<	5.2J	<					
CAN-97-11-02	4-6	<	12000GB	<	<	<	<	6.6J	<	<	<	<	5.2J	<					
CAN-97-14-01	0-2	52@								<	<	<	30	4.1J					
CAN-97-14-02	4-6	<	8700GB@	<	<	<	<	3.8J	<	<	<	<	<	<					
CAN-97-14-99[c]	4-6	<	5800GB@	<	<	<	<	<	<	<	<	<	<	<					
CAN-97-2A-I	4-6	42@	5400J	<	<	<	<	<	<	180@	<	5.3J	<	<					
CAN-97-2A-S	0-2	1300					<			<	<	8.8@	4.1J	1.2J					
CAN-97-2B-I	4-6	29@								38J	<	<	<	<					
CAN-97-2B-S	0-2	2500	49000J	<	<	<	<	4J	<	<	<	18@	2.3J	<					
CAN-97-2B-99[a]	4-6	32@								<	<	<	<	<					
CAN-97-3B-06	8-10	31@								<	<	<	<	<	42				
CAN-97-3B-I	4-6	110@								<	<	2.9J	0.61J	<				9.3	
CAN-97-3B-S	0-2	34@	6900GB@	<	<	<	<	<	<	<	<	4.7J	0.4J	<					
CAN-97-4A-I	4-6	<	3700J	<	<	<	<	<	<	780	<	<	<	<					
CAN-97-4B-06	8-10	38@								<	<	<	<	<					

Table 4-7

(Continued)

Sample ID	Depth ft BLS	TRPH (9071/418.1) mg/kg	TPH (8015 ME and 8015 MP) (µg/kg)		Herbicides (8150) (µg/kg)					VOCs (8240) (µg/kg)					VOC TICs				
			Diesel	Gasoline	2,4,5-T	2,4,5-TP	2,4-DB	Dichloroprop	MCPP	Acetone	Benzene	Methylene chloride	Toluene	Xylenes	Ethyl acetate	Decanal	Methyl acetate	Nonanal	2-Ethylhexyl acetate
Reporting Limit		25		5800	7.8	6.6	36	25	7500	120	5.9	5.9	5.9	5.9	–	–	–	–	–
CAN-97-4B-I	4-6	29@	7200GB@	<	<	<	<	2.8J	<	<	<	<	0.18J	<					
CAN-97-4B-S	0-2	85@								<	<	<	3.5J	1.2J					
CAN-97-8A-06	8-10	30@								<	<	<	<	<					
CAN-97-8A-I	4-6	39@	4300J	<	<	<	<	<	<	150@	<	<	<	<					
CAN-97-8A-S	0-2	87@								<	<	<	5.2J	1.7J					
CAN-97-BG-01	0-2	1700	33000GB@	<	<	<	<	10J	680J	<	<	<	3.7J	<					
CAN-97-BG-99[1]	0-2	1600	36000GB@	<	<	4.9J	<	<	5800J	<	<	<	8.8@	0.59J					
Soil Borings (> 11 ft)																			
CAN-97-09-05	19-21	<	-							<	<	3.7J	1.7J	<	17				
CAN-97-09-06	24-26	<								<	<	<	<	<	7.6				
CAN-97-09-07	29-31	<	6100GB@	<	<	<	<	12J	<	<	<	<	<	<					
CAN-97-09-08	34-36	<								16J	<	<	<	<		5.4		6.4	
CAN-97-09-09	39-41	<	5000J	<	<	<	<	14J	<	10J	<	7.9@	4.2J	<	27				
CAN-97-09-10	44-46	<								<	<	6.8@	15@	<	87		13		
CAN-97-09-12	54-56	<								<	<	<	1J	<	8.4				
CAN-97-09-13	59-61	<								<	<	3.5J	0.73J	<	5				
CAN-97-10-05	19-21	<								<	<	<	<	<	12				
CAN-97-10-08	34-36	<	8600GB@	<	<	<	<	<	<	<	0.85J	<	0.8J	1.4J	9.9				
CAN-97-10-09	39-41	<								<	<	<	1.2J	<	6.6				
CAN-97-10-10	44-46	<								97J	1.6J	<	1.9J	<	8.2				
CAN-97-10-11	49-51	<								<	<	<	<	<	10				5
CAN-97-10-12	54-56	<								<	<	<	<	<	5.4				
CAN-97-11-04	14-16	30@	13000GB@	<	<	<	<	3.7J	<	<	<	<	11@	<	35				

Table 4-7

(Continued)

Sample ID	Depth ft BLS	TRPH (9071/418.1) mg/kg	TPH (8015 ME and 8015 MP) (µg/kg)		Herbicides (8150) (µg/kg)					VOCs (8240) (µg/kg)					VOC TICs				
			Diesel	Gasoline	2,4,5-T	2,4,5-TP	2,4-DB	Dichloroprop	MCPP	Acetone	Benzene	Methylene chloride	Toluene	Xylenes	Ethyl acetate	Decanal	Methyl acetate	Nonanal	2-Ethylhexyl acetate
Reporting Limit		29		5800	7.8	6.6	36	25	7500	120	5.9	5.9	5.9	5.9	–	–	–	–	–
CAN-97-11-05	19-21	<								<	<	<	1J	<	18				
CAN-97-11-06	24-26	<								<	<	<	0.97J	<	14				
CAN-97-11-08	34-36	<								<	<	<	5.9@	<	29		9.5		
CAN-97-11-09	39-41	<	7600GB@	<	<	<	<	3.3J	<	<	<	<	<	<	21				
CAN-97-11-99*	39-41	<	6400GB@	<	<	<	<	4.2J	<	<	<	<	1.6J	<	38		8.1		
CAN-97-11-10	46-48	<								<	<	<	5.7@	<	48				
CAN-97-11-11	51-53	<								<	<	<	0.98J	<	11		9.2		
CAN-97-11-12	54-56	<								<	<	<	4.4J	<	110		8.4		
CAN-97-11-13	59-61	<								<	<	<	0.97J	<	5.9		7.4		
CAN-97-14-04	14-16	<								<	<	<	<	<	7.8				
CAN-97-14-06	24-26	<	9400GB@	<	<	<	<	4.2J	<	26J	<	<	<	<	8.6				
CAN-97-14-07	29-31	<								25J	<	<	<	<	5.2				
CAN-97-14-08	34-36	<	6900GB@	<	<	<	<	3.9J	<	<	<	<	<	<	16				
CAN-97-14-09	39-41	<								<	<	<	<	<	5.9				
CAN-97-14-10	44-46	<								<	<	<	<	<	5.7				
CAN-97-14-11	49-51	<								<	<	<	0.97J	<	66				
CAN-97-14-12	54-56	<								<	<	<	2.4J	<	58				
CAN-97-14-13	59-61	37@								<	<	<	4.5J	<	23				
CAN-97-3A-06	21-25	<	5400J		<	<	<	21J	<	100J	<	9.5@	9.2@	2.8J					
CAN-97-3A-I	19-21	<	4800J		<	<	<	17J	<	<	<	<	<	<		7.8		7.8	
CAN-97-3A-S	15-17	330	5300J	<	<	<	<	<	<	<	<	<	1.2J	<	40				4.6
CAN-97-3C-01	12-14	69@	44000GB	<	<	22G@	<	49G@	9300G@	14J	<	35	1.9J	<					
CAN-97-3C-03	23-25	<								<	<	<	<	<		8.8		22	

Table 4-7

(Continued)

Sample ID	Depth ft BLS	TRPH (9071/418.1) mg/kg	TPH (8015 ME and 8015 MP) (µg/kg)		Herbicides (8150) (µg/kg)					VOCs (8240) (µg/kg)					VOC TICs				
			Diesel	Gasoline	2,4,5-T	2,4,5-TP	2,4-DB	Dichloroprop	MCPP	Acetone	Benzene	Methylene chloride	Toluene	Xylenes	Ethyl acetate	Decanal	Methyl acetate	Nonanal	2-Ethylhexyl acetate
Reporting Limit		29		5800	7.8	6.6	36	25	7500	120	5.9	5.9	5.9	5.9	–	–	–	–	–
CAN-97-3C-04	28-30	<	16000GB@	<	<	<	<	180G	<	<	<	<	<	<		13		23	
CAN-97-3C-05	33-35	49@								<	<	8.8@	<	<					
CAN-97-3C-06	38-40	<	19000GB@	<	<	<	<	670G	<	<	<	4.4J	<	<					
CAN-97-3C-99[h]	38-40	<	24000GB@	<	<	<	<	<	<	<	<	<	<	<		6.7		5.6	
CAN-97-3C-08	48-50	<								<	<	<	<	<				5.6	
CAN-97-3C-09	53-55	<								<	<	<	<	<		9		9	
CAN-97-3C-10	58-60	<								<	<	<	<	<	78	8.6		11	
CAN-97-3C-11	63-65	<								<	<	<	<	<	31	7.3		7.3	
CAN-97-3C-12	68-70	<								<	<	<	<	<	7.4	6.3		8.4	
CAN-97-3C-13	71-73	<								<	<	<	<	<		5.3			
CAN-97-8B-03	14-16	33@	18000GB@	<	<	<	<	3.2J	<	9.7J	<	<	<	<					
CAN-97-8B-04	19-21	<	7100GB@		<	<	<	5.6J	<	<	<	<	<	<	41				
CAN-97-8B-05	24-26	51@								<	<	2.7J	<	<	30				
CAN-97-8B-06	29-31	35@								<	<	<	<	<	17				6.4
CAN-97-8B-07	34-36	<	21000GB@	<	<	<	<	250G	<	<	<	<	<	<	46				
CAN-97-8B-08	39-41	31@								<	<	<	<	<	16				
CAN-97-8B-09	44-46	40@								<	<	<	<	<	10				
CAN-97-8B-10	49-51	38@								<	<	<	<	<	42				
CAN-97-8B-11	54-56	29@	7200GB@	<	<	<	<	4.7J	<	<	<	<	<	<	71				
CAN-97-8B-12	59-61	<								<	<	<	<	<		8.3		7.1	
CAN-97-8B-99[i]	59-61	<								<	<	<	<	<		9.2		7.1	
CAN-97-BG-05	19-21	<								<	<	2.4J	0.28J	0.27J	7.1				
CAN-97-BG-07	32-34	<	7900GB@	<	<	<	<	<	<	<	1.6J	4.1J	2J	7.9@					

Table 4-7

(Continued)

Sample ID	Depth ft BLS	TRPH (9071/418.1) mg/kg	TPH (8015 ME and 8015 MP) (µg/kg)		Herbicides (8150) (µg/kg)					VOCs (8240) (µg/kg)					VOC TICs				
			Diesel	Gasoline	2,4,5-T	2,4,5-TP	2,4-DB	Dichloroprop	MCPP	Acetone	Benzene	Methylene chloride	Toluene	Xylenes	Ethyl acetate	Decanal	Methyl acetate	Nonanal	2-Ethylhexyl acetate
Reporting Limit		29		5890	7.8	6.6	36	25	7500	120	5.9	5.9	5.9	5.9	–	–	–	–	–
CAN-97-BG-08	34-36	<	6200GB@	<	<	<	<	<	<	<	<	<	0.72J	0.81J	15				
CAN-97-BG-09	39-41	<								<	<	<	<	<	10				
CAN-97-BG-10	44-46	<								<	<	<	<	<	6.4				
CAN-97-BG-11	51-53	<								<	<	<	<	<	11		4.7		
CAN-97-BG-12	56-58	<								<	<	<	2.8J	<	29		4.9		
CAN-97-BG-13	59-61	<								<	<	<	0.83J	<	11		5.4		

@ Result is less than five times reporting limit.
B Analyte detected in blank.
C Presence and concentration of analyte confirmed by second column analysis.
G (Herbicides) Presence of analyte confirmed by second column analysis but quantitation is estimated due to matrix interferences. (Diesel) Result does not match the characteristic diesel pattern but elutes in the retention time window, so is quantified as diesel.
J Estimated result is less than reporting limit.
< Compound was not detected in the sample at the reporting limit. All compounds detected between the instrument detection limit and the reporting limit are reported and "J-flagged."

[a] Field duplicate of CAN-97-11-09
[b] Field duplicate of CAN-97-13-S
[c] Field duplicate of CAN-97-14-02
[d] Field duplicate of CAN-97-16-I
[e] Field duplicate of CAN-97-17-06
[f] Field duplicate of CAN-97-19-S
[g] Field duplicate of CAN-97-2B-I
[h] Field duplicate of CAN-97-3C-06
[i] Field duplicate of CAN-97-8B-12
[j] Field duplicate of CAN-97-BG-01

Note: Only samples and analytes with at least one result greater than the reporting limit are included in this table. Complete results are in Appendix B. The results for tentatively identified compounds (TICs) are semi-quantitative and are listed only when a TIC is detected in a sample. Reporting limits are not available for TICs.

containing another target organic compound at concentrations above the method reporting limit. The B-flag indicates that the compound was also detected in the method blank associated with the sample. Sample concentrations have not been corrected for the blank concentrations. These results will be discussed in the following subsections. A detailed listing of these results is presented in Appendix B, Tables B-1 and B-2.

The mass spectral analyses of samples for VOCs and SVOCs result in the identification and quantitation of compounds given in the Target Compound List (TCL). Sometimes the mass spectra indicate the presence of additional organic compounds that are not on the TCL. These spectra are compared to a mass spectra library, and the compounds are tentatively identified based on similarities to the library spectra. These compounds are called tentatively identified compounds (TICs), and the assigned identity of the compound is, in most cases, highly uncertain. When a tentative identification cannot be made the compound is labeled as an unknown.

SW-846 provides procedures to identify and estimate the concentration of TICs. These estimates, however, are highly uncertain and could be orders of magnitude higher or lower than the actual concentration. When evaluating TIC data, it is important to note that the assigned identity may be incorrect and that the quantitation is likely to be inaccurate. Therefore, both the identification of TICs and their quantitation are highly uncertain and should be evaluated accordingly. TICs are listed in the data tables only when detected in a sample. Reporting limits are not available for TICs.

4.4.1 Organochlorine Pesticides and PCBs (SW8080)

Organochlorine pesticides were detected in 91 of the 139 field samples from Landfill No. 25. These included 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, aldrin, chlordane, dieldrin, endosulfan, endrin, heptachlor, heptachlor epoxide, alpha-BHC, beta-BHC, delta-BHC, and gamma-BHC. No PCBs were detected in these samples. Table 4-5 lists

only the samples found to contain one or more of the organochlorine pesticides detected above the reporting limit in a Landfill No. 25 sample. A G-flag on this data indicates that the second column analyses confirms the presence of the compound but that the concentration is estimated due to matrix interferences.

Trenches

The most prevalent organochlorine pesticides detected in the surface rubble (0 to 2 feet) samples from the trenches were 4,4'-DDE, 4,4'-DDD, and 4,4'-DDT. The maximum concentration of these compounds were found in samples CAN97-20-S (9.9 μg/kg 4,4'-DDD), CAN97-16-99 (12 μg/kg 4,4'-DDE), and CAN97-15-S (27 μg/kg 4,4'-DDT). The rubble/native soil interface samples contained up to 0.86 μg/kg 4,4'-DDD (CAN97-19-I), 12 μg/kg 4,4'-DDE (CAN97-16-I), and 9.2 μg/kg 4,4'-DDT (CAN97-19-I). Chlordane was also present in sample CAN97-19-I (10 μg/kg). The 6 to 8 feet BNS trench sample CAN97-19-06 contained 0.31 μg/kg 4,4'-DDD, 17 μg/kg 4,4'-DDE, 8.5 μg/kg 4,4'-DDT, and 17 μg/kg chlordane. The trench samples also contained dieldrin, endosulfan, endrin, heptachlor, heptachlor epoxide, and gamma-BHC. Each of these compounds were present at concentrations less than five times the method reporting limits for these samples.

Soil Boring Samples (0 to 11 feet BLS)

Chlordane, 4,4'-DDE, and 4,4'-DDT were the only target compounds present in concentrations greater than five times the method reporting limit in the soil boring samples from the 0 to 2, 4 to 6, and 8 to 10 feet depth intervals. One or more of these were present in four surface (0 to 2 feet) boring samples: CAN97-10-01 with 220 μg/kg 4,4'-DDE, 110 μg/kg 4,4'-DDT; CAN97-09-01 containing 20 μg/kg 4,4'-DDE, 10 μg/kg 4,4'-DDT, and 12 μg/kg chlordane; CAN97-8A-S with 4,4'-DDE; and CAN97-2A-2 containing 37 μg/kg 4,4'-DDT. Two samples from the 4 to 6 feet interval also exceeded these levels: CAN97-8A-I with 17 μg/kg 4,4'-DDE and CAN97-8B-01 which contained 16

μg/kg 4,4'-DDE, 41 μg/kg 4,4'-DDT, and 9.4 μg/kg chlordane. Samples from the 8 to 10 feet range did not contain any organochlorine pesticides at concentrations greater than five times the method reporting limits.

Soil Boring Samples (deeper than 11 feet BLS)

Only four organochlorine pesticides were detected at concentrations greater than five times the reporting limit in the deep soil boring samples. These include 4,4'-DDT (3 μg/kg in sample CAN97-9-10, 44 to 46 feet BLS), dieldrin (9.2 μg/kg in CAN97-3C-01, 12 to 14 feet BLS), gamma-BHC (7.5 μg/kg in CAN97-3C-01, 12 to 14 feet BLS), and beta-BHC. Beta-BHC was found in samples CAN97-3C-02 (18-20 feet BLS), CAN97-3C-04 (28-30 feet BLS), CAN97-3C-99 (duplicate of 38 to 40 feet BLS), CAN97-3C-08 (48 to 50 feet BLS), and CAN97-3C-09 (53 to 55 feet BLS) at concentrations up to 12 μg/kg. The dieldrin, beta-BHC, and gamma-BHC data is flagged with a G, indicating an estimated value due to matrix interferences.

4.4.2 Semivolatile Organic Compounds (SW8270)

Semivolatile organic compounds (SVOCs) results for samples with at least one or more of the target analytes detected at concentrations above the method reporting limit are listed in Table 4-6. Target SVOCs found in the Landfill No. 25 samples include benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, fluoranthene, phenanthrene, pyrene, butyulbenzylphthalate, and bis(2-ethylhexyl)phthalate. In addition, seven tentatively identified compounds (TICs) were detected in these samples including; tetrahydrofuran, cyclohexenol, chlorocyclohexenol, cyclohexenone, dimethylisopropylnaphthalene, trichloropropene(s), and cylohexanone. The results for TICS are semiquantitative and are listed only when a TIC is detected in a sample. Reporting limits are not available for TICs.

The TICs cyclohexenol, chlorocyclohexenol, cyclohexenone may be the degradation products cyclohexanol, chlorocyclohexanol, and cyclohexanone due to weathering. Tetrahydrofuran, cyclohexanol, chlorocyclohexanol, trichloropropene(s), and cyclohexanone are all solvents which have historically been used in paint and varnishes, tar and grease removers, or as pesticide solvents. Historical uses for these compounds support the possibility that they may be present at the site.

Trenches

The target SVOCs listed above were detected in the surface rubble samples from the trenches. All of these compounds were found in concentrations less than five times the method detection limits. Sample CAN97-13-99 also contained approximately 380 μg/kg cyclohexenol, a TIC. This compound was not detected in the field duplicate for this sample.

Soil Boring Samples (0 to 11 feet BLS)

The surface soil (0 to 2 feet BLS) from boring 11 and the background boring contained traces of PAHs. Three TICs were observed in the surface samples: 280 μg/kg cyclohexenol in CAN97-4B-S, 180 μg/kg dimethylisopropylnaphthalene in CAN97-11-01, and up to 180 μg/kg cyclohexenone in samples CAN97-4A-S and CAN97-8A-S. The only target analyte found in the 4 to 6 feet samples was bis(2-ethylhexyl)phthalate, which was detected in sample CAN97-11-02 at about twice the method reporting limit of 350 μg/kg. Three TICs were also found in this 4 to 6 feet BLS depth interval: 260 μg/kg chlorocyclohexenol in CAN97-BG-02, 290 μg/kg cyclohexenone in CAN97-10-02, and up to 780 μg/kg trichloropropene(s) in samples CAN97-3B-I, CAN97-8B-01, and CAN97-10-02. No target SVOCs were detected above the method reporting limit in the 8 to 10 feet BLS interval samples. Sample CAN97-8A-06 did contain three TICs: chlorocyclohexenol at 180 μg/kg, cyclohexenone at 180 μg/kg, and trichloropropene(s) at 260 μg/kg.

Soil Boring Samples (deeper than 11 feet BLS)

Bis(2-ethylhexyl)phthalate was the only target SVOC detected in the deep soil boring samples. Sample CAN97-8B-04 contained 5300 μg/kg, CAN97-BG-05 contained 480 μg/kg, and all other detected concentrations were less than the method reporting limit. Several TICs were observed in these samples. Sample CAN97-09-06 and its field duplicate, CAN97-09-99, contained about 220 μg/kg tetrahydrofuran. Chlorocyclohexenol was found in sample CAN97-8B-06 at 590 μg/kg. At least ten of the deep boring samples contained up to 950 μg/kg cyclohexenol, 5800 μg/kg cyclohexenone, and 880 μg/kg trichloropropene(s). These TICs were detected most frequently at locations 8B, 3A, 3C, and BG (background).

4.4.3 Total Recoverable Petroleum Hydrocarbons (SW9071/EPA 418.1)

The Landfill No. 25 samples were analyzed for total recoverable petroleum hydrocarbons (TRPH). Table 4-7 lists the results for samples found to contain detectable quantities of TRPH.

Trenches

TRPH was detected in all nine of the trench surface rubble samples (0 to 2 feet). The surface soil samples from locations 15, 17, 19, and 20 contained 1600, 9900, 400, and 610 mg/kg TRPH, respectively. Rubble/native soil trench sample CAN97-19-I contained 180 mg/kg TRPH. In the remaining trench samples, TRPH concentrations were less than five times the method reporting limit of 29 mg/kg.

Soil Boring Samples (0 to 11 feet BLS)

The surface soil (0 to 2 feet) from locations 2A, 2B, 11, and background contained up to 1700 mg/kg TRPH. The remaining soil boring samples (down to 11

feet) had TRPH concentrations less than five times the method reporting limit of 29 mg/kg.

Soil Boring Samples (deeper than 11 feet BLS)

Sample CAN97-3A-S (15 to 17 feet BLS) contained 330 mg/kg TRPH. The remaining deep soil boring samples (deeper than 11 feet BLS) had TRPH concentrations less than two times the method reporting limit of 29 mg/kg.

Total recoverable petroleum hydrocarbons (TRPH), benzene, diesel, gasoline, toluene, xylenes, 2,4,5-T, 2,4,5-TP, 2,4-DB, dichloroprop, MCPP, acetone, and methylene chloride were detected in one or more samples from Landfill No. 25. Table 4-7 lists only samples where one or more of these compounds was detected above the reporting limit.

4.4.4 Total Petroleum Hydrocarbons (SW8015MP/SW8015ME)

Forty of the field samples were analyzed for total extractable hydrocarbons (diesel, jet fuel, and kerosene) and total purgeable hydrocarbons (gasoline and its components). Table 4-6 lists the results for samples found to contain detectable quantities of purgeable and extractable TPH. Diesel was reported above the reporting limits in all of the equipment and method blanks associated with the field samples. Nearly all of the blank and field sample results are within a factor of five of the reporting limit (results flagged with an @), which indicates that these results are due to laboratory contamination. All of the diesel results are also flagged with a G, indicating that, although the laboratory reported this compound as diesel based on its retention time, the chromatograph did not match the characteristic diesel pattern. Therefore, field results up to five times the reporting limit (or 25,000 μg/kg) may be due to laboratory contamination. Corrective actions implemented to resolve the diesel contamination issue are described in the Quality Control Summary Report (Radian, February 1993). This

issue is addressed further in a supplemental report in Appendix P. Kerosene, jet fuel, gasoline, or its components were not detected in the equipment or method blanks. Since more reliable identification and quantitation for benzene, ethylbenzene, toluene, and xylenes is available by the mass spectral method SW8240, the results for these gasoline components will be discussed with the VOC data.

Trenches

The diesel contamination reported in samples CAN97-15-S (12,000 μg/kg), CAN97-BG-01 (33,000 μg/kg), and CAN97-19-06 (100,000 μg/kg) appears to be caused by the presence of asphalt in the samples. The chromatographs for the samples did not match the characteristic diesel pattern or the pattern observed in the associated blanks. Notations in field logbooks note the presence of asphalt at these locations. All other diesel results reported for the trench samples are attributed to laboratory contamination. This issue is addressed further in the supplemental report in Appendix P. Jet fuel and kerosene were not observed in the trench samples.

A gasoline-like compound was observed at or below the method reporting limit in trench samples CAN97-15-S, CAN97-18-S, and CAN97-21-S. These gasoline results are also flagged with a G, indicating that, although the laboratory reported this compound as gasoline based on its retention time, the chromatograph did not match the characteristic gasoline pattern. This compound was not observed in the associated blanks.

Soil Boring Samples (0 to 11 feet BLS)

All the diesel concentrations reported in the soil borings samples taken from 0 to 11 feet can be attributed to laboratory contamination. Jet fuel, kerosene, and gasoline were not detected in these samples.

Soil Boring Samples (deeper than 11 feet BLS)

All the diesel concentrations reported in the soil borings samples taken from depths deeper than 11 feet BLS can be attributed to laboratory contamination as discussed in Appendix P. Jet fuel, kerosene, and gasoline were not detected in these samples.

4.4.5 Chlorinated Herbicides (SW8150)

Forty-three field samples were analyzed for chlorinated herbicides. Table 4-7 lists the results for samples found to contain detectable quantities of chlorinated herbicides. Herbicide results flagged with a G indicate that the presence of the compound was confirmed by second column analyses, but that the quantitation is estimated due to matrix interferences.

Trenches

Dichloroprop, 2,4,5-T, 2,4,5-TP, 2,4-DB, and MCPP were detected in the trench samples. Samples containing chlorinated herbicides at concentrations greater than the method reporting limits were: CAN97-18-S (0 to 2 feet) which contained 9.6 μg/kg 2,4,5-T, 17 μg/kg 2,4,5-TP, and 190 μg/kg dichloroprop; CAN97-15-S (0 to 2 feet) with 34 μg/kg 2,4-DB; and CAN97-19-06 (5 to 7 feet) with 13 μg/kg 2,4,5-TP. All of these concentrations are estimated due to matrix interferences and are within a factor of five of the method reporting limits. No other target herbicides were present at concentrations greater than the method reporting limits in the trench samples.

Soil Boring Samples (0 to 11 feet BLS)

No target herbicides were present at concentrations greater than the method reporting limits in soil boring samples taken from 0 to 11 feet.

Soil Boring Samples (deeper than 11 feet BLS)

Dichloroprop, 2,4,5-TP, and MCPP were detected at locations 3C and 8B in the soil boring samples taken from depths greater than 11 feet. Samples containing these herbicides at concentrations greater than the method reporting limits were: CAN97-3C-01 (12 to 14 feet BLS) which contained 22 μg/kg 2,4,5-TP, 49 μg/kg 2,4,dichloroprop, and 9300 μg/kg MCPP; CAN97-3C-03 (23 to 25 feet BLS) with 180 μg/kg dichloroprop; CAN97-3C-05 (33-35 feet BLS) containing 670 μg/kg dichloroprop; and CAN97-8B-07 (34 to 36 feet BLS) with 250 μg/kg dichloroprop. All of these concentrations are estimated due to matrix interferences and are within a factor of five of the method reporting limits. No other target herbicides were present at concentrations greater than the method reporting limits in the soil boring samples taken from depths greater than 11 feet BLS.

4.4.6 Volatile Organic Compounds (SW8240)

Volatile organic compounds (VOCs) results for samples with at least one or more of the target analytes detected at concentrations above the method reporting limit are listed in Table 4-7. Target VOCs found in the Landfill No. 25 samples include; acetone, benzene, methylene chloride, toluene, and xylenes. In addition, five TICs were detected in these samples including; ethyl acetate, decanal, methyl acetate, nonanal, and 2-ethylhexyl acetate. The results for TICS are semiquantitative and are listed only when a TIC is detected in a sample. Reporting limits are not available for TICs.

Ethyl acetate, methyl acetate, and 2-ethylhexyl acetate have historically been used in plastic and coatings solvents, paint removers, lacquer solvent, and resin, wax and oil solvents. The historical uses for these compounds indicate that they may be present at the site. Decanal and nonanal have been used most frequently in perfumes and flavorings. The presence of these compounds do not appear to be consistent with

typical base practices. Therefore, the identification of decanal and nonanal are questionable.

Trenches

Acetone and benzene were detected in the trench soil samples at concentrations less than two times the method detection limits. Methylene chloride was detected in the surface rubble (0 to 2 feet) from all nine trench locations. Samples CAN97-13-S (37 μg/kg), CAN97-16-S (100 μg/kg), CAN97-17-S (86 μg/kg), CAN97-19-S (43 μg/kg), and CAN97-21-S (74 μg/kg) contained methylene chloride at concentrations exceeding five times the detection limit. With the exception of trench location 12, toluene was found in all the surface rubble trench samples at concentrations greater than the method detection limit of 5.9 μg/kg. The toluene concentration in these samples ranged from 7.8 μg/kg in CAN97-17-S to 220 μg/kg in CAN97-21-S. Only trench sample CAN97-21-S (25 μg/kg) contained xylenes at a concentration greater than the method reporting limit of 5.9 μg/kg.

Rubble/native soil interface samples in these trenches did not contain any VOCs at concentrations greater than the method detection limits. VOCs were not detected in the 6 to 8 feet trench samples. No TICs were detected in the trench samples.

Soil Boring Samples (0 to 11 feet BLS)

Acetone was the only target VOC detected at a concentration greater than three times the method reporting limit in the soil boring samples taken from 0 to 11 feet BLS. Sample CAN97-4A-I (4 to 6 feet BLS) contained 780 μg/kg acetone. Acetone was not detected in the other location 4A samples taken from the 0 to 2 feet or 8 to 10 feet intervals. Ethyl acetate (about 40 μg/kg), decanal (7.8 μg/kg), nonanal (about 8.5 μg/kg), and 2-ethylhexyl acetate (4.6 μg/kg) were observed at these locations.

Soil Boring Samples (deeper than 11 feet BLS)

With the exception of 35 μg/kg methylene chloride in CAN97-3C-01 (12 to 14 feet BLS), the soil boring samples taken from intervals deeper than 11 feet did not contain any target VOCs at concentrations greater than three times the method reporting limit.

However, a number of TICs were observed in these samples. Ethyl acetate was present in samples from each of the boreholes with concentrations ranging from 5 to 110 μg/kg. The background borehole contained ethyl acetate at concentrations up to 29 μg/kg in sample CAN97-BG-12 (56-58 feet BLS). Decanal was found in CAN97-09-08 (34-36 feet BLS) at 5.4 μg/kg; in the 3C borehole at depths ranging from 23 to 73 feet and concentrations ranging from 5.3 to 13 μg/kg; and in sample CAN97-8B-11 (59 to 61 feet BLS) at a concentration of about 9 μg/kg. Methyl acetate was detected in CAN97-09-10 (44-46 feet BLS); borehole 11 from 34 to 61 feet; and at the background borehole from 51 to 61 feet at concentrations ranging from 4.7 to 13 μg/kg. Nonanal was found CAN97-09-08 (34 to 36 feet BLS); borehole 3C from 23 to 70 feet; and borehole 8B from 54 to 61 feet at concentrations up to 23 μg/kg. 2-Ethylhexyl acetate was detected in only two of the deep boring samples: CAN97-10-11 (49 to 51 feet BLS) at 5 μg/kg and CAN97-8B-06 (29-31 feet BLS) at 6.4 μg/kg.

4.5 Comparison of Field Data to Soil Action Levels

The field data from the 1992 sampling efforts were compared to the soil action levels given in Appendix G; RCRA Proposed Subpart S Media Action Levels. These recommended media action levels were calculated according to the guidelines delineated in the Proposed Subpart S (40 CFR, Section 264.521) and the most current toxicological data. Action levels are not cleanup standards; rather, exceeding the media action level potentially triggers the need for a corrective measures study of a solid waste management unit.

One surface sample, CAN97-17-S, had a lead concentration of 120 mg/kg. This exceeded the soil action level of 114 mg/kg. The concentrations of all other target metals in the Landfill No. 25 samples, including those which exceeded background soil metals concentrations, were less than the proposed noncarcinogenic actions levels.

The CAFB background soil concentration for beryllium exceeds the carcinogenic soil action level listed in RCRA Subpart S, indicating that this criterion is not appropriate for the site. Nine of the Landfill No. 25 samples, containing 0.63 to 0.85 mg/kg beryllium, exceed the background soil beryllium concentration (0.62 mg/kg) established for CAFB.

Matrix spike recoveries for antimony by GFAAS indicate that those results could be biased as much as 95% low. If these results are corrected for such a bias, all antimony concentrations are still well below the action level of 32 mg/kg.

Similarly, selenium results could be biased as much as 50% low, but even when corrected for this bias, all selenium concentrations in samples are below the action level.

Eight of twenty matrix spikes for barium show very low recoveries for samples from the background as well as the affected areas. If corrected for a low bias of 95%, the five samples where barium was detected above the background UTL would all exceed the soil action level of 5,600 mg/kg. These samples contained high concentrations of calcium which interfered with the barium analyses.

All nine field samples in which thallium was detected by ICPES, plus nine more samples selected to provide information across the site at various depths, were reanalyzed for thallium by GFAAS. These samples all contained less than 1.2 mg/kg of thallium, which is below the soil action criterion of 4 mg/kg.

All organics results were below the noncarcinogenic soil action levels. Trench sample CAN97-15-S contained 970 μg/kg benzo(a)pyrene and 1000 μg/kg benzo(b)fluoranthene exceeding the carcinogenic soil action levels of 121 μ/kg and 864 μg/kg, respectively. All other target organic analytes were below the carcinogenic soil action levels.

5.0 DISCUSSION

This section discusses the results presented in Section 4.0. The discussion will follow the same format as the presentation of the results.

5.1 Site Geology and Ecology

Landfill No. 25 contains a mix of surface and subsurface rubble (Figure 1-6). The site is underlain by the Ogallala Formation that changes with depth from a well cemented sandstone with abundant caliche to an unconsolidated sand (Figures 4-2, 4-3, and 4-4). The subsurface rubble pile on the north side of the site supports an immature soil horizon which tends to disguise the subsurface rubble. Various grasses, shrubs, and trees grow from the subsurface rubble. It is possible that these trees, which are absent on the southern half of the site, are present because of increased infiltration through the less consolidated rubble. Water may pool at the rubble/native soil interface where it becomes an ample source of water for this vegetation.

The overall vegetative cover is patchy. Grasses, shrubs, and rubble cover up to 50% of the site and the rest is exposed sandy soil. Consequently, the site is moderately susceptible to erosion from wind and runoff. Runoff from the site eventually collects in Playa Lake which is located southeast of Landfill No. 25.

The Ogallala formation underlying the rubble is fine-grained and alkaline. While the caliche layers are not likely to provide a physical impedance to downward migration of chemicals, the alkaline and oxidizing conditions inhibit metal solubility, and consequently, downward migration.

5.2 Metals

Arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, manganese, mercury, molybdenum, selenium, vanadium, and zinc where all detected at concentrations exceeding the upper tolerance levels (UTL) which were calculated based on background soil concentrations (see Section 4.3). Data exceeding the UTLs are by definition significantly greater than background concentrations for that metal. On average, the highest concentration of metals was found in the top 11 feet of soil. Metals concentrations greater than twice the UTL were not detected below 11 feet. Other than one cadmium detection at 48 feet, no samples below 31 feet had metal concentrations exceeding the UTLs.

One surface sample exceeded the noncarcinogenic RCRA Proposed Subpart S Media Action Level for lead. All other target metals, including those listed above as being above background UTLs, were less than the proposed noncarcinogenic action levels.

Beryllium was the only metal detected at concentrations above the carcinogenic soil action level. However, beryllium in background samples also exceeded this level suggesting that this proposed soil action level is not appropriate for this site.

5.3 Organochlorine Pesticides and PCBs

4,4'-DDD, 4,4'-DDE, 4,4'-DDT, aldrin, chlordane, dieldrin, endosulfan, endrin, heptachlor epoxide, alpha-BHC, beta-BHC, delta-BHC, and gamma-BHC were detected in one or more of the samples collected from Landfill No. 25. No PCBs were detected at the site.

The most prevalent organochlorine pesticides detected were in the near surface samples. All detections for samples taken below 11 feet are either flagged "G" or "@" indicating matrix interference or levels close to the reporting limit.

No organochlorine pesticides were detected at concentrations exceeding either the noncarcinogenic or the carcinogenic soil action levels.

5.4 Semivolatile Organic Compounds

Eleven target SVOCs were detected in shallow soils, including nine PAHs and bis(2-ethylhexyl)phthalate. All concentrations of these compounds from the 0 to 2 foot depth interval were less than five times the reporting limit. One target SVOC (phenanthrene) was detected at twice the reporting limit in one sample from the 4 to 6 foot depth. Target SVOCs were not detected at concentrations greater than the method reporting limit from 8 to 11 feet. Below 11 feet, bis(2-ethylhexyl)phthalate was detected in boring 8B and in the background boring. No other target SVOC compounds were above method reporting limits in samples collected below 11 feet.

All target SVOC compounds are below the noncarcinogenic soil action levels. One surface sample, CAN97-15-S, exceeded the carcinogenic soil action level for benzo(a)pyrene and benzo(b)fluoranthene. No other SVOCs were found in concentrations exceeding the carcinogenic soil action levels.

The SVOC TICs, tetrahydrofuran, cyclohexanol, chlorocyclohexanol, trichloropropene, and cyclohexanone are all solvents that historically have been used in paint and varnishes, tar and grease removers, or as pesticide solvents. These compounds are tentatively identified in samples from all depth ranges. Historical uses for these compounds support the possibility that they may have been present at the site.

5.5 Total Recoverable Petroleum Hydrocarbons

TRPH concentrations are highest at the surface with a maximum concentration of 9900 mg/kg and decrease with depth. From 4 to 11 feet, TRPH concentrations are within five times the method reporting limit. Other than one sample (CAN97-3A-S), all levels below 11 feet are within twice the method reporting limit.

5.6 Total Petroleum Hydrocarbons

Three samples, one each from trenches 15, 19, and BG, had high levels of diesel that is suspected to be asphalt. All of the remaining detected concentrations can be attributed to laboratory contamination. This issue is addressed further in a supplemental report in Appendix P. No gasoline, jet fuel, or kerosene was detected.

5.7 Chlorinated Herbicides

Herbicides were at concentrations greater than five times the reporting limit in the surface samples from trenches 15 and 18, and in the 5 to 7 foot sample from trench 19. No herbicides were detected in the borings between 0 and 11 feet. Herbicides were detected in borings 3C and 8B to a depth of 40 feet, but were within the range of five times the method reporting limit. No other herbicides were found at concentrations above the method reporting limit.

No chlorinated herbicides were detected at concentrations that exceed the noncarcinogenic or carcinogenic soil action levels.

5.8 Volatile Organic Compounds

Acetone, benzene, toluene, and methylene chloride were detected in some trench surface samples. Acetone was found in the 4 to 6 foot sample from trench 8A at

a concentration less than two times the method reporting limit. VOCs were not detected above the method reporting limit in the remaining trench samples taken from 4 to 8 feet. Acetone in the 4 to 6 foot sample from borehole 4A and methylene chloride in the 12 to 14 foot sample from borehole 3C were found at concentrations above the method reporting limits. No other target VOCs were detected in the subsurface soil at concentrations greater than the method reporting limit.

VOC TICs were detected in boring samples from the northern half of the site. Ethyl acetate, nonanal, 2-ethylhexyl acetate, and methyl acetate were detected in samples down to 61 feet. No volatile TICs were detected in the trenches. No VOCs detected exceeded the noncarcinogenic or carcinogenic soil action levels.

Section Tab

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Section Tab

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6.0 RISK ASSESSMENT

This section of the report presents the risk assessment and receptor/pathway identification conducted to support an informed decision regarding the need for remediation at Landfill No. 25. Section 6.1 describes the process used to identify the chemicals of potential concern and presents those chemicals that are quantified for risk in this report. Section 6.2 presents an assessment of the populations potentially exposed to the chemicals of potential concern and includes a conceptual site model. Section 6.3 identifies exposure pathways and scenarios. A toxicity assessment of the chemicals of potential concern is presented in Section 6.4 (toxicological profiles are presented in Appendix N). Potential health risks are described in the risk characterization presented in Section 6.5. Section 6.6 presents a qualitative environmental evaluation. Section 6.7 presents conclusions of the baseline risk assessment.

6.1 Identification of Chemicals of Potential Concern

Contaminants of potential concern for CAFB Landfill No. 25 were identified following guidance in Chapter 5 (Data Evaluation) of *Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual* (Part A) (USEPA, 1989a), and the *Guidance for Data Useability in Risk Assessment* (EPA, 1992). USEPA guidance stipulates the following nine-step data evaluation process to organize the data into a form appropriate for a comprehensive risk assessment:

1. Gather all data available from the site investigation and sort by medium;
2. Evaluate the analytical methods used;
3. Evaluate the quality of data with respect to sample quantitation limits;
4. Evaluate the quality of data with respect to qualifiers and codes;
5. Evaluate the data with respect to blanks;

6. Evaluate tentatively identified compounds;

7. Compare potential site-related contamination with background.

8. Develop a set of data for use in the risk assessment; and

9. If appropriate, further limit the number of chemicals to be carried through the risk assessment.

This subsection summarizes the data review process and its results.

6.1.1 Step 1: Data Available from Site Investigations

Analytical data from the 1992 RCRA Facility Investigation (RFI) performed at Landfill No. 25 have been used in this risk assessment. Additional soil data collected from the Sampling and Analysis Plan for the Concrete Rubble Pile (SWMU 97) prepared by the Tulsa District of the U.S. Army Corps of Engineers (USACE), February 1991, were reviewed and compared to soil data under the 1992 RI. Background data from pertinent IRP and RI documents summarized by Woodward-Clyde and those collected during this investigation were also reviewed. Frequency of detection and inorganic concentration ranges for each of these sampling events are presented in Table 6-1.

Between 1990 and 1991, the Tulsa District USACE conducted an environmental assessment at the north end of Landfill No. 25 to gather information on soil characteristics. The assessment focused on a concrete rubble pile and the underlying soil. Nine trenches were excavated during this assessment. Four trenches were excavated through the rubble and extended five feet into undisturbed soil. Two soil samples were collected from each of the trenches at depths between 0 and 1 foot and 4 and 5 feet. Figure 2-1 in Section 2.2 of this report shows the location of soil borings and excavation trenches. NDRC Laboratories analyzed the samples for organic and inorganic contaminants using standard USEPA methods. Benzidine and bis(2-

Table 6-1

Concentration Ranges of Soil Data Collected for Landfill No. 25, CAFB, Clovis, New Mexico

Analytes	1990-91 Data [a]		1992 Data [b]		Background Concentrations [c]	
	Frequency of Detection	Concentration Ranges (mg/kg)	Frequency of Detection	Concentration Ranges (mg/kg)	Frequency of Detection	Concentration Ranges (mg/kg)
Arsenic	8/8	1.7 - 3.0	122/125	0.23 - 9.0	49/49	0.63 - 28
Barium	8/8	63.9 - 705	125/126	7.3 - 1700	52/52	7.6 - 1200
Cadmium	8/8	1.8 - 45.5	100/126	0.39 - 1.2	21/38	0.065 - 4.2
Cobalt	8/8	3.1 - 6.7	124/126	0.94 - 5.0	53/53	400 - 22,000
Chromium	8/8	5.9 - 15.4	125/126	2.0 - 17	42/45	1.6 - 15.4
Copper	8/8	3.3 - 20.2	125/129	1.4 - 13	24/40	0.69 - 4.9
Mercury	7/8	0.01 - 0.65	56/130	0.098	45/45	17 - 216
Manganese	8/8	57 - 198	126/127	20 - 460	11/29	0.0235 - 0.062
Molybdenum	6/8	28 - 106	102/130	0.0023 - 1.1	12/12	0.075 - 0.505
Nickel	8/8	7.1 - 13.1	125/126	1.4 - 13	44/45	1.3 - 12.5
Selenium	6/8	0.3 - 2.7	74/129	0.03 - 1.9	14/35	0.0016 - 123.9
Vanadium	8/8	12.3 - 27.9	127/127	5.0 - 39	45/45	5 - 28.3
Zinc	8/8	14.6 - 31.6	126/126	3.6 - 130	27/43	4 - 27.5

a On-site data taken from the 1990 - 1991 environmental assessment of the concrete rubble pile (USACE, 1991).

b On-site data collected during the 1992 RFI (Radian, 1992).

c On-site background data compiled from the 1992 RFI (Radian, 1992) and other IRP projects (Woodward-Clyde, 1993). Statistical analysis was performed to compare background data to site data, see Appendix I.

ethylhexyl) phthalate were detected once, but no other organic contaminants were detected or identified. Benzidine was not detected during the 1992 RFI and bis(2-ethylhexyl) phthalate was eliminated (from the 1992 results) due to contamination. Arsenic, barium, cadmium, cobalt, chromium, copper, mercury, manganese, molybdenum, nickel, selenium, vanadium, and zinc were detected in the surface and subsurface soils during the 1990-91 environmental assessment. Sampling procedures and analytical methods are comparable to those used in the 1992 RFI. Results from the 1990-91 environmental analyses were not included in this risk assessment, because QA/QC data were not available for review. However, considering the small number of samples collected in 1990-91, including the data with the 1992 data would have minimal, if any, impact on the results of the risk assessment. Additional background data were taken from a review of pertinent IRP and RI documents summarized by Woodward-Clyde Consultants (Woodward-Clyde, 1993). Data taken from this report are presented in Appendix H.

The objective of the 1992 RFI at Landfill No. 25 was to further define and confirm subsurface contamination. Field investigation activities occurred between 28 September and 18 October 1992. Soil samples were taken from 14 soil borings and 9 excavated trenches. Nine of the 14 soil borings were drilled through approximate locations of four former excavation trenches to confirm the presence of contamination previously identified in the 1990-91 environmental assessment. Eight soil borings were drilled to 60 feet below native soil (BNS) with samples collected on the surface and at five feet intervals. One of the 60 feet borings was a background boring located west of the perimeter road and north of the sewage lagoons. The other six borings were drilled to 10 feet with soil samples collected on the surface, between 4 and 6 feet, and between 8 to 10 feet. All results from the 1992 RFI were evaluated in this risk assessment. Figure 4-1 presents the sample locations.

Appendix H presents analytical data used in this risk assessment.

6.1.2 Step 2: Analytical Methods

A detailed evaluation of the analytical methods used and a Quality Assurance/Quality Control (QA/QC) evaluation of the data are presented under separate cover in the Quality Control Summary Report (QCSR) (Radian, 1993). The QA/QC evaluation of the data was a factor in choosing the list of chemicals of potential concern. A summary of the QA/QC concerns that pertain to the risk assessment are discussed below.

Total Recoverable Petroleum Hydrocarbons (TRPH)

- TRPH was detected above the reporting limit in three of seven equipment blanks. TRPH was not detected above the reporting limit (0.25 mg/L) in the method blanks. TRPH concentrations up to 0.41 mg/L may be due to incomplete decontamination of sampling equipment.

Metals

- Based on recovery of barium in matrix spike samples, reported concentrations for barium may be biased low. This is due to the high levels of calcium in the field samples; calcium interferes with the analysis of barium.
- Sixteen of 24 selenium matrix spike recoveries fell below the acceptance criteria of 75-125 percent. Reported field samples concentrations may be up to 50% low for selenium.
- Lead was detected above the reporting limit (0.003 mg/L) in four of seven equipment blanks, ranging from 0.0045 to 0.0086 mg/L. These equipment blanks are CAN-97-ER-01, CAN-97-ER-02, CAN-97-ER-03, and CAN-97-ER-04. Lead was detected above the reporting limit (0.3 mg/kg) in one method blank (0.34 mg/kg). Field samples associated with these equipment blanks may be expected to show similar background levels of lead.

Method 8015 (Diesel and Gasoline)

- A compound eluting within the diesel retention time, and reported as diesel, was detected in both equipment blanks and all eight method blanks. Although reported as diesel, the chromatographic pattern for the compound does not match the characteristic pattern for diesel. Since the chromatographic pattern for the field results match the pattern for the blank results, the contaminant listed as diesel in the report is probably due to laboratory contamination. (See Appendix P for further detail.) To provide the most conservative estimate of risk, the contaminant was included as diesel in this risk assessment.

Method 8080 (Organochlorine Pesticides and PCBs)

- Low levels of several pesticides were detected in equipment blank CAN-97-ER-03, including alpha-BHC (0.011 μg/L), 4,4'-DDD (0.025 μg/L), endrin (0.018 μg/L), heptachlor (0.078 μg/L), and heptachlor epoxide (0.015 μg/L). Delta-BHC was also detected in CAN-97-ER-05 and CAN-97-ER-02, at 0.016 and 0.015 μg/L, respectively. Aldrin was detected in CAN-97-ER-04 at 0.011 μg/L. The reporting limit is 0.01 μg/L for all associated compounds. Similar low levels of these pesticides in associated field samples may be due to outside sources of contamination.

- The following samples may be affected by method blank contamination above the reporting limit for 4,4'-DDD: CAN-97-19-99; CAN-97-19-S; CAN-97-20-S; CAN-17-S; CAN-97-4A-I; CAN-97-4A-06; CAN-97-4A-S; CAN-97-10-07; CAN-97-10-08; CAN-97-10-09; CAN-97-10-10; CAN-97-10-11; CAN-97-10-04; CAN-97-10-12; CAN-97-10-13; and CAN-97-10-02. 4,4'-DDD was detected up to 0.40 μg/kg in method blanks. The reporting limit for 4.4'-DDD is 0.33 μg/kg.

- Samples that may be affected by method blank contamination above the reporting limit for gamma-BHC include: CAN-97-2B-99; CAN-97-2B-06; CAN-97-2B-I; CAN-97-8A-I; and CAN-97-2A-I. Gamma-BHC was detected up to 0.79 μg/kg in the method blank for these samples. The reporting limit for gamma-BHC is 0.33 μg/kg.

- The following samples may be affected by method blank contamination above the reporting limit for heptachlor epoxide: CAN-97-20-06; CAN-97-16-06; CAN-97-13-06; CAN-97-4A-99; CAN-97-4A-S; CAN-97-10-01; CAN-97-10-06; and CAN-97-12-I. Heptachlor epox-

ide was detected up to 1.3 μg/kg; this amount was reported as estimated. The reporting limit for heptachlor epoxide is 0.33 μg/kg.

Method 8240 (Volatile Organics)

- Samples associated with trip blank CAN-97-TB-27 may contain methylene chloride just above the reporting limit, at or near 7.1 μg/L, due to contamination. The reporting limit for methylene chloride is 5 mg/L. These samples include: CAN-97-3A-I; CAN-97-8B-02; CAN-97-4A-I; CAN-97-09-08; CAN-97-09-01; CAN-97-8B-12; CAN-97-8B-99; CAN-97-09-07; CAN-97-09-06; CAN-97-09-99; and CAN-97-8B-07.

Method 8270 (Semivolatile Organics)

- Bis(2-ethylhexyl) phthalate was detected in equipment blank CAN-97-ER-02 above the reporting limit (10 μg/L), at 14 μg/L. Similar levels may be expected in field samples associated with this equipment blank due to contamination.

6.1.3 Step 3: Quantitation Limits

RFI data reports provide reporting limits (RLs) specific to each sample. The sample RLs take into account sample characteristics (e.g., matrix; dry weight), and analytical dilutions. RLs represent the lower bound of reliable laboratory data using multiple instruments and are the equivalent of method quantitation limits (the minimum concentration that can be measured and reported). The RL reported for each sample is the lowest reliable concentration available and is used as the sample quantitation limit (QL) for this risk assessment.

For the purpose of this risk assessment, a positive result included values at and below the RL. If a chemical was not detected in any sample, it was eliminated from the list of chemicals of potential concern. If a chemical was detected in some but not all

samples, one-half the RL was used as a proxy concentration for non-detects. Samples with an analytical result of non-detect associated with unusually high RLs were eliminated from the quantitative risk assessment. RLs were considered unusually high if the proxy concentration (one-half the RL) exceeded positive results for the same chemical in other samples.

Data associated with the chemicals to which no uncertainties are attached concerning the assigned identity of the chemical or the significance of site-related concentrations compared to background concentrations (inorganic chemicals only) are appropriate for use in the quantitative risk assessment.

6.1.4 Step 4: Data Qualifiers or Codes

Data qualifiers or codes were presented with the analytical results so that uncertainties could be identified and evaluated. Laboratory qualifier codes associated with the analytical data are described below.

All Methods

B Blank subtraction was not performed for analytes detected in associated system, method, or field blank. Use of these data in the risk assessment is discussed in Section 6.1.5.

@ Reported result was greater than the RL, but less than five times greater. The reported value was used in the risk assessment.

J The RL is higher than the reported result. The value was used in the risk assessment.

Methods 8080/8150

G Identity of analyte confirmed by second column analysis but the quantitation is estimated. Primary column result was used in the risk assessment.

Method 8015

G Result does not match the characteristic diesel pattern, but elutes in the retention time window, so was quantitated as diesel. (See Appendix P.)

Method 8270

X Benzo(b)fluoranthene co-elutes with benzo(k)fluoranthene. The recovery reported is the combined total of the two compounds. The value was used in this risk assessment.

6.1.5 Step 5: Blanks

Field and laboratory blanks were included in the analytical program to provide an indication of the introduction of contaminants into samples during collection or analysis. Positive results qualified by the presence of the analyte in associated blanks were evaluated according to USEPA guidance (USEPA, 1989a). Sample results for common laboratory contaminants (acetone, methylethyl ketone, methylene chloride, toluene, and the phthalate esters) were considered positive only if the concentration exceeded ten times the maximum amount detected in any associated blank. If the concentration of a common laboratory contaminant was less than or equal to ten times the blank concentration, the sample was considered to be contaminated. Chemicals that are not common laboratory contaminants were evaluated in the same way, but using five times the maximum blank-related concentration to distinguish between non-detects and contamination.

After eliminating samples due to blank contamination, if all results for a chemical were considered to be non-detects, that chemical was eliminated from the list of chemicals of potential concern. Appendix H lists all blank contaminated samples and their associated blanks.

6.1.6 Step 6: Tentatively Identified Compounds

The mass spectral analyses of samples for VOCs and SVOCs result in the identification and quantitation of compounds given in the Target Compound List (TCL). Sometimes the mass spectra indicate the presence of additional organic compounds that are not on the TCL. These spectra are compared to library spectra, and the compounds are tentatively identified based on similarities to the library spectra. These compounds are called tentatively identified compounds (TICs), and the assigned identity of the compound is, in most cases, highly uncertain.

The Contract Laboratory Protocol Scope of Work provides procedures to estimate the concentration of TICs. These estimates, however, are highly uncertain and could be orders of magnitude higher or lower than the actual concentration. When evaluating TIC data, it is important to note that the assigned identity may be incorrect and that the quantitation is likely to be inaccurate. Only three of the identified TICs (ethyl acetate, methyl acetate, and trichloropropene) have USEPA sanctioned toxicity values. None of the three are considered to be carcinogenic. Soil action levels (for noncarcinogenic effects) were calculated for these three TICs and compared to the highest value detected in soils at Landfill No. 25. There was at least two orders of magnitude difference between the highest detected value and the calculated soil action level for all three TICs. Therefore, no TICs were included in this risk assessment.

6.1.7 Step 7: Background Concentration Comparison

A statistical analysis was performed to compare analytical results of inorganic constituents found at Landfill No. 25 to results of inorganics found at several background sites. Background data collected during this investigation, as well as data from a Woodward Clyde document (Woodward-Clyde, 1993) were used in the analysis. The purpose of the comparison was to determine which on-site metal concentrations were significantly greater than naturally occurring metal concentrations. This comparison

provided a valid means for determining which metals to include as chemicals of potential concern. Inorganic constituents with results significantly greater than background concentrations were considered to be contaminants of potential concern.

Several statistical tests were used in the background concentration comparison of Landfill No. 25. The type of statistics used for analysis depended on distribution of the data and number of detects. The Wilcoxon rank sum test was performed on landfill and background results for aluminum, arsenic, beryllium, cadmium, chromium, cobalt, copper, lead, manganese, mercury, molybdenum, selenium, vanadium, and zinc. Antimony, silver, and thallium were compared to background using the Poisson test. The Student's t-Test was run for nickel results. A log normal Student's t-Test was used on barium results for the background concentration comparison. A more detailed discussion of statistical methods used in this risk assessment is presented in Appendix I.

6.1.8 Steps 8 and 9: Data Set Used in the Risk Assessment

USEPA guidance (USEPA, 1989a) stipulates that the list of chemicals of potential concern include chemicals that were:

1. Positively detected in at least one sample in a given medium, including: a) chemicals with no qualifiers attached (excluding samples with unusually high RLs) and, b) chemicals with qualifiers attached that indicate known identities but unknown concentrations (e.g., J-qualified data);

2. Detected at levels significantly above levels of the same chemicals detected in associated blank samples; and

3. Detected at levels significantly above naturally occurring background levels of the same chemicals (inorganics only).

Appendix H presents all analytical data used in this risk assessment for chemicals of potential concern.

Elimination of chemicals from the risk assessment was limited due to the lack of historical documentation of Landfill No. 25 concerning types of wastes and disposal procedures. USEPA's preference is to include all chemicals that meet the three criteria described above. However, further procedures for reducing the number of chemicals included in the quantitative risk assessment are permissible under USEPA risk assessment guidelines (USEPA, 1989a). For this risk assessment, 73 chemicals met the criteria specified by USEPA. Taking this number of chemicals through the quantitative risk assessment would unnecessarily complicate the risk assessment and could distract from the dominant risks associated with Landfill No. 25. Therefore, the number of chemicals of concern were further reduced by eliminating essential nutrients and performing a concentration/ toxicity screen. This approach allowed identification of the chemicals most likely to contribute significantly to risks associated with Landfill No. 25 and focused the risk assessment on the risk drivers.

The concentration/toxicity screen used in this risk assessment is outlined in Section 5.9 of the *Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual* (Part A) (USEPA, 1989a) and involved calculating a risk factor for each chemical. The risk factor was determined by multiplying the highest concentration detected for each chemical by its corresponding toxicity value (i.e., slope factor or 1/RfD). A different risk factor was calculated for carcinogenic and noncarcinogenic effects. Chemical-specific risk factors were then summed to obtain a total risk factor for carcinogenic or noncarcinogenic effects. The ratio of the risk factor for each chemical to the total risk factor approximates the relative risk for each chemical. Chemicals that were detected less than 10% of the time and contributed less than 1% of the total risk factor were eliminated from the quantitative risk assessment. Appendix H (Section 4) presents the results of the concentration/toxicity screen. Chemicals carried through the quantitative risk assessment are presented in Table 6-2. Table 6-3 lists all analytes eliminated from the quantitative risk assessment and the rationale for their elimination.

Table 6-2

Chemicals Taken Through the Quantitative Risk Assessment for Landfill No. 25 CAFB, Clovis, New Mexico

Analytes	
Organics	Inorganics
Benzene	Aluminum
Benzo(a)pyrene	Arsenic
Benzo(b)fluoranthene	Manganese
Benzo(k)fluoranthene	Thallium
Beta BHC	Vanadium
4,4'-DDE	Zinc
4,4'-DDD	
4,4'-DDT	
Diesel	
Fluoranthene	
Heptachlor epoxide	
Heptachlor	
Hydrocarbons	
MCPP	
Methylene chloride	
Pyrene	
Toluene	

Table 6-3

Analytes Eliminated From the Quantitative Risk Assessment for Landfill No. 25 CAFB, Clovis, New Mexico

Analytes	Rationale for Assessment
Organics	
Acenaphthene	Less than 1% of the total risk factor [a]
Acetone	Less than 1% of the total risk factor [a]
Acetophenone	Less than 5 times MB
Aldrin	Less than 1% of the total risk factor [a]
alpha BHC	Less than 1% of the total risk factor [a]
4-Aminobiphenyl	Less than 1% of the total risk factor [a]
Anthracene	Less than 1% of the total risk factor [a]
Benzo(a)anthracene	Less than 1% of the total risk factor [a]
Benzo(g,h,i)perylene	Less than 1% of the total risk factor [a]
Benzoic acid	Less than 5 times the EB
Bis (2-Ethylhexyl)phthalate	Less than 5 times the EB
Butylbenzyl-phthalate	Less than 1% of the total risk factor [a]
C_3-Naphthalene	Tentatively identified compound
Carbon disulfide	Less than 1% of the total risk factor [a]
Chlordane	Less than 1% of the total risk factor [a]
Chlorobenzene	Less than 1% of the total risk factor [a]
Chlorocyclohexenol	Tentatively identified compound
Chrysene	Less than 1% of the total risk factor [a]
Cyclohexenenone	Tentatively identified compound
Cyclohexenol	Tentatively identified compound
Cyclohexenol B	Tentatively identified compound
Cyclohexenone	Tentatively identified compound
Cyclohexenone B	Tentatively identified compound

[a] Chemicals were detected at a frequency of less than 10%. Approximately 0.2% and 0.6% of the total carcinogenic and noncarcinogenic risk factors, respectively, was eliminated by the concentration toxicity screen.

MB = Method blank
EB = Equipment blank
TB = Trip blank

Table 6-3
(Continued)

Analytes	Rationale for Assessment
2,4-D	Less than 1% of the total risk factor [a]
2,4-DB	Less than 1% of the total risk factor [a]
Decanal	Tentatively identified compound
Decanal B	Tentatively identified compound
delta BHC	Less than 1% of the total risk factor [a]
Dibenzo(a,h)anthracene	Less than 1% of the total risk factor [a]
Dibenzofuran	Less than 1% of the total risk factor [a]
Dibutylphthalate	Less than 1% of the total risk factor [a]
Dichloroprop	Less than 1% of the total risk factor [a]
Dieldrin	Less than 1% of the total risk factor [a]
Dimethylisopropylnaphthalene	Tentatively identified compound
Endosulfan I	Less than 1% of the total risk factor [a]
Endosulfan II	Less than 1% of the total risk factor [a]
Endosulfan sulfate	Less than 1% of the total risk factor [a]
Endrin	Less than 1% of the total risk factor [a]
Endrin aldehyde	Less than 1% of the total risk factor [a]
Endrin ketone	Less than 1% of the total risk factor [a]
Ethyl acetate	Tentatively identified compound
Ethylbenzene	Less than 1% of the total risk factor [a]
Flourene	Less than 1% of the total risk factor [a]
gamma BHC	Less than 1% of the total risk factor [a]
Gasoline (2)	Less than 1% of the total risk factor [a]
2-Hexanone	Less than 1% of the total risk factor [a]
Indeno(1,2,3-cd)pyrene	Less than 1% of the total risk factor [a]
Methyl acetate	Tentatively identified compound
Methyl ethyl ketone	Less than 10 times the TB

[a] Chemicals were detected at a frequency of less than 10%. Approximately 0.2% and 0.6% of the total carcinogenic and noncarcinogenic risk factors, respectively, was eliminated by the concentration toxicity screen.

MB = Method blank
EB = Equipment blank
TB = Trip blank

Table 6-3
(Continued)

Analytes	Rationale for Assessment
2-Methylnaphthalene	Less than 1% of the total risk factor *
Nananal	Tentatively identified compound
Naphthalene	Less than 1% of the total risk factor *
Phenanthrene	Less than 1% of the total risk factor *
2,4,5-T	Less than 1% of the total risk factor *
2,4,5-TP (silvex)	Less than 1% of the total risk factor *
Tetrahydrofuran	Tentatively identified compound
Trichloroethene	Less than 1% of the total risk factor *
Trichloropropene	Tentatively identified compound
Trichloropropene B	Tentatively identified compound
Unknown	Tentatively identified compound
Unknown acetate	Tentatively identified compound
Unknown aldehyde	Tentatively identified compound
Unknown alkane	Tentatively identified compound
Unknown alkene	Tentatively identified compound
Unknown alkene B	Tentatively identified compound
Unknown B	Tentatively identified compound
Unknown $C_{10}H_{16}$	Tentatively identified compound
Unknown carboxylic acid	Tentatively identified compound
Unknown cyclic ether	Tentatively identified compound
Unknown cyclic ether B	Tentatively identified compound
Unknown cyclohexane	Tentatively identified compound
Unknown ester	Tentatively identified compound
Unknown hydrocarbon	Tentatively identified compound
Unknown oxirane	Tentatively identified compound
Unknown PNA	Tentatively identified compound

* Chemicals were detected at a frequency of less than 10%. Approximately 0.2% and 0.6% of the total carcinogenic and noncarcinogenic risk factors, respectively, was eliminated by the concentration toxicity screen.

MB = Method blank
EB = Equipment blank
TB = Trip blank

Table 6-3
(Continued)

Analytes	Rationale for Assessment
Unknown silane	Tentatively identified compound
Unknown sterol	Tentatively identified compound
Unknown trichloropropene	Tentatively identified compound
Unknown trimethylhexene	Tentatively identified compound
Unknown turpene	Tentatively identified compound
Xylenes	Less than 1% of the total risk factor
Inorganics	
Antimony	Within background concentrations
Barium	Within background concentrations
Beryllium	Within background concentrations
Cadmium	Within background concentrations
Calcium	Necessary nutrient
Chromium	Within background concentrations
Cobalt	Within background concentrations
Copper	Within background concentrations
Iron	Necessary nutrient
Lead	Within background concentrations
Magnesium	Necessary nutrient
Mercury	Within background concentrations
Molybdenum	Within background concentrations
Nickel	Within background concentrations
Potassium	Necessary nutrient
Selenium	Within background concentrations
Silver	Within background concentrations
Sodium	Necessary nutrient

[a] Chemicals were detected at a frequency of less than 10%. Approximately 0.2% and 0.6% of the total carcinogenic and noncarcinogenic risk factors, respectively, was eliminated by the concentration toxicity screen.

MB = Method blank
EB = Equipment blank
TB = Trip blank

A total 0.2% of the carcinogenic risk factor and 0.6% of the noncarcinogenic risk factor was eliminated from the quantitative risk assessment using the concentration/toxicity screen.

6.1.9 Data Limitations/Data Gaps

During this investigation, soil samples were collected and analyzed. No groundwater samples or rubble pile samples from the northern portion of the landfill were taken. Therefore, the assessment of chemicals of concern was limited to contaminants found in the surface soil or in the soils beneath Landfill No. 25. Limitations of analytical methods in detection of chemicals below the instrument detection limit, use of estimated values below the RL, and values that were close to the RL further limit the data used in the risk assessment. Use of estimated values tends to result in overestimation of actual concentrations and the use of values close to the RL could either over- or underestimate contaminant concentrations.

6.2 Exposure Assessment

Exposure assessment is the determination or estimation (qualitative or quantitative) of the magnitude, frequency, duration, and route of human exposure for the chemicals of potential concern that are present at, or may have migrated from, a site. The characterizations of the environs of CAFB and the surrounding area provided in Section 2.0 and the brief description of the exposure setting presented in this section were used to assess the potential exposures associated with Landfill No. 25.

6.2.1 Characterization of Potentially Exposed Populations

A detailed description of the environmental setting of CAFB is presented in Section 1.3 of this report. Section 1.3.1 describes the cultural geography, physiography, and the climate of east-central New Mexico. Regional geologic history and

present day features of the Southern High Plains, including soil types, are discussed in Section 1.3.1. Regional hydrogeology, including surface water and groundwater, are summarized in Section 1.3.1. Section 1.3.2 provides a detailed description of Landfill No. 25.

6.2.2 Population Demographics

CAFB had a resident population of approximately 3,800, including military personnel and their dependents, in 1990. Currently, there are 1,841 housing units at CAFB. Base housing is located in the northwest quarter of CAFB and north of CAFB, west of New Mexico Highway 277. Base-related employment at CAFB includes approximately 4,900 positions (Woodward-Clyde, 1992b). The region potentially affected by activities at CAFB includes Curry and Roosevelt counties. Together these counties comprise an area within a 30-mile radius of CAFB. The population in the two-county region was 59,873 in 1990 (USAF, 1992). The city of Clovis, New Mexico is located approximately seven miles to the east of CAFB. In 1990, the population of Clovis was 30,954 persons. Over 95% of military personnel currently living off-base reside in Clovis. The remaining 5% reside in Portales. Portales is located approximately 19 miles south of Clovis and had a population 10,690 in 1990.

6.2.3 Current and Future Land Use

Land use is primarily agricultural within Curry as well as Roosevelt County. As of 1992, total land area in Curry county was 897,000 acres with 837,200 designated as farm land. Lands surrounding CAFB are classified as irrigated farm land with principal crops including corn, grain, sorghum, wheat, barley, oats, alfalfa, cotton, and various vegetables. Peanuts are the primary commodity in Portales. Cattle ranching and dairy farming occur throughout Curry and Roosevelt counties. Due to the number of feed lots and processing plants in the area, Clovis is known as the "Cattle Capital of the Southwest". Roosevelt county has the largest dairy industry in New Mexico and a strong

beef cattle industry. Currently no land use or zoning controls restrict the type and amount of construction in the proximity of CAFB. The U.S. Air Force has designated Compatible Use Zones (CUZs) around CAFB and provides recommendations for compatible uses in areas subject to noise and accident hazards (Woodward-Clyde, 1992b). However, Air Installation Compatible Use Zone land use guidelines are not legal or regulatory requirements and, therefore, are not enforceable.

There are no plans for closure of CAFB in the foreseeable future. The use of CAFB as a military installation is highly specialized and land use cannot be significantly altered (i.e., converted to private commercial or residential use) without the approval of the U.S. Congress and the Secretary of Defense. For security and safety reasons, ingress and egress to CAFB is restricted.

6.2.4 Subpopulations of Potential Concern

Potentially sensitive members of the population that may be exposed to chemicals originating from Landfill No. 25 include: children; the elderly; and those with preexisting conditions that may be aggravated by exposure to chemicals of potential concern. Locations where sensitive members of the population might reside include hospitals, retirement/nursing homes, schools, nurseries, and day care centers. Medical services for CAFB personnel and their dependents are provided by two general hospitals in the surrounding communities and by CAFB hospital. The High Plains Hospital is located several miles east of CAFB, toward Clovis, New Mexico. On-base support facilities, including schools, hospitals, and day care centers are located primarily northwest of the airfield area upgradient and generally upwind of Landfill No. 25. While a dairy is located next to the landfill, the nearest commercial facilities, consisting of a convenience store (Allsup's) and a barber shop, are approximately 1.5 miles from the site. These facilities represent the general population and not sensitive subpopulations.

6.2.5 Conceptual Site Model

Based on available information, a conceptual site model was developed to provide an understanding of the sources of contaminants, potential migration pathways of contaminants, and potential receptors considering geologic and hydrologic information. The conceptual site model is presented schematically in Figure 6-1 and provides the basis for the human health and ecological risk assessment. The chemicals of potential concern identified for use in this risk assessment are presented in Table 6-2.

Currently, the population potentially exposed to contaminants originating from Landfill No. 25 includes on-base residents and workers, off-base residents and consumers of locally produced agricultural crops and beef and dairy products. Expansion of the existing munitions facility has been proposed and will require clearing of the rubble at the north end of Landfill No. 25 to accommodate new construction. Therefore, on-site land use is likely to change in the near future and necessitates assessment of a future construction worker scenario.

6.3 Identification of Exposure Pathways and Scenarios

Human exposure to the chemicals of potential concern were evaluated by performing the following tasks:

1. Identification of releases into various media;
2. Determination of fate and transport in release media;
3. Evaluation of exposure points and exposure routes;
4. Determination of exposure scenarios;
5. Quantification of estimated exposure concentrations; and
6. Estimation of chemical intakes for individual pathways.

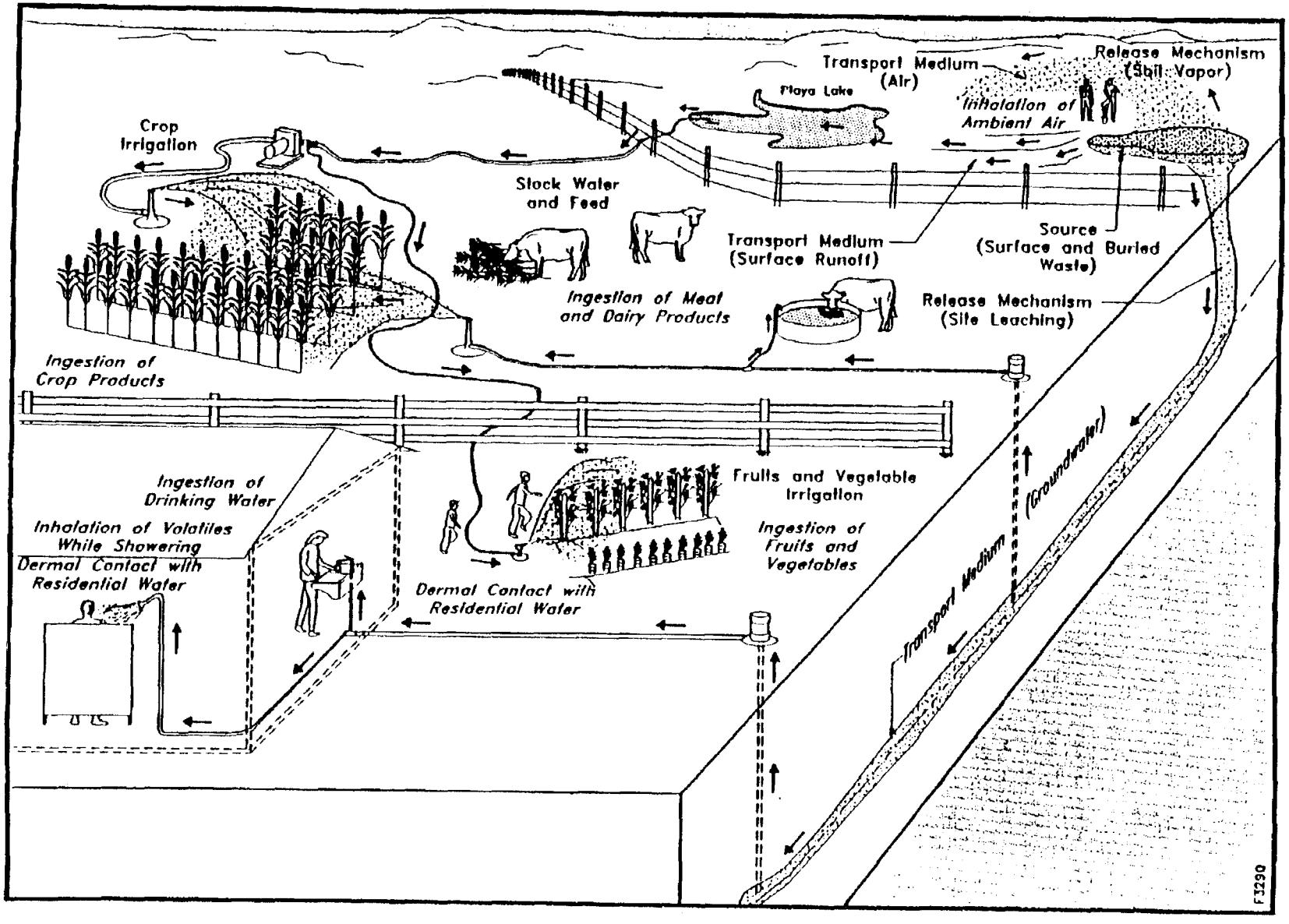

Figure 6-1. Conceptual Site Model Associated with Risks from Landfill No. 25, Cannon AFB, Clovis, New Mexico

The following subsections discuss the individual tasks used to evaluate human exposure for the chemicals of potential concern and the uncertainties associated with exposure assessment. Information about contaminant sources and receiving media at the site, the fate and transport of chemicals of concern, exposure points, and exposure routes are provided. Appendices J, K, L, and M present a detailed discussion of how estimated exposure concentrations were derived.

6.3.1 Task 1: Identification of Releases into Various Media

For the purpose of this risk assessment, the source of contamination is represented by the wastes that have been disposed of in Landfill No. 25 in the past, since no waste disposal in Landfill No. 25 is projected in the future. These wastes are the sole source of soil, and potential air, groundwater, and surface water contamination from the landfill. The potential releases to media from contaminants originating at Landfill No. 25 addressed in this risk assessment are those to 1) ambient air, 2) groundwater, and 3) surface water (Playa Lake). While the lower portion of the Ogallala formation is the primary regional aquifer, it is steadily declining at a rate of 2 feet per year due to high pumping rates. However, releases to the groundwater have been included even though the time required for the constituents to travel to the groundwater (173 years) is such that the Ogallala aquifer is unlikely to still be serving as a source of potable water for the area.

Results of chemical analyses of soil samples collected during the RFI indicated that a limited number of contaminants are present in the soil beneath Landfill No. 25 to a depth of 60 feet BNS. Section 4.0 presents and Section 5.0 summarizes the analytical data characterizing contamination at the site. Of the eight 60-foot soil borings taken, organic contaminants were found down to 60 feet on 10 occasions. Chemicals detected in soil samples that are above RLs are presented in Table 4-5. Selection of contaminants of potential concern is discussed in Section 6.1.

The primary source of contamination considered in this risk assessment is soil. While not analyzed during the site investigation, ambient air, groundwater, and surface water could potentially be contaminated with the chemicals of potential concern and may represent secondary sources of contamination. Therefore, contaminant concentrations were modeled to ambient air, surface water, and groundwater. Both primary and secondary sources of contamination are considered in this risk assessment.

6.3.1.1 Releases to Air

Volatilization of organic compounds from surface soil contamination, volatilization of organic compounds from buried wastes and wind entrainment of contaminated dust were considered in evaluating potential releases to air from Landfill No. 25. Air impacts were estimated using predictive equations recommended by the USEPA. Volatile compounds entrained in the soil may volatilize and eventually disperse into the atmosphere above the ground surface by simple diffusion. The chemicals detected at the site during this investigation with the potential to volatilize were benzene, diesel fuel, hydrocarbons, methylene chloride, and toluene. All of these compounds were detected in surficial soils. However, all of the benzene and diesel results were below the RL or were less than five times the RL. In addition, all of the diesel hits are believed to be due to laboratory contamination. The majority of the surficial hydrocarbon hits were less than five times the RL and the majority of the surficial toluene was detected below the RL or at less than five times the RL (refer to Sections 4.4.4 and 4.4.6 for further discussion on the source of hydrocarbons).

There is a potential for volatile chemicals to migrate through the soil pores and eventually volatilize to the atmosphere. Release of volatile organics from surface and subsurface soils is considered to occur for purposes of this risk assessment. Metals were also detected in subsurface and surficial soils. Non-volatile chemicals and metals can potentially enter the atmosphere as a result of wind entrainment of contaminated surface soil. Waste must be present in surface soil and uncovered by impervious

materials or vegetation to be subject to fugitive dust generation. The generation of fugitive emissions in the form of dust/particulates may be lessened by the fact that Landfill No. 25 is partially vegetated. However, because of wind conditions in the area, fugitive dust generation was evaluated in order to assume a worst-case scenario.

Organic materials in the waste are subject to microbial decomposition and may generate a variety of gases that may vent to the atmosphere. Low soil moisture content at CAFB inhibits waste decomposition resulting in a decreased rate of gas formation. Soil gases generated at Landfill No. 25 were considered to be negligible and were not evaluated for human health risks because of the arid climate in the area.

The Playa Lake, southeast of Landfill No. 25, is recharged primarily by treated effluent from the sewage lagoons and by storm water runoff from the site. Without recharge, playa lakes persist for only a few days or weeks. Water is lost from playa lakes by infiltration to the soil and by evaporation (Radian, 1986). Volatilization of organic compounds from the surface water is possible. Several contaminants were detected at or near the surface soil at Landfill No. 25. However, surface water runoff modeling presented in Appendix L indicates that the concentration of contaminants resulting from Landfill No. 25 in the Playa Lake are low. Therefore, volatilization of organics from the Playa Lake is not expected to be significant and this scenario was not evaluated in the risk assessment.

6.3.1.2 Releases to Groundwater

A secondary release mechanism from the soil includes the potential for leaching of chemicals into groundwater. Leachate is composed of liquid present in the waste, liquid entering the unit from precipitation, and chemical compounds that are dissolved or suspended in this liquid. Many factors affect the potential for contaminant migration including: 1) chemical characteristics; 2) waste management practices; and 3) soil characteristics. The potential for production of leachate to contaminate groundwater

is generally considered to be low because of the limited rainfall and high evaporation rate in this arid environment. However, the detection of a limited number of contaminants (primarily metals) at depths of 60 feet may indicate that contaminants from the site are migrating.

Groundwater flow and contaminant transport were modeled using analytical solutions for estimating the time of travel of soil moisture through unsaturated soil from the bottom of the landfill to the Ogallala aquifer, assuming steady-state conditions in the soil column. Appendix K contains a discussion of the methodology used to calculate groundwater concentrations.

6.3.1.3 Releases to Surface Water

One of the most prominent geomorphic features in the vicinity of CAFB are blowouts. Blowouts are broad shallow depressions which form as a result of soil erosion by wind. Runoff collects in blowouts to form ephemeral playa lakes during periods of rainfall. Generally, drainage in the area of Landfill No. 25 is to the southeast toward Playa Lake (see Figure 1-5). Therefore, direct release of surface contaminants detected at the landfill to surface water may occur at the site.

6.3.2 Task 2: Determination of Fate and Transport in Release Media

The contaminants detected at Landfill No. 25 may be transported from one medium to another by processes of solubilization, adsorption, bioaccumulation, or volatilization. Primary transport media for chemical substances in the environment include the air, groundwater, surface water, and soil. The potentially significant contaminant transport mechanisms considered for this risk assessment include:

- Emissions to ambient air;
- Migration of contaminated groundwater;

- Direct release of contaminants in soil to surface water; and
- Uptake by plants and animals.

6.3.2.1 Release to and Transport in Ambient Air

Ambient air monitoring has not been conducted at Landfill No. 25 to determine the contaminants and/or contaminant concentrations in the air. Several of the contaminants detected in soils at Landfill No. 25 have the potential for volatilization from the soil. Non-volatile organics and metals can enter the atmosphere via wind entrainment of contaminated surface soil. Small particles which carry pesticides or their degradation products may be distributed through the air. Wind entrainment is likely to be a significant transport mechanism at the site because of regional gusty winds and the semi-arid climate. Potential contamination of the air at the perimeter of Landfill No. 25 and at strategically placed receptors was estimated using conservative assumptions such as: 1) no plume rise; 2) concentration over a reduced area of the landfill; and 3) uniform distribution of subsurface contamination.

6.3.2.2 Release to and Transport in Groundwater

The detection of metals down to 60 feet may indicate that contaminants have migrated downward and suggests limited potential for leaching into the underlying Ogallala formation, which is 270 feet below ground level (BGL). However, even under the worst-case scenario, it would take 173 years for these contaminants to reach the aquifer. Furthermore, these metals are known to exist in the region at moderately high levels. Although the lower portion of the Ogallala formation is the primary regional aquifer for both potable and irrigation water, it is declining at a rate of 2 feet per year due to high pumping rates. This subsidence will likely preclude use of the aquifer as a potable water source 173 years in the future. However, in order to assess a worst-case scenario, and further evaluate the basis for a no-action decision, future (potential) groundwater contamination was modeled.

The majority of the contaminants detected at Landfill No. 25 were pesticides, polyaromatic hydrocarbons (PAHs), and metals, all of which generally have low water solubilities and should, therefore, be relatively immobile. However, any leachate reaching the aquifer would mix with the groundwater and flow laterally, generally in the direction of groundwater flow. Groundwater flows to the southeast with a regional gradient of about 13 feet/mile. Some chemicals can float on top of groundwater in a separate immiscible phase because of differing physical and chemical properties. Other chemicals may dissolve and move with the groundwater, or sink to the bottom of the aquifer and move more slowly.

6.3.2.3 Discharge to and Transport in Surface Water

Most precipitation that falls in the Clovis area is lost to evapotranspiration and shallow infiltration before runoff occurs. Generally, drainage in the Landfill No. 25 area is to the southeast, toward the Playa Lake which was chosen as the closest surface water receptor. Methylene chloride and toluene are readily leached from soils with low organic content and are moderately soluble in water. However, as discussed previously, the majority of the contaminants detected at Landfill No. 25 were pesticides, PAHs, and metals which generally are only slightly soluble in water. The transport of these compounds (pesticides, PAHs, and metals) in runoff is primarily caused by transport of particulates to which these compounds are bound. Because these compounds are bound strongly to soil, they are likely to be subject to sedimentation. Metals generally are not very mobile in most soil systems although the rate of transportation is dependent upon characteristics of the soil (pH, organic carbon content, oxidation potential, etc.). The lack of site-specific data required the use of estimated values from the literature to determine the leachability of metals from the soils at CAFB. Erosion, which is unlikely because of the arid climate, would be required for transport of metals to the Playa Lake. However, in order to evaluate the potential for human health risks associated with runoff from the site to the Playa Lake, contaminant migration to a surface water receptor was

modeled (see Appendix L for details of the calculations). The Playa Lake does not discharge to any waterway, but is used to irrigate nearby crops by a local farmer.

6.3.2.4 Uptake by Plants

Land use in the area surrounding CAFB is primarily agricultural. During the site visit, agricultural fields were noted to the east and south of Landfill No. 25. The crops grown on the fields vary depending on the season and the market price. Wheat, used for human consumption, is the primary crop grown on the fields near Landfill No. 25. However, alfalfa, corn, and milo are also grown on these fields and are used as cattle feed (Base Natural Resources Environmental Group, 1992). Agricultural crops are subject to accumulation of contaminants via root uptake of contaminants present in the soil or water used for irrigation.

The effluent to the Playa Lake located southeast of Landfill No. 25 and groundwater is used by a local farmer for irrigation purposes. Therefore, plants may be potentially exposed to contaminants originating from Landfill No. 25 and it is important to examine the possible accumulation of contaminants in crops. Many of the chemicals detected at Landfill No. 25 are lipophilic and some have long half lives. As a result, they tend to bioaccumulate in the food chain. While the groundwater modeling (Appendix K) indicates that these chemicals are not predicted to enter the groundwater for 173 years, this pathway was assessed in order to assume a worst-case scenario. In addition, irrigation using Playa Lake water was assessed using predicted concentrations in the Playa Lake.

6.3.2.5 Uptake by Livestock

There is a dairy located within a mile to the east of Landfill No. 25 and cattle were seen at the perimeter of CAFB, east of the site during the site visit. Livestock, including beef and dairy cattle, may be subject to accumulation of

contaminants originating from Landfill No. 25 via ingestion of contaminants in feed and water. Several crops that are typically used for livestock feed are grown nearby. As cattle ingest contaminated feed, the contaminants can be absorbed by the gastrointestinal tract. The more lipophilic compounds may accumulate in the milk and edible meat following gastrointestinal absorption, providing a mechanism for human exposure. Locally raised beef and dairy cattle are sustained primarily on locally grown (approximately 80%) agricultural products (New Mexico Agricultural Extension Office, 1992). To evaluate a worst-case scenario, 100% of the feed for beef cattle and dairy cows was assumed to come from crops grown near Landfill No. 25.

6.3.3 Task 3: Evaluation of Exposure Points and Exposure Routes

Normally, potential pathways are segregated into those that currently exist and those that may exist in the future. Current potential exposure pathways are those that may exist as a result of the current extent of contamination combined with existing land use and activity patterns. Future exposure pathways are considered to be those which may exist at some time in the future as a result of the current extent of contamination or projected future contaminant concentrations combined with future land use and activity patterns. Human exposure to contaminants originating at Landfill No. 25 could potentially occur on-site, in areas adjacent to the landfill, and at locations distant from the site assuming significant groundwater contamination. Access to the site is limited and currently there are no ongoing invasive activities occurring. Therefore, direct human contact is currently considered to be unlikely. However, this assessment is being conducted partially in response to a proposed expansion of the munitions facility onto the northern portion of the site. Inhalation of airborne contaminants as well as incidental ingestion of and dermal contact with soil were assessed as potential sources of exposure to contaminants at Landfill No. 25 for the future construction scenario, since land use at the site is likely to change in the future. Use of potentially contaminated surface water from the Playa Lake and groundwater for irrigation of agricultural crops consumed by humans and for feed crops consumed by livestock may serve as indirect

pathways of human exposure to contaminants from the landfill. Volatilization of volatile chemicals and fugitive dust generation at the site were also assessed as potential sources of exposure to contaminants originating at Landfill No. 25. Potential site releases are expected to be low-level and relatively continuous in nature. Short-term high level releases are considered to be unlikely and were not considered in this risk assessment.

6.3.3.1 Receptors

Potential receptors considered in this risk assessment are: 1) animal and plant receptors; 2) people who consume commercially produced agricultural crops grown at the perimeter of the site; 3) people who consume meat and/or milk from livestock fed on crops grown at the site perimeter and; 4) CAFB personnel, on-site workers, and nearby residents exposed to fugitive dust and volatilized chemicals from the site. A groundwater pathway was not considered in the current residential exposure scenario, because migration of contaminants from the landfill to the water table is estimated to require 173 years. The groundwater pathway is considered in the future residential scenario. Future land uses in the vicinity of CAFB will not significantly alter the exposure points and exposure routes. The size of the potentially exposed populations could change in the future; however, it would likely increase for some exposure routes and decrease for others.

6.3.3.2 Exposure Pathways

Potential exposure pathways associated with identified receptors were evaluated in order to determine whether they were complete and significant. The route can include media other than the source and the receptor must engage in activity that will cause the exposure to occur. Figure 6-2 depicts potential pathways for contaminants originating at Landfill No. 25 to move from the point of release to the point of human exposure. Pathways that are not complete have been crossed out and numbered to correspond with explanatory footnotes. Pathways that are completed but judged

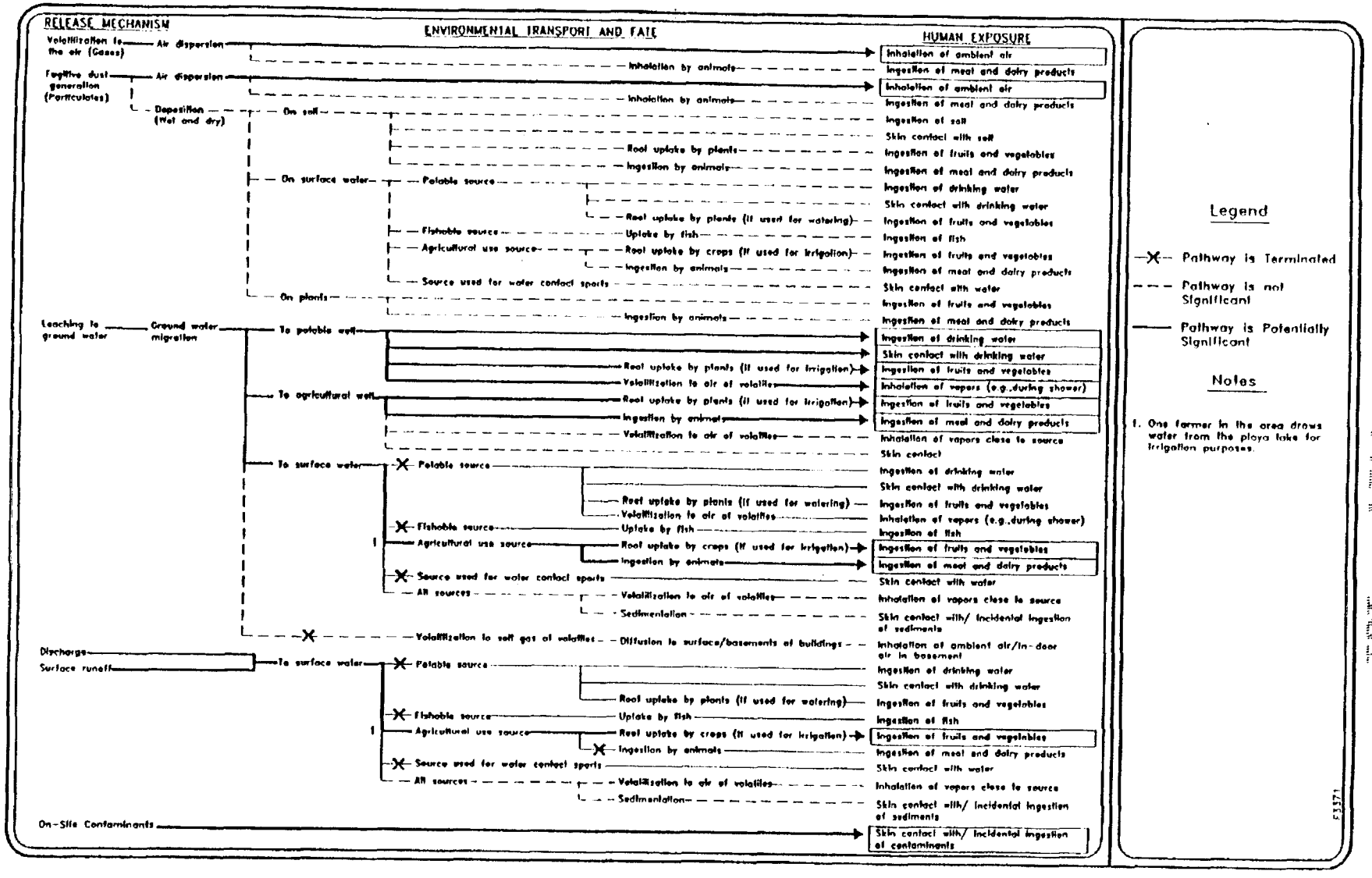

Figure 6-2. Environmental Fate and Transport for Landfill No. 25, Cannon AFB, Clovis, New Mexico

insignificant are indicated with dashed-lines. Potentially significant pathways that exist at the site are indicated with a solid bold line and include:

1. Ingestion of groundwater: leaching to groundwater; groundwater migration to groundwater well; ingestion of groundwater.

2. Dermal contact with groundwater: leaching to groundwater; groundwater migration to groundwater well; dermal contact while showering.

3. Inhalation of vapor phase chemicals from groundwater: leaching to groundwater; groundwater migration to groundwater well; inhalation of vaporized chemicals while showering.

4. Ingestion of agricultural crops: migration to surface or groundwater; irrigation of crops with surface or groundwater; uptake by plants; ingestion of plants by humans.

5. Ingestion of milk and meat: consumption of contaminated crops by cattle; transfer of contaminants to beef or milk; ingestion of beef or milk by humans.

6. Inhalation of vapor phase chemicals at the site: volatilization from soil; inhalation of volatilized chemicals in ambient air.

7. Inhalation of fugitive dust generated at the site: entrainment of contaminants in soil; dispersion into the atmosphere above the site; inhalation of fugitive dust.

8. Ingestion of/dermal contact with soil: leaching to soil; ingestion of and/or skin contact with soil.

These eight pathways were quantified in this risk assessment.

Pathways that may be complete but are likely to pose insignificant human health risks include: 1) inhalation of vapors volatilized from the Playa Lake; and 2) dermal contact with surface water drawn from the Playa Lake for agricultural purposes. The contribution of these exposure pathways is likely to be minor by comparison to exposure following ingestion of groundwater, agricultural crops, and beef or milk.

Potentially exposed populations, exposure media, exposure points and exposure routes for complete pathways are identified in Table 6-4. Also noted in this table are the decisions to select pathways for quantitative evaluation and the justification for including or excluding each pathway in the risk assessment.

6.3.4 Task 4: Determination of Exposure Scenarios

CAFB personnel, on-site workers, and individuals living in areas downgradient and down wind from Landfill No. 25 represent the significant populations potentially exposed to chemicals originating from the site that may leach into groundwater, migrate to the Playa Lake, or be emitted into the atmosphere above the site.

For chemicals released to the air, the highest concentrations are typically found in the direction that is predominantly downwind of the site. It is anticipated that inhalation exposure will primarily occur on-site and downwind from the site. Therefore, on-Base residents (located northwest of the site) are not likely to be significantly exposed to airborne contaminants via dispersion because prevailing winds in the area are to the south. In addition, the annual maximum air concentrations were predicted to exist at the landfill perimeter, CAFB perimeter (east of the site), and at the construction site. The annual maximum concentration predicted at CAFB perimeter (east of the site) was used for all residential scenarios and represents a worst-case scenario. Off-base residents were assumed to be exposed chronically to airborne contaminants potentially originating from Landfill No. 25. CAFB personnel and on-site workers working at or near Landfill No. 25 may be exposed chronically or subchronically to air emissions originating from the site depending on length of employment (tour of duty).

Table 6-4

Potentially Complete Exposure Pathways at Landfill No. 25 CAFB, Clovis, New Mexico

Exposure Route, Medium, and Exposure Point	Potentially Exposed Population	Pathway Selected for Evaluation	Reason for Selection or Exclusion
Inhalation of chemicals in ambient air at or nearby site	Base personnel, nearby residents, on-site workers	Yes	Emissions of volatile chemicals can result in inhalation exposure of Base personnel, on-site workers and nearby residents.
Inhalation of fugitive dust in ambient air	Base personnel, residents living nearby, and on-site workers	Yes	Wind entrainment of contaminated soils can result in inhalation exposure of Base personnel, on-site workers and nearby residents.
Dermal contact with contaminated soil	Future on-site construction workers	Yes	There are currently no invasive activities at the site; however, construction may occur on-site in the future, which will include excavation of soils.
Ingestion of contaminated soil	Future on-site construction workers	Yes	Incidental ingestion of soil could occur during construction activities.
Ingestion of meat and dairy products from cattle exposed to contaminants from Playa Lake or groundwater (stock water, irrigation of pasture/feed crops)	Consumers of locally produced meat and dairy products and nearby farm families	Yes	A dairy exists to the northeast of Landfill No. 25 and several stockyards are located in the vicinity of Cannon AFB.
Dermal contact with chemicals in water during agricultural use	Off-Base farmer drawing water from Playa Lake potentially contaminated with discharge from site and farmers using potentially contaminated groundwater for agricultural purposes	No	Contribution of dermal contact with water is likely to be minor by comparison to the contribution of ingestion of agricultural products and livestock.
Dermal contact with chemicals in groundwater during home use	Off-Base residents (On-Base residents are upgradient)	Yes	This risk assessment assumes use of potentially contaminated groundwater for bathing/showering and other domestic uses, during which dermal contact occurs.

Table 6-4

(Continued)

Exposure Route, Medium, and Exposure Point	Potentially Exposed Population	Pathway Selected for Evaluation	Reason for Selection or Exclusion
Inhalation of chemicals volatilized from groundwater during home use (while showering)	Off-Base residents (On-Base residents are upgradient)	Yes	This risk assessment assumes use of potentially contaminated groundwater for bathing/showering and other uses during which inhalation of vapor may occur.
Ingestion of contaminated groundwater migrating from the site to potable water wells downgradient from site	Off-Base residents living downgradient from site (on-Base residents are upgradient)	Yes	Although groundwater modeling indicates that leaching of contaminants into the water table will only occur far in the future, residents connected to the municipal water supply may be exposed in the future.
Ingestion of fruits and vegetables irrigated with surface water drawn from Playa Lake currently impacted by runoff from site or potentially contaminated groundwater in the future	Consumers of locally grown agricultural crops and nearby farm families	Yes	One farmer draws water from the potentially contaminated Playa Lake for agricultural purposes. There are agricultural wells in the vicinity of Landfill No. 25 that may potentially be contaminated with groundwater migrating from the site.

If contaminants originating from Landfill No. 25 reach the groundwater, direct human exposure to contaminants could occur in homes where groundwater is used as a potable source or for showering, etc. Human exposure could also occur from the consumption of beef and dairy products from farm animals exposed to potentially contaminated groundwater and feed crops, as well as from human consumption of contaminated agricultural products. Residents living adjacent to the site, who grow and consume agricultural crops grown at the site perimeter as well as beef and dairy products from livestock fed with these crops, represent a worst-case scenario. These individuals may be subject to chronic (long-term) exposure to site-related contaminants. Individuals who consume commercially produced crops grown at the site perimeter and commercially produced beef and milk from livestock sustained on crops grown at the site perimeter were not assessed because any contaminated commercial products would be widely distributed, thus reducing the potential for individual exposure by comparison to the farm family scenario.

Chronic exposure scenarios are based on current and future predicted lifetime (70 years) exposures. Subchronic exposure scenarios are based on 2-year exposure durations. These scenarios assume exposure to contaminant levels predicted by modeled results at the nearest receptor. The scenarios that were evaluated in the risk assessment are:

<u>Lifetime, Off-base Residential (current and future)</u>

1) adult, average
2) adult, reasonable maximum
3) child, average
4) child, reasonable maximum

Occupational (current and future)

1) adult, average
2) adult, reasonable maximum

Chronic exposure to adults and children was evaluated for: 1) an average case, using 50th percentile values for exposure parameters (i.e., exposure duration and frequency) when available and appropriate; and 2) a reasonable maximum case, using 90th or 95th percentile values for exposure parameters when available and appropriate. Risk estimates for noncarcinogenic effects were predicted for adults and children. Risk estimates for carcinogenic effects were predicted based on an exposure duration of 70 years.

6.3.5 Task 5: Quantification of Estimated Exposure Concentrations

This section describes the methodology used to estimate the magnitude, frequency, and duration of exposures for the populations and exposure pathways selected for quantitative evaluation. The various exposure media quantified for this risk assessment included ambient air, indoor air from residential water use, groundwater, surface water, fruits, vegetables, meat and dairy products. The exposure concentration estimates in the various exposure media and the methodologies used to obtain these estimates are discussed. Table 6-5 summarizes the average measured soil concentrations used to estimate exposure concentrations from the various media. Tables 6-6, 6-7, and 6-8 summarize the exposure concentration estimates for all exposure media (i.e.,

Table 6-5

Average Measured Soil Concentrations From Soil Borings at Landfill No. 25, CAFB, Clovis, New Mexico

Chemicals	Surface Soil Concentration (mg/kg)	Subsurface Soil Concentration (mg/kg)
Organics		
β-BHC	1.51E-03	5.23E-04
Benzene	3.16E-03	1.22E-03
Benzo(a)pyrene	1.60E-04	6.90E-05
Benzo(b)fluoranthene	1.80E-04	1.80E-04
Benzo(k)fluoranthene	1.70E-04	1.80E-04
4,4'-DDD	3.16E-03	2.83E-04
4,4'-DDE	1.84E-02	9.10E-04
4,4'-DDT	1.56E-02	1.23E-03
Diesel Fuel	8.45E+01	1.00E+02
Fluoranthene	1.70E-04	1.79E-04
Heptachlor	1.78E-03	2.40E-04
Heptachlor epoxide	3.20E-04	3.05E-04
Hydrocarbons	2.92E+01	8.73E+02
MCPP	ND	3.52E+00
Methylene chloride	3.36E-03	2.06E-02
Pyrene	1.60E-04	1.73E-04
Toluene	3.30E-02	2.65E-03
Inorganics		
Aluminum	1.20E+04	8.40E+03
Arsenic	1.15E+00	2.55E+00
Manganese	1.81E+02	7.47E+01
Thallium	1.20E-01	1.06E-01
Vanadium	2.10E+01	1.56E+01
Zinc	3.01E+01	1.41E+01

ND = Not detected

Table 6-6

Estimated Exposure Concentrations Associated with Landfill No. 25 CAFB, Clovis, New Mexico

Chemical	Ambient Air µg/m³			Indoor Air from Showering mg/m³		Groundwater mg/L		Surface Water mg/L	
	Residential	Construction	On-Site Worker	Average	Reasonable Maximum	Average	Reasonable Maximum	Average	Reasonable Maximum
Organics									
β-BHC	3.77E-08	1.07E-06	4.64E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.17E-09	1.20E-08
Benzene	1.26E-03	7.52E-03	1.56E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.98E-07	6.68E-07
Benzo(a)pyrene	9.22E-06	2.63E-04	1.18E-05	4.00E-10	8.00E-10	1.09E-08	1.09E-08	4.72E-09	7.91E-09
Benzo(b)fluoranthene	9.59E-06	2.73E-04	1.18E-05	9.09E-35	1.64E-34	2.31E-33	2.31E-33	1.13E-08	1.90E-08
Benzo(k)fluoranthene	9.47E-06	2.70E-04	1.16E-05	7.12E-87	1.28E-86	1.81E-85	1.81E-85	1.07E-08	1.80E-08
4,4'-DDD	5.97E-08	1.70E-06	7.20E-07	1.09E-21	1.96E-21	2.76E-20	2.76E-20	1.99E-09	3.34E-09
4,4'-DDE	3.75E-07	1.07E-06	4.60E-06	5.39E-21	9.73E-21	2.87E-19	1.37E-19	1.16E-08	1.94E-08
4,4'-DDT	3.17E-07	9.02E-06	3.90E-06	7.16E-18	1.29E-17	1.82E-16	1.82E-16	9.81E-09	1.65E-08
Diesel Fuel	2.14E-02	1.27E-01	2.64E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.91E-03	8.24E-03
Fluoranthene	9.40E-06	2.67E-04	1.16E-04	1.98E-26	3.58E-26	5.04E-25	5.04E-25	3.80E-08	6.37E-08
Heptachlor	3.61E-08	1.03E-06	4.40E-07	1.19E-21	2.16E-21	3.04E-20	3.04E-20	6.88E-08	1.15E-08
Heptachlor epoxide	4.28E-08	1.22E-06	5.20E-07	1.36E-21	2.46E-21	3.47E-20	3.47E-20	1.24E-09	2.08E-09
Hydrocarbons	1.78E+02	1.06E+03	2.19E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.08E-02	8.52E-02
MCPP	6.93E-05	1.97E-03	8.82E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Methylene chloride	1.50E-02	8.89E-02	1.90E-01	6.97E-41	1.26E-40	1.77E-39	1.77E-39	1.21E-06	2.01E-06
Pyrene	9.27E-06	2.64E-04	1.17E-04	3.19E-42	7.38E-42	1.04E-40	1.04E-40	3.66E-08	6.14E-08
Toluene	1.67E-03	9.93E-03	2.13E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.00E-06	3.36E-06

Table 6-6

(Continued)

Chemical	Ambient Air µg/m³			Indoor Air from Showering mg/m³		Groundwater mg/L		Surface Water mg/L	
	Residential	Construction	On-Site Worker	Average	Reasonable Maximum	Average	Reasonable Maximum	Average	Reasonable Maximum
Inorganics									
Aluminum	2.45E-01	6.97E+00	3.00E+00	0.00E+00	0.00E+00	1.36E+02	1.36E+02	7.00E-01	1.17E+00
Arsenic	5.71E-05	1.29E-03	7.27E-04	0.00E+00	0.00E+00	2.34E-03	2.34E-03	2.11E-05	3.55E-05
Manganese	3.67E-03	8.27E-02	4.68E-02	0.00E+00	0.00E+00	9.14E-03	9.14E-03	1.14E-05	1.91E-05
Thallium	2.44E-06	6.95E-05	3.00E-05	0.00E+00	0.00E+00	1.65E-03	1.65E-03	6.98E-06	1.17E-05
Vanadium	4.07E-04	1.16E-02	5.00E-03	0.00E+00	0.00E+00	2.47E-01	2.47E-01	1.22E-03	2.05E-03
Zinc	6.12E-04	1.38E-02	7.12E-03	0.00E+00	0.00E+00	9.90E-03	9.90E-03	1.75E-03	2.94E-03

Table 6-7

Estimated Present Exposure Concentrations in Foods Associated with Contamination Contributed by Landfill No. 25, CAFB, Clovis, New Mexico

Chemical	Fruits mg/kg		Vegetables mg/kg		Meat mg/kg		Dairy mg/kg	
	Average	Reasonable Maximum	Average	Reasonable Maximum	Average	Reasonable Maximum	Average	Reasonable Maximum
Organics								
β-BHC	8.94E-12	1.50E-11	8.94E-12	1.50E-11	3.16E-14	5.29E-14	1.04E-14	2.34E-14
Benzene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.99E-14	3.34E-14	6.29E-15	1.06E-14
Benzo(a)pyrene	1.93E-13	3.23E-13	1.93E-13	3.23E-13	4.71E-12	7.89E-12	1.52E-12	2.55E-12
Benzo(b)fluoranthene	3.64E-13	6.12E-13	3.64E-13	6.12E-13	1.70E-11	2.85E-11	5.46E-12	9.17E-12
Benzo(k)fluoranthene	2.46E-13	4.15E-13	2.46E-13	4.15E-13	2.85E-11	4.79E-11	9.10E-12	1.53E-11
4,4'-DDD	1.38E-13	2.32E-13	1.38E-13	2.32E-13	8.02E-13	1.35E-12	2.63E-13	4.41E-13
4,4'-DDE	1.25E-12	2.09E-12	1.25E-12	2.09E-12	2.23E-12	3.73E-12	7.44E-13	1.24E-12
4,4'-DDT	4.34E-13	7.31E-13	4.34E-13	7.31E-13	8.53E-12	1.43E-11	2.76E-12	4.65E-12
Diesel Fuel	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Fluoranthene	1.17E-11	1.96E-11	1.17E-11	1.96E-11	1.31E-12	2.19E-12	4.72E-13	7.91E-13
Heptachlor	1.03E-12	1.73E-12	1.03E-12	1.73E-12	7.60E-13	1.27E-12	2.59E-13	4.32E-13
Heptachlor epoxide	1.96E-13	3.30E-13	1.96E-13	3.30E-13	1.25E-13	2.10E-13	4.29E-14	7.20E-14
Hydrocarbons	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MCPP	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Methylene chloride	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.88E-15	1.49E-14	2.80E-14	4.69E-15
Pyrene	7.78E-12	1.31E-11	7.78E-12	1.31E-11	3.02E-16	5.06E-16	7.98E-13	1.34E-12
Toluene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.48E-14	2.49E-14	1.45E-13	2.43E-13

Table 6-7

(Continued)

Chemical	Fruits mg/kg		Vegetables mg/kg		Meat mg/kg		Dairy mg/kg	
	Average	Reasonable Maximum	Average	Reasonable Maximum	Average	Reasonable Maximum	Average	Reasonable Maximum
Inorganics								
Aluminum	2.46E-06	4.12E-06	1.43E-04	2.53E-05	1.57E-05	2.62E-05	2.12E-06	3.54E-06
Arsenic	6.85E-10	1.15E-09	4.57E-09	7.69E-09	6.96E-10	1.17E-09	2.31E-11	3.88E-11
Manganese	5.17E-09	5.17E-09	1.54E-08	2.58E-08	1.17E-10	1.96E-10	1.45E-10	2.41E-08
Thallium	1.51E-11	2.53E-11	1.51E-10	2.53E-10	5.22E-14	8.76E-14	2.11E-10	3.54E-10
Vanadium	1.98E-08	3.33E-08	3.63E-08	6.10E-08	9.17E-12	1.54E-11	3.72E-08	6.25E-08
Zinc	8.53E-06	1.43E-05	3.13E-06	5.25E-06	2.55E-11	4.28E-11	7.59E-07	1.27E-06

Table 6-8

Estimated Future Exposure Concentrations in Foods Associated with Contamination Contributed by Landfill No. 25, CAFB, Clovis, New Mexico

Chemical	Fruits mg/kg		Vegetables mg/kg		Meat mg/kg		Dairy mg/kg	
	Average	Reasonable Maximum	Average	Reasonable Maximum	Average	Reasonable Maximum	Average	Reasonable Maximum
Organics								
β-BHC	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Benzene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Benzo(a)pyrene	4.45E-13	4.45E-13	4.45E-13	4.45E-13	7.21E-08	7.21E-08	2.28E-08	2.28E-08
Benzo(b)fluoranthene	7.46E-38	7.46E-38	7.46E-38	7.46E-38	2.31E-32	2.31E-32	7.31E-33	7.31E-33
Benzo(k)fluoranthene	4.17E-90	4.17E-09	4.17E-09	4.17E-09	3.22E-84	3.22E-84	1.02E-84	1.02E-84
4,4'-DDD	1.92E-24	1.92E-24	1.92E-24	1.92E-24	7.26E-20	7.26E-20	2.30E-20	2.30E-20
4,4'-DDE	1.48E-23	1.48E-23	1.48E-23	1.48E-23	1.69E-19	1.69E-19	5.33E-20	5.33E-20
4,4'-DDT	8.07E-21	8.07E-21	8.07E-21	8.07E-21	1.05E-15	1.05E-15	3.32E-16	3.32E-16
Diesel Fuel	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Fluoranthene	1.55E-28	1.55E-28	1.55E-28	1.55E-28	1.83E-03	1.83E-03	5.77E-04	5.77E-04
Heptachlor	4.57E-24	4.57E-24	4.57E-24	4.57E-24	3.36E-24	3.36E-24	1.14E-24	1.14E-24
Heptachlor epoxide	5.50E-24	5.50E-24	5.50E-24	5.50E-24	3.51E-24	3.51E-24	1.20E-24	1.20E-24
Hydrocarbons	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MCPP	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Methylene chloride	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.31E-47	1.31E-47	4.13E-48	4.13E-48

Table 6-8

(Continued)

Chemical	Fruits mg/kg		Vegetables mg/kg		Meat mg/kg		Dairy mg/kg	
	Average	Reasonable Maximum	Average	Reasonable Maximum	Average	Reasonable Maximum	Average	Reasonable Maximum
Pyrene	2.21E-44	2.21E-44	2.21E-44	2.21E-44	3.95E-41	3.95E-41	1.25E-41	1.25E-41
Toulene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Inorganics								
Aluminum	4.79E-03	4.79E-03	2.94E-02	2.94E-02	2.04+02	2.04+02	2.72+01	2.72+01
Arsenic	1.78E-08	1.78E-08	1.10E-07	1.10E-07	1.01E-03	1.01E-03	3.04E-05	3.04E-05
Manganese	2.47E-06	2.47E-06	1.24E-05	1.24E-05	9.97E-06	9.97E-06	8.76E-06	8.76E-06
Thallium	2.38E-12	2.38E-12	2.38E-11	2.38E-11	9.86E-07	9.86E-07	4.99E-08	4.99E-08
Vanadium	4.01E-09	4.01E-09	7.35E-09	7.35E-09	9.26E-06	9.26E-06	7.53E-03	7.53E-03
Zinc	4.82E-05	4.82E-05	1.77E-05	1.77E-05	2.88E-05	2.88E-05	4.29E-06	4.29E-06

groundwater, shower vapors, surface water, meat, dairy, fruits, vegetables). In addition, the exposure assumptions and algorithms used to calculate human intake are briefly described in this section and are presented in detail in Appendix M.

6.3.5.1 Ambient Air

Estimated emission rates of chemical compounds derived from volatilization and wind entrainment of contaminated dust from Landfill No. 25 were entered into the USEPA approved Industrial Source Complex Short-Term (ISCST2) dispersion model to estimate worst-case maximum short-term (hourly) and average annual chemical concentrations in the atmosphere at the periphery of the landfill and at a location representing a hypothetical maximum exposed off-base individual. The location representing the maximum exposed off-base individual is approximately 1250 feet to the northeast of the landfill. The distance to the nearest residence is estimated to be approximately 3,500 feet. However, land within two miles of the site is not zoned and commercial land use (dairy and agricultural farming) occurs within 1000 feet of the site.

Emission rates of chemical compounds resulting from proposed construction activity at the north end of the landfill were evaluated independently to predict the average annual chemical concentrations in the atmosphere at the construction site. An area of approximately 17,000 square feet (Base Natural Resources Environmental Group, 1993) is proposed for construction purposes. Construction activity is a source of dust emissions and may have a temporary impact on construction workers in the area. The quantity of dust emissions from construction operation is directly proportional to the area of land being worked, the level of construction activity, the silt content of the soil, and is inversely proportional to the square of the soil moisture. The AP-42 emission factor for construction operations presented in Appendix J was used to calculate the total dust emissions at the construction site. The "box model" approach was used to predict concentrations at the construction site because the ISCST2 dispersion model does not compute a concentration for any receptor physically located on an area

source being modeled. Appendix J presents a detailed discussion of the calculations and air modeling results.

The estimated average and reasonable maximum concentrations in air are presented in Table 6-6. The predicted concentrations were then used to estimate health risks to the exposed populations. The maximum annual average contaminant concentrations predicted at the site (landfill) perimeter and CAFB perimeter were used to assess risks associated with the present occupational and present residential inhalation exposure scenarios, respectively. Predicted concentrations at the construction site were used to estimate health risks to construction workers.

The area source algorithm was used to estimate emission rates. The area source algorithm is based on the equation for a finite crosswind line source and requires that each individual area source have the same north-south and east-west dimensions. Since the landfill is irregularly shaped, it was modeled as several area sources by dividing the area into multiple squares that approximate the geometry of the land. The concentrations at the construction site were calculated by dividing the mass emission rate by the air flow through the cross section of the source. The flow was the product of the length of the area source, height of the air column above the source through which the pollutant disperses, and the average wind speed. A height of 6 feet, representative of an average man, was assumed. Contaminants with a Henry's Law constant of 1×10^5 atm-m^3/mole or greater and molecular weight less than 200 g/mole were considered volatile. These compounds were evaluated for various volatilization emission mechanisms. The remaining compounds were considered to be non-volatile and were evaluated for various entrained dust emission mechanisms. For volatile emissions, the mass emission rate from the landfill was considered. The mass emission rate due to construction activity and wind erosion of the landfill were considered for non-volatile emissions.

USEPA recommends comparing the concentrations of chemicals in ambient air with a reference concentration (RfC) rather than a reference dose (RfD) for

assessing inhalation exposure (USEPA, 1990a). The estimated concentrations and the effective air concentrations (EAC) were equivalent for the residential exposure scenario because RfCs assume 24-hour exposure and an inhalation rate of 20 m^3/day for adults and 16 to 24 m^3/day for children. For the occupational exposure, an EAC is derived by normalizing the exposure duration on site, at the moderate inhalation rate, to a 24-hour day at the average daily inhalation rate. This EAC is then compared to the RfC when available for a chemical. Refer to Appendix M, Table M-11, for the equation used to estimate the EAC.

6.3.5.2 Indoor Air from Residential Water Use

Use of contaminated water for bathing/showering may contribute concentrations of volatile chemicals to indoor air. The method used to estimate concentrations in air while showering is based on results of shower volatilization experiments (Andelman, 1986; Andelman, 1989). The experiments involved pumping a tracer chemical (aqueous trichloroethane) solution through an experimental shower chamber and measuring resulting concentrations of the tracer in the air.

Experimental data on percent volatilization in showers are not available for the chemicals of potential concern for this assessment. By considering the relative volatility of a specific chemical compared to the volatility of trichloroethane, the volatilization transfer coefficient can be estimated for the chemicals of potential concern. This approach is applicable to chemicals with vapor pressures lower than the vapor pressure of trichloroethane as well as chemicals with vapor pressures higher than the vapor pressure of trichloroethane but less than or equal to 400 mm. The model utilizes the following assumptions:

1. Water flow rate = 20 L/min [based on a U.S. Department of Housing and Urban Development survey which found the mean and maximum value for water flow rate in showers to be between 10 L/min and 30 L/min (Andelman, 1989)];

2. Air exchange rate = 1 per hour [a conservative value suggested by Andelman et. al., 1989 (Andelman, 1989)];

3. Dimensions of the shower stall = 5.5 × 3 × 8 feet (volume = 3.736 m^3); and

4. Shower duration = 7 minutes for the average shower duration and 15 minutes for the reasonable maximum (USEPA, 1989a).

A detailed discussion of the calculations is presented in Appendix M. Table 6-6 summarizes the estimated average and reasonable maximum concentrations in the shower stall used in the risk assessment to estimate indoor inhalation exposures from residential groundwater use.

EPA recommends comparing the concentrations of chemicals in the shower stall with a reference concentration (RfC) rather than a reference dose (RfD) for assessing inhalation exposure (EPA, 1990a). Because RfCs assume 24-hour exposure, and an adult inhalation rate of 20 m^3/day, a direct comparison of inhalation in the shower to an RfC is inappropriate. Instead, an EAC was derived by normalizing the short-duration exposure received in the shower, at the shower inhalation rate, to a 24-hour day at the average daily inhalation rate. This EAC was then compared to the RfC when available for a chemical. Table M-11, presented in Appendix M, summarizes the assumptions and algorithms used to estimate exposure to volatile chemicals while showering.

6.3.5.3 Groundwater

A series of mathematical models was used to estimate the transport and fate of groundwater contaminants migrating from Landfill No. 25 at CAFB. The objective of the analysis was to provide conservative estimates of the maximum concentrations of chemicals of potential concern that would be expected at targeted receptor sites. Appendix K presents a detailed discussion of calculations.

Migration of soil moisture and contaminants in the vadose zone beneath Landfill No. 25 was analyzed using analytical solutions for steady state unsaturated flow. Groundwater flow and contaminant transport in the unconfined aquifer were analyzed with a separate analytical model. From a hydraulic perspective, two categories of receptors were considered to represent the potential for human exposure to contaminants originating at Landfill No. 25. These are hydraulically active and hydraulically passive receptors.

Hydraulically active receptors are defined as those that impact the nature of the groundwater flow field and therefore the contaminant concentrations at the receptor as well. The ten potable water wells located on-base fall into this category. Hydraulically, the wells draw groundwater towards them by creating a cone of depression that does not exist naturally. A hypothetical well was positioned to capture groundwater and contaminants migrating from site.

Initially, the time of travel of unsaturated soil moisture from the bottom of the landfill to the water table was estimated (see Appendix K). The time of travel was estimated to be 173 years. The fate and movement of organic materials in subsurface environments are governed largely by sorption and biodegradation. Sorption affects the rate of travel of organic material, relative to that of water through subsurface systems (McCarty et. al., 1981). Solutes which may be sorbed/desorbed on soil, such as metals and pesticides, are expected to migrate at a slower velocity than the soil moisture, and will require a longer period of time to reach the water table. However, 173 years was used as a conservative estimate of the time required for contaminants to reach the groundwater.

The ultimate fate of organic compounds in the subsurface system depends upon biodegradative processes. The attenuation of organic species from biological, chemical, and physical degradation was estimated assuming a first-order decay mechanism. Fate and transport data were obtained from the *Soil Transport and Fate*

Database (Sims et. al., 1991). In addition to attenuation by first-order decay, a physical dilution of groundwater contaminants can be expected to take place as groundwater is pumped from the aquifer. For the purposes of this risk assessment, a hypothetical agricultural well was placed downgradient of the landfill.

Given the extended time of travel, even the most persistent species for which data were available is expected to be attenuated and diluted to 0.0002 or less than its original concentration. Less persistent species are expected to be attenuated to a greater degree. Therefore, organic chemicals of potential concern are predicted to be reduced to near zero concentrations in the water table.

The fate of metals in the unsaturated zone was modeled using estimated distribution coefficients (K_d's) to partition them between the sorbed, solid phase and the mobile, liquid phase. Under actual field conditions, the concentration of metals in soil water reaching the water table is likely to be less than the values estimated in this manner due to the use of highly conservative assumptions. Table 6-6 summarizes the estimated concentrations in groundwater used in this risk assessment to estimate exposures from future residential and agricultural groundwater use. However, at the present rate of pumping, the Ogallala Formation is being mined faster than downward metal migration. Therefore, it is unlikely that the Ogallala aquifer will be serving as a source for domestic water in 173 years, making this an incomplete exposure pathway.

6.3.5.4 Surface Water

Surface water modeling was completed using the guidelines set forth in the *Superfund Exposure Assessment Manual* (USEPA, 1988b). The Soil Conservation Service "curve number" rainfall/runoff hydrograph model (Mockus, 1972) was used to calculate runoff from several different storm events (see Appendix L). Hydrographs from storm events were then imported into a model that uses the Modified Universal Soil Loss Equation (MUSLE). The Universal Soil Loss Equation (USLE) was used to determine

sediment loss from a watershed and MUSLE was used to determine sediment yield to a downgradient location (Playa Lake). Once the runoff and sediment yield values were calculated, the dissolved and sorbed fractions of the contaminants were determined using the compounds sorption partition coefficient. Mass loading was divided by the calculated volume of Playa Lake to determine the estimated concentration in Playa Lake water. The estimated concentrations are presented in Table 6-6 and were used to estimate the average and reasonable maximum concentrations of chemicals in fruits, vegetables, meat and dairy products for the future exposure scenarios for off-base residents. Appendix L presents a detailed discussion of the calculations.

6.3.5.5 Fruits and Vegetables

Potentially contaminated surface water in the vicinity of Landfill No. 25 (Playa Lake) is used by a local farmer for irrigation purposes. In addition, many agricultural wells are located in the vicinity of CAFB. For this risk assessment, it was assumed that the use of contaminated water for irrigating farm crops contributes to concentrations of contaminants in edible portions of plants. The concentration of chemicals in plants irrigated with contaminated water depends on the concentration of the chemical in the irrigation water, subsequent concentration of the chemical in the soil, the plant type, and other factors.

To derive a concentration in soil from irrigation with water containing contaminants, an irrigation rate of 3,000 L/m^2/year was assumed (an average of approximately 39 inches of water applied over a six-month growing period in this geographic region) (Baes, et. al., 1984; Base Natural Resources Environmental Group, 1992). Irrigation was assumed to continue for 30 years for evaluation of long-term exposures because soil concentration of inorganic chemicals may build up over time. Degradation, chemical transformation, or other soil removal processes were not considered, although these processes likely occur. It was further assumed that the total mass of contaminants resides in the top 15 cm of soil and the soil bulk density was 1333

kg/m^3. Volatile organic chemicals (benzene, diesel fuel, hydrocarbons, methylene chloride and toluene) were not evaluated for this pathway because these chemicals can be largely expected to volatilize from the irrigation water and soil surface before significant plant uptake can occur.

Appendix M provides the algorithm and spreadsheet calculations for quantifying concentrations in soil as a result of irrigation and subsequent uptake into fruits and vegetables. The estimated average and reasonable maximum contaminant concentrations in vegetables resulting from irrigation of farm crops with potentially contaminated surface and groundwater are listed in Tables 6-7 and 6-8.

6.3.5.6 Meat and Dairy Products

The use of potentially contaminated groundwater for stock water is assumed to contribute to concentrations of contaminants in the edible meat of beef cattle and in milk and dairy products. However, there is no evidence to suggest that surface water (Playa Lake) is currently being used or will be used in the future for stock water (Base Natural Resources Environmental Group, 1992). While grazing, cattle also ingest surface soil, which can build up contaminant concentrations if the pasture is irrigated with contaminated water sources. As cattle ingest contaminated feed, water, and soil, some chemicals may be absorbed in the animals' gastrointestinal tract. The more lipophilic chemicals may then accumulate in meat.

To estimate the chemical concentration in meat and dairy products, an equation derived from the *Multi-Pathway Health Risk Assessment Input Parameters Guidance Document* (Clement, 1988) was used. Appendix M provides the algorithm and spreadsheet calculations for quantifying concentrations in meat and dairy products as a result of contaminated stock water and feed crops irrigated with contaminated water.

Contaminated food sources included in the evaluation are stock water from potentially contaminated groundwater, feed crops irrigated with surface water drawn from the Playa Lake or groundwater, and incidentally ingested soil. The fraction of feed from a contaminated source was assumed to be 100% for water (groundwater scenario), feed, and soil. One-hundred percent of all contaminants in the water, feed, and soil was assumed to be bioavailable. While these assumptions are not necessarily realistic and tend to be overly conservative, they allow assessment of a worst-case scenario. A cattle water ingestion rate of 150 kg/day, and a consumption rate of 16 kg/day for lactating cows and 8 kg/day for nonlactating cows and cattle (Base Natural Resources Environmental Group, 1992), and a soil ingestion rate of 0.6 kg/day, or 4% of the feed consumption rate (Clement, 1988), per head of cattle was assumed.

The estimated average and reasonable maximum concentrations in beef and dairy products, assuming the cattle feed on corn, milo, and alfalfa irrigated with potentially contaminated surface water drawn from the Playa Lake and potentially contaminated groundwater, are presented in Table 6-7 and 6-8.

6.3.6 Task 6: Estimation of Chemical Intakes for Individual Pathways

Exposure is defined as the contact rate of an organism with a chemical or physical agent. Intake is defined as exposure normalized for time and body weight and is expressed in units of mg chemical/kg body weight-day (USEPA, 1989a).

There are three categories of variables that are used to estimate intake:

1. Chemical-related variables (exposure concentration);
2. Variables that describe the exposed population (contact rate, exposure frequency and duration, and body weight); and
3. Assessment-related variables (averaging time).

The chemical-related variables (exposure concentrations) are presented in Tables 6-6, 6-7, and 6-8. Tables M-11 through M-19 presented in Appendix M, summarize the assumptions and algorithms used to estimate exposure for each exposure pathway. The rationale for selecting individual values is explained in footnotes to the tables. The tables in Appendix M also document the equations used for calculating pathway-specific intakes.

Site-specific and chemical-specific values were used when available data justified their use; otherwise conservative default values were substituted. Exposure assumptions recommended in the *Human Health Evaluation Manual, Supplemental Guidance: Standard Default Exposure Factors* (USEPA, 1991a), the *Risk Assessment Guidance for Superfund* (USEPA, 1989a), and the *Exposure Factors Handbook* (USEPA, 1989b) were used when available and applicable.

6.3.7 Exposure Assessment Uncertainties

The critical factor in assessing the effect of uncertainty on the exposure assessment is not that uncertainty exists, but rather that the risk assessor is able to qualify or quantify the uncertainty so that the decision-maker can make informed decisions. Major sources of uncertainty associated with the exposure assessment include:

1. The initial characterization of the physical setting that defines the risk assessment involves professional judgment and assumptions;

2. The possibility of false negatives or false positives associated with environmental sampling and analysis;

3. The ability of fate and transport models to realistically simulate the behavior of chemicals in the environment; and

4. The accuracy of exposure assumptions in representing the degree and way in which individuals are exposed.

Uncertainty is addressed in this risk assessment by:

1. Providing information related to the likelihood that assumed conditions will occur to allow interpretation of conditional risk estimates in the proper context;

2. Providing toxicity profiles for chemicals with known health effects that were eliminated from the quantitative risk assessment on the basis of the concentration/toxicity screen and a discussion of possible consequences of the exclusion of these chemicals from the quantitative risk assessment;

3. Having the data and documentation supplied to the risk assessor(s) reviewed according to a previously specified level or plan (see QCSR, Radian, 1993) by professionals with a knowledge of analytical procedures;

4. Incorporating both average and reasonable maximum values to provide a range of results rather than single values;

5. Using conservative estimates when defining reasonable maximum exposure assumptions in order to protect human health and the environment; and

6. Identifying and discussing the major sources of uncertainty and their effects on the exposure estimates in order that the results can be properly interpreted and used for estimation of risks.

6.3.7.1 Definition of Physical Setting

Identification of current and future land uses and exposure pathways as well as selection of chemicals detected at the site for inclusion in the quantitative risk assessment involves professional judgment and significantly affects the results of the risk assessment. A concerted effort has been made to provide information related to the likelihood that the assumed conditions will occur in order to allow interpretation of the risk estimates provided in Section 6.5 in the proper context. It should be noted that the risk estimates provided in this document are conditional upon the assumptions made throughout the risk assessment process.

Two of the most important factors when determining the potential effect of including a chemical in the risk assessment are its measured concentrations at the site and its toxicity. After carefully considering concentration and toxicity, several chemicals were eliminated from the quantitative risk assessment. This decision was based on the assumption that chemicals which were detected relatively infrequently (< 10%) and contributed less than 1% of the total risk factor for the site are unlikely to contribute significantly to the risks calculated in subsequent stages of the risk assessment. Use of this screening procedure involved considerable use of professional judgement. However, it greatly reduced the number of chemicals carried through the risk assessment and allowed the risk assessment to focus on the chemicals and media that are the greatest contributors to the overall risk. While this approach could potentially underestimate risks, it was considered appropriate because in most risk assessments the total risk for a particular medium is typically contributed by only a few chemicals. A total of 40 chemicals were eliminated from the risk assessment, representing approximately 0.2% and 0.6% of the total carcinogenic and noncarcinogenic risk factors, respectively.

6.3.7.2 Fate and Transport Modeling

There is always uncertainty as to how well fate and transport or exposure models approximate the true relationships between site-specific environmental conditions. Therefore, it is important to identify key model assumptions and their potential impacts on the risk estimates. Release rates to the air, groundwater, and surface water were based on analytical data from soils collected during this investigation. Estimated releases to all media with the exception of surface water were assumed to be steady state, indicating that they will not increase or decrease over the assumed periods of time for the exposure duration. Therefore, the estimated release rates are biased toward conservatism and most likely are overestimated because contaminant concentrations in the soil should decrease over time as chemicals volatilize to the air, degrade in the soil, and are flushed from the site.

Modeling the fate and transport of contaminants in air and water requires the use of overly simplistic assumptions that do not simulate the environment. Realistically, migration of contaminants from the source to receiving media involves numerous complex processes that are not necessarily addressed by the available models.

In many cases, conservative values were used for model input parameters. No pollutant removal processes were considered and a decay coefficient of 0 was used in the ISCST2 dispersion model for calculating ambient air concentrations. Therefore, concentrations predicted at each receptor are conservative estimates. These conservative assumptions result in higher ground level concentration estimates. In addition, subsurface contamination was assumed to be uniformly mixed. This assumption may or may not be overly conservative. The model used for transport of contaminants in groundwater and surface water uses conservative modeling assumptions to provide estimates of the maximum concentrations at the receptor sites. Modeling results were based on time of travel calculations for soil moisture. Solutes, which may sorb/desorb on soil, would be expected to migrate at a slower velocity than soil moisture and, therefore, would require a longer period of time to reach the water table. In addition, there are insufficient data to estimate the degree to which metals will be attenuated in the soil column. The fate of metals in the unsaturated zone was modeled using estimated distribution coefficients (K_d) to portion them between the sorbed, solid phase and the mobile, liquid phase. However, K_d values are extremely variable and may range from one to many orders of magnitude, depending on site-specific solute and soil characteristics. Because of the inherent uncertainties associated with the estimated K_d values, the estimated surface and groundwater concentrations could be over- or underestimated by several orders of magnitude.

6.3.7.3 Exposure Parameter Estimation

The standard assumptions regarding body weight, exposure period, life expectancy, population characteristics, and lifestyle may not accurately represent site-

specific exposure situations. The assumptions used most likely overestimate human exposures but may underestimate them in some cases. The purpose of exposure parameter estimations are to reflect realistic, site-specific exposures. However, because exact current and future exposure that more accurately depict all scenarios cannot be determined, assumptions were made which most likely err on the conservative (safe) side to protect human health.

Assumptions regarding exposure parameters that are conservative and may overestimate exposures include:

1. The use of modeled concentrations to represent exposure point concentrations for most exposure scenarios.

2. The amount of media intake is assumed to be constant and representative of the exposed population.

3. Exposure is assumed to occur 350 days/year for chronic exposure scenarios for off-base residents involving inhalation of ambient air and consumption of locally produced agricultural, beef, and dairy products. Hypothetical on-site workers and construction workers are assumed to be exposed by inhalation of ambient air at the perimeter of Landfill No. 25 or at the construction site, where contaminant concentrations are expected to be highest, 100 or 250 days/year, respectively. It is conservative to assume that off-base residents would consume milk, meat, fruit, or vegetables that come from the contaminated source 350 days/year. It is even more conservative to assume that on-site workers would be at the site perimeter 100 days/year, since there are no known activities which take place at the site presently. Should the construction that has been proposed for Landfill No. 25 take place, it is highly unlikely that construction workers would be exposed to the high estimated airborne contaminant concentrations, which represent an upperbound estimate for occupational exposures, 8 hours a day, 250 days/year for two years. These assumptions may further overestimate exposures.

4. Ambient air concentrations predicted at the perimeter of CAFB (approximately 1250 feet from the site) were used to estimate risks associated with residential exposures. This assumption may be overly conservative because contaminant concentrations in the air

would be expected to be diluted at distant sites, such as off-base residences (closest residential land use is 3500 feet).

5. The use of feed-to-beef and feed-to-milk transfer coefficients that do not account for metabolism and/or disposition of chemicals may also lead to overestimation of exposure.

6. One hundred percent absorption of inhaled and ingested contaminants is assumed. One hundred percent bioavailability is assumed for all inhaled, ingested, and dermally absorbed contaminants. These assumptions are highly conservative.

7. Future off-site residential scenarios assume direct use of groundwater by residents. However, by the time the contaminants reach the groundwater, it is probable that the aquifer will be depleted and not available for residential use.

All of the above exposure assumptions tend to overestimate exposures. No assumptions that tend to underestimate exposures have been identified with respect to exposure parameter estimation.

Exposure parameters used in the assessment represent exposures that may occur considering both current and future land use. Future off-base land use is not expected to differ significantly from current land use practices. However, CAFB is an expanding base and, therefore, current land use at Landfill No. 25 may not reflect future uses.

6.4 Toxicity Assessment

Toxicity assessment involves determining whether exposure to an agent can increase the incidence of a particular adverse effect (e.g., cancer, birth defects) in humans, characterizing the nature and strength of evidence of causation, and if sufficient data are available, quantifying the relationship between the dose of the contaminant and the incidence of adverse health effects in the exposed population. Toxicity values are derived from the quantitative dose-response relationship. These values can be used to

estimate the incidence or potential for adverse effects as a function of human exposure to the contaminant. This section summarizes the toxicity values used for the risk assessment.

6.4.1 Background

USEPA has performed the toxicity assessment step for numerous chemicals, and the resulting toxicity information and toxicity values have undergone extensive internal peer review. Toxicity values used to evaluate noncarcinogenic effects (effects other than cancer) include:

- Reference dose (RfD) in units of mg/kg-day; and
- Reference concentration (RfC) in units of mg/m^3.

The RfD and RfC are estimates (with uncertainty spanning as much as an order of magnitude) of the daily exposure to the human population (including sensitive sub-groups) that is likely to be without an appreciable risk of deleterious effects during a portion of the lifetime, in the case of a subchronic RfC or RfD, or during the lifetime, in the case of a chronic RfC or RfD. The RfD is used to evaluate oral and dermal exposures and the RfC is used to evaluate inhalation exposures.

Toxicity values used to evaluate carcinogenic effects include:

- Weight of evidence classification;
- Slope factor (SF) in units of $(mg/kg\text{-}day)^{-1}$; and
- Unit risk for inhalation exposure in units of $(\mu g/m^3)^{-1}$.

The weight of evidence classification is a USEPA classification system for characterizing the extent to which the available data indicate that an agent is a human carcinogen. In assessing the carcinogenic potential of a chemical, USEPA classifies the chemical into

one of the following groups, according to the weight of evidence from epidemiological studies and animal studies:

Group A - Human Carcinogen (sufficient evidence of carcinogenicity in humans);

Group B - Probable Human Carcinogen (B1 - limited evidence of carcinogenicity in humans; B2 - sufficient evidence of carcinogenicity in animals with inadequate or lack of evidence in humans);

Group C - Possible Human Carcinogen (limited evidence of carcinogenicity in animals and inadequate or lack of human data);

Group D - Not Classifiable as to Human Carcinogenicity (inadequate or no evidence); or

Group E - Evidence of Noncarcinogenicity for Humans (no evidence of carcinogenicity in adequate studies).

USEPA performs quantitative carcinogenic risk assessments for chemicals in Groups A and B, and on a case-by-case basis for chemicals in Group C. Classification of a chemical as Group D or E precludes performance of quantitative risk assessment. Cancer slope factors are estimated through the use of mathematical extrapolation models, most commonly the linearized multistage model, for estimating the largest possible linear slope (within the 95% confidence limit) at low extrapolated doses that is consistent with the data. The slope factor is characterized as a plausible upper-bound estimate of the probability of a response per unit intake of a chemical over a lifetime. The slope factor is used to estimate an upper-bound probability of an individual developing cancer as a result of a lifetime of exposure to a particular level of a potential carcinogen. The unit risk for drinking water and inhalation is the risk per concentration unit in water (risk per $\mu g/L$) and air (risk per $\mu g/m^3$), respectively.

6.4.2 Sources of Information

The following sources of information, in order of priority, were consulted to identify toxicity values for chemicals of concern with potential for human exposure:

- USEPA's Integrated Risk Information System (IRIS) - IRIS is updated monthly, provides verified RfDs and slope factors, and is the Agency's preferred source of toxicity information;
- USEPA's Health Effects Assessment Summary Tables (HEAST) - HEAST provides information on interim (not yet verified by USEPA Workgroups) as well as verified RfDs and slope factors and is used only to obtain toxicity values for chemicals not listed in IRIS;
- Other USEPA documents, such as the Drinking Water Regulations and Health Advisories (USEPA, 1991b).

6.4.3 Toxicity Values Used in the Risk Assessment

This section summarizes the available toxicity information for each of the chemicals of concern with potential for human exposure. Chemicals of concern that were screened out during the chemical selection process (see Section 6.1) are not included in the toxicity assessment. The relevant information includes standard USEPA toxicity values and toxicity values derived for use in this risk assessment. The information in this section was used in determining the risks associated with noncarcinogenic effects (RfDs), carcinogenic potential (slope factors), and weight of evidence classification. These values are defined and discussed in Section 6.4.1 of this report.

6.4.3.1 Toxicity Values for Noncarcinogenic Effects

The RfD values for the chemicals of concern are presented in Table 6-9 and were obtained from an IRIS search dated 1 February 1993 or from the USEPA, HEAST, 1992. Oral RfD values were not available for aluminum, benzene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, β-BHC, 4,4'-DDD, 4,4'-

Table 6-9

Toxicity Values for Chemicals Specific to Landfill No. 25
CAFB, Clovis, New Mexico

Chemical	EPA Class	Chronic Oral RfD (mg/kg-day)	Subchronic Oral RfD (mg/kg-day)	Chronic Inhalation RfC (mg/m^3)	Subchronic Inhalation RfC (mg/m^3)	Oral Slope Factor (mg/kg-day)$^{-1}$	Inhalation Unit Risk 1/(µg/m^3)	Inhalation Slope Factor (mg/kg-day)$^{-1}$
Organics								
β-BHC	C	--	--	--	--	1.80E+00 [I]	5.3E-04 [I]	1.80E+00 [H]
Benzene	A	--	--	--	--	2.90E-02 [I]	8.30E-06 [I]	2.90E-02 [H]
Benzo(a)pyrene	B2	--	--	--	--	7.30E+00 [I]	1.70E-04 [H]	6.10E+00 [H]
Benzo(b)fluoranthene	B2	--	--	--	--	1.02E+00 [Comp]	--	--
Benzo(k)fluoranthene	B2	--	--	--	--	4.82E-01 [Comp]	--	--
4,4'-DDD	B2	--	--	--	--	2.40E-01 [I]	--	--
4,4'-DDE	B2	--	--	--	--	3.40E-01 [I]	--	--
4,4'-DDT	B2	5.00E-04 [I]	5.00E-04 [H]	--	--	3.40E-01 [I]	9.70E-05 [I]	3.40E-01 [H]
Diesel Fuel	D	8.00E-03 [EPA]	--	--	--	--	--	--
Fluoranthene	D	4.00E-02 [I]	4.00E-01 [H]	--	--	--	--	--
Heptachlor	B2	5.00E-04 [I]	5.00E-04 [H]	--	--	4.50E+00 [I]	1.30E-03 [I]	4.50E+00 [H]
Heptachlor epoxide	B2	1.30E-05 [I]	1.30E-05 [H]	--	--	9.10E+00 [I]	2.60E-03 [I]	9.10E+00 [H]
Hydrocarbons								
MCPP		1.00E-03	1.00E-02 [H]	--	--	--	--	--
Methylene chloride	B2	6.0E-02 [I]	6.00E-02 [H]	3.00E+00 [H]	3.00E+00 [H]	7.50E-03	4.70E-07	--
Pyrene	D	3.00E-02 [I]	3.00E-01 [H]	--	--	5.91E-01 [Comp]	--	--
Toluene	D	2.00E-01 [I]	2.00E+00 [H]	4.00E-01 [I]	2.00E+00 [H]	--	--	--

Table 6-9

(Continued)

Chemical	EPA Class	Chronic Oral RfD (mg/kg-day)	Subchronic Oral RfD (mg/kg-day)	Chronic Inhalation RfC (mg/m^3)	Subchronic Inhalation RfC (mg/m^3)	Oral Slope Factor (mg/kg-day)$^{-1}$	Inhalation Unit Risk 1/(µg/m^3)	Inhalation Slope Factor (mg/kg-day)$^{-1}$
Inorganics								
Aluminum		--	--	--	--	--	--	--
Arsenic	A	3.00E-04 [I]	3.00E-04 [H]	--	--	--	4.30E-03 [I]	5.0E+01 [H]
Manganese (Food)	D	1.50E-01 [I]	1.00E-02 [H]	4.00E-04 [I]	4.00E-04 [H]	--	--	--
Manganese (Water)	D	5.00E-03 [I]	1.00E-01 [H]	4.00E-04 [I]	4.00E-04 [H]	--	--	--
Thallium		8.00E-05 [I]	--	--	--	--	--	--
Vanadium		7.00E-03 [H]	7.00E-03 [H]	--	--	--	--	--
Zinc	D	3.00E-01 [I]	2.00E-01 [H]	--	--	--	--	--

H = Health Effects Assessment Summary Tables, 1992.
I = Integrated Risk Information System Database, Search dated February 1993.
Comp = Calculated using relative potency estimates in conjunction with the Benzo[a]Pyrene dose-response model.
Calc MCL = Calculated based on Maximum Contaminant Level (MCL).
EPA = USEPA memorandum in response to requests for toxicity values for fuels, 1992.

4,4'-DDE, or hydrocarbons. Unless a specific dermal RfD was listed by IRIS or HEAST, the RfD for dermal exposures was assumed to be the same as for oral exposures. When available, inhalation RfCs were included.

6.4.3.2 Toxicity Values for Carcinogenic Effects

The slope factors for chemicals of potential concern classified by USEPA as carcinogens are also presented in Table 6-9 and were obtained from an IRIS search dated 1 February 1993 or from HEAST, 1992. When available, inhalation unit risk factors were included.

6.4.4 Health Effects Summaries

Appendix N of this report summarizes the toxicity information available for the noncarcinogenic and carcinogenic effects associated with the chemicals of potential concern. Toxicity profiles have been provided for chemicals with known health effects that were screened out based on the concentration/toxicity screen as well as for those chemicals carried through the quantitative risk assessment. General information on the potential health effects of exposures to the chemicals of potential concern is provided. Toxicity information on noncarcinogenic effects is provided for each contaminant that has an RfD value and includes the data that formed the basis for the determination of the RfD. Information on the potential carcinogenic risk includes supporting data for the USEPA carcinogenic classification. Table 6-10 summarizes the available information on human health effects of exposure to the chemicals that have been carried through the quantitative risk assessment. Unless otherwise stated, the information presented below (and in Appendix N) on each of the chemicals of concern is summarized from the information available on IRIS as of 1 February 1993.

6.4.5 Uncertainties Associated with Toxicity Information

Toxicity information for some of the chemicals of concern for this risk assessment was limited. Therefore, varying degrees of uncertainty are associated with the toxicity values presented in this document. Sources of uncertainty associated with toxicity values used in this risk assessment arise from several sources.

A primary source of uncertainty results from the use of information obtained from alternate sources when USEPA-verified toxicity values are not available. It is difficult to assign a level of confidence to these values, although it is appropriate and necessary to use them. Greater uncertainty would result if chemicals that do not have published toxicity values were to be excluded from the assessment.

Physical and chemical descriptions of the exposure atmospheres, amounts to which individuals are exposed, and tissue retention patterns are generally not available for accidental human exposures. Therefore, studies conducted on laboratory animals (under controlled experimental conditions) must, of necessity, be used to provide the exposure, dose, and biological effects data needed to evaluate the toxicity of potentially hazardous materials to which humans may be exposed. However, there are striking differences between laboratory animals and humans in anatomy and physiology. These differences are sources for variation in the toxic responses exhibited between different species. Complicating extrapolations from animals to man are differences in life span, body size, metabolic routes, and routes of exposure. Occasionally adjustments are made, on a case-by-case basis, for species differences in the rate of metabolism or retention within tissues. However, comparisons between species are usually made by use of standardized sizes or weights. These dose terms do not scale-up identically and are in some cases sources of uncertainty themselves.

Table 6-10

Critical Effects of Chemicals of Concern
Landfill No. 25, CAFB, Clovis, New Mexico

Chemical	Noncarcinogenic Effect		Carcinogenic Effect	
	Target Organ	Critical Effect	Target Organ/ Tumor Type	EPA Class
Aluminum	Lung	Increased incidence of asthma, coughing, decreased pulmonary function, pulmonary fibrosis, and several types of cancer have been reported by workers in the aluminum industry.		Not Classified
Arsenic	Lung	Inhalation of inorganic arsenic has been reported to increase the risk of lung cancer. Inhalation of high levels usually results in sore throat and irritated lungs.	Lung-Lung cancer	A-Human Carcinogen
	Skin	Hyperpigmentation and keratosis are characteristic of long-term oral exposure		
	Central Nervous System	Impaired nerve function causing "pins and needles" sensation in hands and feet have been associated with ingestion of arsenic.		

Table 6-10

(Continued)

Chemical	Noncarcinogenic Effect		Carcinogenic Effect	
	Target Organ	Critical Effect	Target Organ/ Tumor Type	EPA Class
Arsenic (Continued)	Vascular System	Decreased production of red and white blood cells, blood vessel damage and abnormal heart function have been noted due to ingestion of arsenic.		
	Gastrointestinal System	Low levels of inorganic arsenic in food or water may result in irritation of the stomach and intestines, with symptoms such as pain, nausea, vomiting, and diarrhea.		
Benzene	CNS (central nervous system)	Exposure to lower levels of (700-3,000 ppm) benzene may cause drowsiness, dizziness, headaches, and unconsciousness. Ingestion of foods containing high levels of benzene may have similar effects.	Bone marrow - leukemia	A-Human Carcinogen

Table 6-10
(Continued)

Chemical	Noncarcinogenic Effect		Carcinogenic Effect	
	Target Organ	Critical Effect	Target Organ/ Tumor Type	EPA Class
Benzene (Continued)	Blood	Inhalation of benzene for long periods of time may have adverse effects on the tissues that form blood cells, particularly the bone marrow. This may result in anemia or excessive bleeding.		
	Reproductive System	Long-term inhalation exposure has been reported to cause irregular menstrual cycles, and reduced ovary size in female workers. Low birth weights, delayed bone formation and bone marrow damage have been reported in off-spring from animals fed benzene during pregnancy.		
	Immune System	Benzene exposure can enhance the probability of infection and may lower the body's defense against tumors.		

Table 6-10
(Continued)

Chemical	Noncarcinogenic Effect		Carcinogenic Effect	
	Target Organ	Critical Effect	Target Organ/ Tumor Type	EPA Class
Benzo(k) Fluoranthene Benzo(b) Fluoranthene	Glandular System	Benzo(a) anthracene has been shown to suppress the sebaceous glands following topical application to mice.	Stomach - stomach tumors Skin - malignant skin tumors Respiratory Tract - respiratory tract tumors	B2-Probable Human Carcinogen
	Reproductive System	Short-term exposure of mice to B(a)P in the diet caused birth defects.		
	Liver and Blood	Long-term (6 months) exposure of mice to B(a)P results in adverse effects on the liver and blood.		
Benzo(a) Pyrene [B(a)P]	Reproductive System	Offspring of animals fed B(a)P during pregnancy have lower birth rates than normal and developmental aberrations (alterations in gonadal development, decreased fertility, increased incidence of sterility).		B2-Probable Human Carcinogen

Table 6-10
(Continued)

Chemical	Noncarcinogenic Effect		Carcinogenic Effect	
	Target Organ	Critical Effect	Target Organ/ Tumor Type	EPA Class
Benzo(a) Pyrene (Continued)	Immune System	Short- and long-term exposures to B(a)P cause death when ingested by animals. Deaths appear to be due to bone marrow suppression.		
Beta-BHC	Liver	Hypertrophy has been reported in a chronic ingestion studies conducted in rats.	Lung - lung cancer Bone - Osteosarcoma	B2-Probable Human Carcinogen
	Kidney	Tubular degeneration, hyalin droplet formation, and interstitial nephritis has been observed in rates fed BHC in the diet.		
4,4'-DDE	Liver and Thyroid	Hypertrophy may result after chronic oral exposure of rodents.	Liver - hepatocellular carcinomas	B2-Probable Human Carcinogen
4,4'-DDD	Thyroid	Atrophy of the thymus has been observed following short-term exposure of mice to DDD in the diet.	Thyroid - tumors Lung - tumors	B2-Probable Human Carcinogen

Table 6-10
(Continued)

Chemical	Noncarcinogenic Effect		Carcinogenic Effect	
	Target Organ	Critical Effect	Target Organ/ Tumor Type	EPA Class
4,4'-DDT	Liver	Chronic exposure may result in changes in enzyme levels in rodents.	Liver - carcinomas	B2-Probable Human Carcinogen
	Reproductive System	Some evidence in laboratory animals indicates that DDT may decrease fertility and may adversely affect offspring.		
Diesel Fuel	Liver	Fatty changes in the livers of mice have been reported following subchronic inhalation exposure.		D - Not Classifiable as to Human Carcinogenicity
Fluoranthene	Liver	Adverse effects on the liver (increased SGPT levels, liver weights, microscopic liver lesions) have been noted in mice.		D - Not Classifiable as to Human Carcinogenicity
	Kidney	Kidney pathology has been noted among mice exposed to fluoranthene.		

Table 6-10

(Continued)

Chemical	Noncarcinogenic Effect		Carcinogenic Effect	
	Target Organ	Critical Effect	Target Organ/ Tumor Type	EPA Class
Heptachlor/Heptachlor Epoxide	CNS	Tremors and convulsions have been reported in animals exposed orally to heptachlor. Heptachlor epoxide is more toxic than heptachlor primarily because it is stored in the fat.	Liver - malignant liver tumors and liver carcinomas	B2-Probable Human Carcinogen
	Liver and Kidney	Animals fed heptachlor have been reported to have enlarged livers, liver damage and kidney damage.		
	Reproductive System	Evidence suggests an association between heptachlor and reproductive effects (infertility; improper development of offspring). Placental transfer of heptachlor epoxide has been reported following inhalation.		

Table 6-10

(Continued)

Chemical	Noncarcinogenic Effect		Carcinogenic Effect	
	Target Organ	Critical Effect	Target Organ/ Tumor Type	EPA Class
Manganese	Lung	Inhalation of manganese particulates can lead to an inflammatory response in the lungs of animals and humans.		D-Not Classifiable as to Human Carcinogenicity
	CNS	Inhalation of large amounts of manganese can lead to a disabling neurological syndrome accompanied by apathy, general weakness, dullness, anorexia, and muscle pain in humans. Loss of libido and impotence have also been reported in males exposed occupationally.		
MCPP (2-Methylchloro-phenoxy Propionic Acid)	Liver	Increased absolute and relative organ weight has been observed in rats exposed to MCPP in the diet.		Not Classified

Table 6-10
(Continued)

Chemical	Noncarcinogenic Effect		Carcinogenic Effect	
	Target Organ	Critical Effect	Target Organ/ Tumor Type	EPA Class
MCPP (Continued)	Kidney	Increased absolute and relative organ weight, increased creatinine and decreased fructose levels have been observed in rats exposed to MCPP in the diet.		Not Classified
Methylene Chloride	Liver	Histological alterations of the liver were noted in a chronic drinking water study conducted on rats.	Liver - hepatocellular neoplasms Lung - alveolar/bronchiolar neoplasms Hematopoietic System - leukemia	B2-Probable Human Carcinogen
Pyrene	Reproductive System	Short-term exposure of mice to B(a)P in the diet causes birth defects.		D - Not Classifiable as to Human Carcinogenicity
	Liver and Blood	Long-term (6 months) exposure of mice to B(a)P results in adverse effects on the liver and blood		

Table 6-10

(Continued)

Chemical	Noncarcinogenic Effect		Carcinogenic Effect	
	Target Organ	Critical Effect	Target Organ/ Tumor Type	EPA Class
Thallium	CNS, Lung, Liver, and Kidney	Thallium can affect the CNS, lung, liver or kidney if large amounts are ingested. Symptoms include temporary hair loss, vomiting, and diarrhea.		D-Not Classifiable as to Human Carcinogenicity
	Reproductive System	Animal reproductive organs, especially the testes have been damaged following thallium exposure in drinking water.		
Toluene	Skin	Irritation of the skin and eyes has been observed in humans.		D-Not Classifiable as to Human Carcinogenicity
	Liver and Kidney	Increased liver and kidney weights have been noted in subchronic studies conducted in rats.		

Table 6-10

(Continued)

Chemical	Noncarcinogenic Effect		Carcinogenic Effect	
	Target Organ	Critical Effect	Target Organ/ Tumor Type	EPA Class
Vanadium	Lung	Chronic inhalation can cause mild respiratory distress (coughing, wheezing, chest pain). Studies suggest that vanadium is not very toxic by the oral route.		Not Classified
Zinc	Gastrointestinal System	Signs of zinc intoxication may include gastrointestinal distress, emesis, and decreased food consumption.		D-Not Classifiable as to Human Carcinogenicity
	Blood	Anemia and hemorrhage have been noted in several species following exposure to high zinc concentrations.		

Another source of uncertainty related to toxicity information is the use of dose-response information from effects observed at high doses to predict adverse health effects that may occur at the low levels to which humans are likely to be exposed in the environment. Sources of uncertainty occur in the USEPA potency estimates (slope factors) when they are applied to humans exposed to levels of putative carcinogens far below those administered to laboratory animals under experimental conditions. Many substances induce or enhance cancer in animals through processes for which a possible threshold can be identified. These effects usually only occur at very high doses and assuming that a lesser degree of the same effect occurs at lower doses is not necessarily an accurate portrayal of toxicity. This assumption may result in gross overestimation of the health risks associated with a particular chemical.

Two major factors that influence toxicity of chemicals are the duration and frequency of exposure. For many agents, the toxic effects following a single exposure are quite different from those produced by repeated and long-term exposures. In general, fractionation of the dose (or exposure) of a chemical reduces its toxicity. Therefore, a single exposure to a substance may produce an immediate severe effect and yet the same dose divided into multiple exposures may produce an attenuated response or no response at all. Such fractionation effects are generally the result of excretion between successive doses or to partial or full reversal of the injury produced by each exposure prior to the next exposure. Chronic (long-term) toxic effects occur if a chemical accumulates (absorption exceeds excretion), if it produces irreversible toxic effects, or if there is insufficient time for the individual to recover from the injury within the exposure interval. Therefore, use of information obtained from short-term exposure studies to predict health effects in humans exposed on a long-term basis may be a source of uncertainty.

Uncertainties arise when information gathered in studies using homogenous animal populations (inbred strains) or healthy human populations (occupational exposures) to predict the effects that are likely to occur in the general human population.

Human populations are a heterogenous group with variations in genetic constitution, diet, living environments (previous environmental exposures), activity patterns, and cultural patterns. All of these factors may influence metabolism, distribution of chemicals within the body, and susceptibility to the damaging effects of those chemicals. It is now well established that individuals exposed to several chemicals simultaneously or sequentially may exhibit altered pharmacologic or toxicologic responses. Interactions have been noted with respect to hepatotoxicity. For example, many of the chlorinated solvents induce enzymes in the liver that are involved in metabolism of chemicals. Therefore, an individual who is exposed to these chemicals may experience increased or decreased toxicity subsequent to exposure to other chemicals that undergo metabolism.

6.4.6 Summary of Toxicity Assessment

An understanding of the degree of uncertainty associated with toxicity information is an important part of interpreting and using that information to calculate toxicity values. The degree of confidence ascribed to toxicity values depends on both the quality of the critical study from which it was derived and the quantity of supporting data. USEPA-verified RfDs published in IRIS are accompanied by a statement of the confidence that the evaluators have in the RfD. A discussion of confidence ratings and USEPA's classification as to carcinogenicity are presented below.

Oral RfD values were available for 15 of the 24 individual contaminants of potential concern. Diesel fuel was the only chemical for which USEPA-derived toxicity values were available that was not published in IRIS or HEAST. USEPA has derived a provisional oral RfD for diesel fuel. This value was obtained from a USEPA memorandum in response to a request for oral systemic and carcinogenic toxicity values for JP-4, JP-5, diesel fuel, and gasoline (AVGAS) found to contaminate soils and groundwater at McChord AFB (Wash Rack/Treatment), Tacoma, WA. The level of confidence in the 14 RfDs given on IRIS ranged from low (nine chemicals) to medium (five chemicals). One RfD (vanadium) was obtained from HEAST, which does not

provide information regarding the level of confidence associated with RfDs. Confidence in the provisional RfD for diesel fuel developed by the USEPA was low. Low confidence indicates that the toxicity value may change if additional toxicity data become available. Oral RfDs were not available for 9 of the chemicals carried through the quantitative risk assessment.

Inhalation RfCs were available for toluene, manganese, and methylene chloride. A confidence rating of medium was assigned to both toluene and manganese. The RfC for methylene chloride was obtained from HEAST, which does not provide information regarding the level of confidence associated with RfCs.

Nineteen of the 24 contaminants carried through the quantitative risk assessment have been classified by the USEPA as to carcinogenic potential. Seven chemicals were classified as Group D (Not Classifiable as to Human Carcinogenicity), indicating inadequate or no evidence of carcinogenicity. One of the chemicals of concern (β-BHC) was classified as Group C (Possible Human Carcinogen) based on limited evidence of carcinogenicity in animals and inadequate or lack of human data. Nine chemicals were classified as Group B (Probable Human Carcinogen), indicating that there is sufficient evidence of the chemical's carcinogenicity in animals and inadequate or no evidence in humans. Two chemicals (benzene and arsenic) were classified as Group A (Human Carcinogen). No chemicals were classified as Group E (Evidence of Noncarcinogenicity for Humans).

USEPA-derived oral slope factors were available for most of the chemicals of potential concern that have been classified as Group A, B, or C carcinogens. However, oral slope factors were derived for benzo(b)fluoranthene, benzo(k)fluoranthene, and pyrene by multiplying the slope factor for benzo(a)pyrene by their respective comparative potency factors. Inhalation slope factors (USEPA-derived) were available for seven chemicals. Inhalation unit risk factors were available for eight chemicals.

6.5 Risk Characterization

Risk characterization involves integrating the possible exposure pathways and estimated chemical intakes with the appropriate toxicity values to form quantitative and qualitative expressions of potential health risk. Measured contaminant exposure levels, as well as those predicted by fate and transport modeling, are compared to chemical-specific toxicity information to determine if current or future levels of contamination, at or near the site, warrant concern for human health. The following subsections briefly describe the methodology used to characterize risk, present and future noncarcinogenic and carcinogenic risk estimates for each exposure scenario, uncertainties associated with predicting risk, and identify the key chemicals of potential concern and exposure pathways that drive the risk assessment.

6.5.1 Risk Characterization Methodology

6.5.1.1 Carcinogenic Effects

The cancer slope factor converts estimated daily intakes to an estimate of incremental risk. Because the slope factor is often an upper 95th percentile confidence limit of the probability of a response based on experimental animal data and an assumption of linearity in the low dose portion of a dose-response curve, the carcinogenic risk estimate is generally an upper-bound estimate. This means "true risk" probably does not exceed the risk estimates generated in this assessment and is likely to be less than the predicted risk (USEPA, 1991a).

For carcinogens, probabilities that an individual will develop cancer over a lifetime of exposure are estimated from projected exposure and the cancer slope factor. Exposure is quantified as the amount of a chemical available at the exchange boundary

(i.e., skin, lungs, etc.) and available for absorption. The carcinogenic risk is calculated for each exposure scenario using the following equation:

$$\text{Risk} = \text{Exposure} \times \text{Slope Factor.}$$

The USEPA Superfund site remediation goal set forth in the National Contingency Plan (NCP) allows a cancer risk of 1E-4 (1 in 10,000) to 1E-6 (1 in 1,000,000). This range is designed to be protective of human health.

6.5.1.2 Noncarcinogenic Effects

To characterize potential noncarcinogenic effects, comparisons are made between projected intakes of substances over a specified time period and toxicity values, primarily oral, dermal, and inhalation reference doses. The ratio of exposure to toxicity value is the hazard quotient (HQ) and the HQ is calculated for each exposure scenario using the following equation:

$$\text{HQ} = \text{Exposure/RfD or RfC}$$

Note that the HQ is not a statistical probability of a noncarcinogenic effect occurring and should not be interpreted as such. If the exposure level exceeds the appropriate toxicity value (i.e., the hazard quotient is greater than one), there may be cause for concern regarding the potential noncarcinogenic effects as set forth in the NCP.

6.5.2 Potential Exposure Scenarios

To ensure adequate characterization of risk that may be incurred at Landfill No. 25 presently or in the future, three chronic scenarios and two subchronic scenarios were identified for human exposure. The chronic exposure scenarios are: 1) present off-site residential; 2) future off-site residential; and 3) on-site worker. The subchronic exposure scenarios are: for 1) the present on-site worker; and 2) the future on-site construction worker.

6.5.3 Combining Risks Associated with Chemicals and Exposure Pathways

For each scenario addressed in this risk assessment, the estimated carcinogenic risk for potential carcinogens is generated on a chemical-specific basis for each relevant pathway of exposure. The estimated risk for each chemical associated with a specific pathway is summed to determine the total risk by pathway. To determine the total exposure scenario risk, total risks for all pathways are summed.

The total risk number assumes that different carcinogens affect the same target organ to produce a cancer response, ignoring potential antagonistic or synergistic effects or disparate effects on different target organs. It also assumes that the individual in the exposure scenario is exposed to site-related contaminants at estimated exposure concentrations by all pathways that compose the scenario. The scenarios were constructed to include all potential pathways of exposure and assume that it is possible for a single individual to be exposed by all pathways in a scenario. It is not likely, however, that a single individual will be exposed by each pathway at the conservatively estimated concentrations in the exposure media. For example, it is unlikely that an individual would be chronically exposed to maximum off-site groundwater concentrations and to maximum off-site concentrations predicted in agricultural products, because the sources of contamination are from different locales.

Likewise, the estimated hazard quotient for noncarcinogenic effects is generated on a chemical-by-chemical basis for each relevant pathway of exposure. The hazard quotients for each chemical associated with a specific pathway are summed to determine the hazard index by pathway. The hazard indices for all pathways are finally summed to determine the total hazard index for the exposure scenario.

6.5.4 Documentation of Risk Characterization Results

The exposure and risk calculations were performed by a risk model (Quantitative Site-Specific Multi-Media Assessment Risk Tool or QSMART) developed to automate the exposure quantification and risk characterization process. The model automates the equations for chemical intake and generates chemical-specific hazard indices for noncarcinogenic effects using RfDs and chemical-specific carcinogenic risk estimates using cancer slope factors. The model sums the resultant values for chemicals in each of the exposure pathways, and across pathways, to generate a total scenario hazard index for noncarcinogenic effects and a total scenario cancer risk for carcinogenic effects. The program also calculates the percentage of the total risk contributed by each individual chemical and pathway of exposure. Appendix O contains the exposure and risk model output.

6.5.5 Risk Characterization for the Present Off-Site Residential Exposure Scenario

This scenario addresses pathways of exposure considered to be complete for off-site residents at the present time based on current use of the land and water. It assumes that land and water use will not change significantly over the duration of exposure.

The present off-site residential scenario assumes exposure to site-related contaminants at off-base locations via three pathways of exposure: 1) ingestion of fruits and vegetables; 2) ingestion of meats and dairy products; and 3) inhalation of volatiles and

particulates in the ambient air. It is possible that contaminants detected in the soil at Landfill No. 25 could impact off-site soils due to deposition of wind-blown dusts. However, this migration pathway was not considered to be significant and was not assessed. Currently, one farmer uses surface water drawn from the Playa Lake for agricultural purposes. Widespread exposure resulting from dermal contact or inhalation of volatiles from Playa Lake water is unlikely because of the single user of this potentially contaminated source. Therefore, these pathways have not been included in this risk assessment.

Exposure concentrations were based on: 1) modeled on-site concentrations in surface water for purposes of predicting uptake and accumulation in fruits, vegetables, meat, and dairy products; and 2) modeled contaminant concentrations in ambient air, based on concentrations in on-site surficial and deep soil samples.

Many chemicals were detected in surficial soil samples and were therefore modeled to the Playa Lake in order to estimate the potential contribution of surface runoff from Landfill No. 25 to human exposure scenarios associated with the site. Based on modeled air emission results, several chemicals are predicted to enter the atmosphere above the landfill via volatilization or wind entrainment of contaminated dust.

Carcinogenic effects were estimated for adults only since risks are estimated as the probability of an individual developing cancer over a life-time. Chronic exposure was evaluated for 1) an average case, using average or 50th percentile values for exposure parameters (e.g., contaminant concentration, body weight, intake rates, exposure duration and frequency); and 2) a reasonable maximum case, using the 95th (occasionally 90th) percentile values for exposure parameters when available and appropriate. Noncarcinogenic effects were evaluated for adults and children with both average and reasonable maximum exposure parameters.

6.5.5.1 Carcinogenic Effects

Adults--Tables 6-11 and 6-12 characterize the average and reasonable maximum carcinogenic risk for adults, respectively. The total hazard indices for average and reasonable maximum exposure were 3E-8 and 1E-7, respectively. Both hazard indices are below the Superfund site remediation risk range goal of 1 in 1,000,000 (1E-6) cancer risk. Arsenic contributes 88% of both the average and reasonable maximum chemical-specific risk. The inhalation pathway contributes virtually all of the risk associated with the average and reasonable maximum exposure scenarios.

6.5.5.2 Noncarcinogenic Effects

Adults--Tables 6-13 and 6-14 characterize the average and reasonable maximum noncarcinogenic risks for adults, respectively. The total hazard index was 9E-3 for both average and reasonable maximum exposure. Manganese contributed 99% of both the average and reasonable maximum chemical-specific risks. The inhalation pathway contributed virtually all of the total average and reasonable maximum risk.

USEPA recommends comparing the concentrations of chemicals in ambient air with a reference concentration (RfC) rather than a reference dose (RfD) for assessing inhalation exposure (USEPA, 1990a). USEPA has been involved for the last several years in developing a method for derivation of inhalation RfCs. This decision was meant to clearly distinguish between oral and inhalation exposure. Currently, RfCs are available only for a limited number of compounds. Inhalation RfCs were not available for some contaminants predicted to enter the atmosphere via volatilization (benzene, diesel fuel, hydrocarbons,) or wind entrainment of contaminated surface soil (4,4'-DDD, 4,4'-DDE, 4,4'-DDT, aluminum, arsenic, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)-fluoranthene, beta-BHC, fluoranthene, heptachlor, heptachlor epoxide, MCPP, pyrene, thallium, vanadium, and zinc). Therefore, the contribution of these chemicals to the total noncarcinogenic risks associated with the inhalation pathway could not be assessed.

Table 6-11

Average Cancer Risk Off-Site Residential Adult - Present
Landfill No. 25, CAFB, Clovis, New Mexico

	Inhalation of Ambient Air	Ingestion of Fruits	Ingestion of Vegetables	Ingestion of Meat	Ingestion of Milk	Total	% Contribution
4,4'-DDD	0E+0	2E-18	3E-18	2E-17	1E-17	3E-17	< 1
4,4'-DDE	0E+0	2E-17	4E-17	7E-17	4E-17	2E-16	< 1
4,4'-DDT	4E-12	7E-18	1E-17	3E-16	2E-16	4E-12	< 1
Arsenic	3E-8	0E+0	0E+0	0E+0	0E+0	3E-8	88
Benzene	1E-9	0E+0	0E+0	5E-20	3E-20	1E-9	4
Benzo(a)pyrene	2E-9	7E-17	1E-16	3E-15	2E-15	2E-9	6
Benzo(b)fluoranthene	0E+0	2E-17	3E-17	2E-15	1E-15	3E-15	< 1
Benzo(k)fluoranthene	0E+0	6E-18	1E-17	1E-15	8E-16	2E-15	< 1
beta-BHC	2E-12	8E-16	1E-15	5E-18	4E-18	2E-12	< 1
Heptachlor	6E-12	2E-16	4E-16	3E-16	2E-16	6E-12	< 1
Heptachlor epoxide	1E-11	9E-17	2E-16	1E-16	7E-17	1E-11	< 1
Methylene chloride	9E-10	0E+0	0E+0	6E-21	4E-21	9E-10	3
Pyrene	0E+0	2E-16	4E-16	2E-20	8E-17	7E-16	< 1
Total by pathway	3E-8	1E-15	3E-15	6E-15	4E-15		
% Contribution by pathway	100	< 1	< 1	< 1	< 1		
Scenario Total						3E-8	

Table 6-12

Reasonable Maximum Cancer Risk Off-Site Residential Adult - Present
Landfill No. 25, CAFB, Clovis, New Mexico

	Inhalation of Ambient Air	Ingestion of Fruits	Ingestion of Vegetables	Ingestion of Meat	Ingestion of Milk	Total	% Contribution
4,4'-DDD	0E+0	1E-17	3E-17	4E-16	2E-16	7E-16	< 1
4,4'-DDE	0E+0	2E-16	3E-16	2E-15	9E-16	3E-15	< 1
4,4'-DDT	1E-11	6E-17	1E-16	6E-15	3E-15	1E-11	< 1
Arsenic	1E-7	0E+0	0E+0	0E+0	1E-7		88
Benzene	4E-9	0E+0	0E+0	1E-18	7E-19	4E-9	4
Benzo(a)pyrene	6E-9	6E-16	1E-15	7E-14	4E-14	6E-9	6
Benzo(b)fluoranthene	0E+0	2E-16	3E-16	4E-14	2E-14	6E-14	< 1
Benzo(k)fluoranthene	0E+0	5E-17	9E-17	3E-14	2E-14	5E-14	< 1
beta-BHC	8E-12	7E-15	1E-14	1E-16	9E-17	8E-12	< 1
Heptachlor	2E-11	2E-15	4E-15	7E-15	4E-15	2E-11	< 1
Heptachlor epoxide	5E-11	7E-16	1E-15	2E-15	1E-15	5E-11	< 1
Methylene chloride	3E-9	0E+0	0E+0	1E-19	8E-20	3E-9	3
Pyrene	0E+0	2E-15	4E-15	4E-19	2E-15	7E-15	< 1
Total by pathway	1E-7	1E-14	2E-14	2E-13	9E-14		
% Contribution by pathway	100	< 1	< 1	< 1	< 1		
Scenario Total						1E-7	

Table 6-13

Average Non-Cancer Hazard Index Summary Off-Site Residential Adult - Present
Landfill No. 25, CAFB, Clovis, New Mexico

	Inhalation of Ambient Air	Ingestion of Fruits	Ingestion of Vegetables	Ingestion of Meat	Ingestion of Milk	Total	% Contribution
4,4'-DDT	0E+0	3E-13	6E-13	1E-11	7E-12	2E-11	< 1
Arsenic	0E+0	9E-10	1E-8	2E-9	1E-10	1E-8	< 1
Fluoranthene	0E+0	1E-13	2E-13	2E-14	2E-14	4E-13	< 1
Heptachlor	0E+0	8E-13	1E-12	1E-12	7E-13	4E-12	< 1
Heptachlor epoxide	0E+0	6E-12	1E-11	6E-12	4E-12	3E-11	< 1
Manganese	9E-3	4E+10	8E-11	6E-13	1E-12	9E-3	99
Methylene chloride	5E-6	0E+0	0E+0	1E-16	6E-17	5E-6	< 1
Pyrene	0E+0	1E-13	2E-13	7E-18	4E-14	3E-13	< 1
Thallium	0E+0	7E-11	1E-9	4E-13	4E-9	5E-9	< 1
Toluene	4E-6	0E+0	0E+0	5E-17	1E-15	4E-6	< 1
Vanadium	0E+0	1E-9	4E-9	9E-13	7E-9	1E-8	< 1
Zinc	0E+0	1E-8	7E-9	6E-14	3E-9	2E-8	< 1
Total by pathway	9E-3	1E-8	2E-8	2E-9	1E-8		
% Contribution by pathway	100	< 1	< 1	< 1	< 1		
Scenario Total						9E-3	

Table 6-14

Reasonable Maximum Non-Cancer Hazard Index Summary
Off-Site Residential Adult - Present
Landfill No. 25, CAFB, Clovis, New Mexico

	Inhalation of Ambient Air	Ingestion of Fruits	Ingestion of Vegetables	Ingestion of Meat	Ingestion of Milk	Total	% Contribution
4,4'-DDT	0E+0	8E-13	2E-12	8E-11	5E-11	1E-10	< 1
Arsenic	0E+0	2E-9	3E-8	1E-8	6E-10	4E-8	< 1
Fluoranthene	0E+0	3E-13	5E-13	2E-13	1E-13	1E-12	< 1
Heptachlor	0E+0	2E-12	4E-12	8E-12	4E-12	2E-11	< 1
Heptachlor epoxide	0E+0	1E-11	3E-11	5E-11	3E-11	1E-10	< 1
Manganese	9E-3	6E+10	2E-10	4E-12	9E-12	9E-3	99
Methylene chloride	5E-6	0E+0	0E+0	7E-16	4E-16	5E-6	< 1
Pyrene	0E+0	3E-13	5E-13	5E-17	2E-13	1E-12	< 1
Thallium	0E+0	2E-10	3E-10	3E-12	2E-8	2E-8	< 1
Toluene	4E-6	0E+0	0E+0	4E-16	6E-15	4E-6	< 1
Vanadium	0E+0	3E-9	1E-8	7E-12	4E-8	6E-8	< 1
Zinc	0E+0	3E-8	2E-8	4E-13	2E-8	7E-8	< 1
Total by pathway	9E-3	3E-8	6E-8	1E-8	9E-8		
% Contribution by pathway	100	< 1	< 1	< 1	< 1		
Scenario Total						9E-3	

Children--Tables 6-15 and 6-16 illustrate the average and reasonable maximum noncarcinogenic risk for children, respectively. The hazard index was 9E-3 for both average and reasonable maximum exposure. Manganese contributed the majority (99% for both average and reasonable maximum) of the chemical-specific risk. Inhalation was responsible for virtually all of the pathway-specific risks.

6.5.6 Risk Characterization for the Present On-Site Worker Exposure Scenario

This scenario addresses pathways of exposure considered to be complete for an on-site worker at the present time. Surficial and deep soil samples were taken at the site. Laboratory analyses detected metals at depths ranging from 0 to 60 feet. Organics were also detected at the site, however, many of the results (all of those at depth) were below the RL or less than five times the RL, making the concentrations of these contaminants uncertain. There is little or no evidence of disturbances by humans in the area and there are currently no invasive activities at the site. In most cases, the contaminated soil was below the rubble pile. The rubble pile was not included in this assessment and, therefore, direct human contact with contaminants in the soil is currently unlikely.

The present on-site worker scenario assumes exposure to site-related contaminants via inhalation of contaminants emitted to the atmosphere above the site. Exposure concentrations were based on predicted concentrations at the site perimeter estimated from measured concentrations in surficial and deep soil samples taken from soil borings within the confines of the landfill. Concentrations of contaminants in the air are expected to be highest at this location.

On-site workers were assumed to be adults. Noncarcinogenic and carcinogenic effects were evaluated with both average and reasonable maximum exposure parameters. Noncarcinogenic effects were evaluated assuming both chronic (25 years) and subchronic (7 years) exposures.

Table 6-15

Average Non-Cancer Hazard Index Summary Off-Site Residential Child - Present
Landfill No. 25, CAFB, Clovis, New Mexico

	Inhalation of Ambient Air	Ingestion of Fruits	Ingestion of Vegetables	Ingestion of Meat	Ingestion of Milk	Total	% Contribution
4,4'-DDT	0E+0	2E-12	3E-12	3E-11	3E-11	7E-11	< 1
Arsenic	0E+0	4E-9	5E-8	4E-9	5E-10	6E-8	< 1
Fluoranthene	0E+0	5E-13	9E-13	5E-14	7E-14	2E-12	< 1
Heptachlor	0E+0	4E-12	7E-12	2E-12	3E-12	2E-11	< 1
Heptachlor epoxide	0E+0	3E-11	5E-11	2E-11	2E-11	1E-10	< 1
Manganese	9E-3	2E-9	4E-10	1E-12	6E-12	9E-3	99
Methylene chloride	5E-6	0E+0	0E+0	2E-16	3E-16	5E-6	< 1
Pyrene	0E+0	5E-13	8E-13	2E-17	2E-13	1E-12	< 1
Thallium	0E+0	3E-10	6E-9	1E-12	2E-8	2E-8	< 1
Toluene	4E-6	0E+0	0E+0	1E-16	5E-15	4E-6	< 1
Vanadium	0E+0	5E-9	2E-8	2E-12	3E-8	5E-8	< 1
Zinc	0E+0	5E-8	3E-8	1E-13	2E-8	1E-7	< 1
Total by pathway	9E-3	6E-8	1E-7	4E-9	7E-8		
% Contribution by pathway	100	< 1	< 1	< 1	< 1		
Scenario Total						9E-3	

Table 6-16

Reasonable Maximum Non-Cancer Hazard Index Summary Off-Site Residential Child - Present
Landfill No. 25, CAFB, Clovis, New Mexico

	Inhalation of Ambient Air	Ingestion of Fruits	Ingestion of Vegetables	Ingestion of Meat	Ingestion of Milk	Total	% Contribution
4,4'-DDT	0E+0	4E-12	7E-12	2E-10	2E-10	4E-10	< 1
Arsenic	0E+0	1E-8	1E-7	3E-8	3E-9	2E-7	< 1
Fluoranthene	0E+0	1E-12	3E-12	4E-13	5E-13	5E-12	< 1
Heptachlor	0E+0	9E-12	2E-11	2E-11	2E-11	6E-11	< 1
Heptachlor epoxide	0E+0	7E-11	1E-10	1E-10	1E-10	4E-10	< 1
Manganese	9E-3	3E-9	9E-10	1E-11	4E-11	9E-3	99
Methylene chloride	5E-6	0E+0	0E+0	2E-15	2E-15	5E-6	< 1
Pyrene	0E+0	1E-12	2E-12	1E-16	1E-12	4E-12	< 1
Thallium	0E+0	8E-10	2E-9	8E-12	1E-7	1E-7	< 1
Toluene	4E-6	0E+0	0E+0	9E-16	3E-14	4E-6	< 1
Vanadium	0E+0	1E-8	4E-8	2E-11	2E-7	3E-7	< 1
Zinc	0E+0	1E-7	9E-8	1E-12	1E-7	3E-7	< 1
Total by pathway	9E-3	1E-7	3E-7	3E-8	4E-7		
% Contribution by pathway	100	< 1	< 1	< 1	< 1		
Scenario Total						9E-3	

6.5.6.1 Carcinogenic Effects

Tables 6-17 and 6-18 show the carcinogenic risk resulting from average and reasonable maximum on-site worker exposure, respectively. For average exposure, the risk value was 7E-8. The risk value associated with reasonable maximum on-site worker exposure was 4E-8. Both of these risk values are below the Superfund site remediation goal. Inhalation of arsenic accounts for 96% of the chemical-specific risk for both average and reasonable maximum exposure scenarios.

6.5.6.2 Noncarcinogenic Effects

Tables 6-19 and 6-20 illustrate the noncarcinogenic risks resulting from average and reasonable maximum on-site worker chronic exposure scenarios, respectively. Tables 6-21 and 6-22 characterize the noncarcinogenic risks resulting from average and reasonable maximum on-site worker subchronic exposure scenarios, respectively. The hazard index for both the average chronic and subchronic exposure scenarios was 7E-3. The hazard index associated with the reasonable maximum chronic and subchronic exposure scenarios 4E-2. Inhalation of manganese was responsible for 99% of the total risk associated with average and reasonable maximum chronic and subchronic exposures.

6.5.7 Risk Characterization for the Future Off-Site Residential Exposure Scenario

This scenario addresses pathways of exposure considered to be complete for off-site residents at a point in the future, assuming that contaminants originating from Landfill No. 25 migrate to the groundwater. Although groundwater samples were not taken during the 1992 sampling event, groundwater modeling based on soil contaminant concentrations found at Landfill No. 25 indicate that future contamination of the groundwater with contaminants from Landfill No. 25 is possible. The time estimated for contaminants to leach into the groundwater is 173 years, and based on current pumping rates, the aquifer is unlikely to be serving as a source of groundwater at that time.

Table 6-17

Average Cancer Risk On-Site Worker - Present
Landfill No. 25, CAFB, Clovis, New Mexico

	Inhalation of Ambient Air	Total	% Contribution
4,4'-DDT	8E-12	8E-12	< 1
Arsenic	6E-8	6E-8	96
Benzene	3E-10	3E-10	< 1
Benzo(a)pyrene	4E-10	4E-10	< 1
beta-BHC	5E-12	5E-12	< 1
Heptachlor	1E-11	1E-11	< 1
Heptachlor epoxide	3E-11	3E-11	< 1
Methylene chloride	2E-9	2E-9	3
Total by pathway	7E-8		
% Contribution by pathway	100		
Scenario Total		7E-8	

Table 6-18

Reasonable Maximum Cancer Risk On-Site Worker - Present
Landfill No. 25, CAFB, Clovis, New Mexico

	Inhalation of Ambient Air	Total	% Contribution
4,4'-DDT	4E-11	4E-11	< 1
Arsenic	4E-7	4E-7	96
Benzene	2E-9	2E-9	< 1
Benzo(a)pyrene	2E-9	2E-9	< 1
beta-BHC	3E-11	3E-11	< 1
Heptachlor	7E-11	7E-11	< 1
Heptachlor epoxide	2E-10	2E-10	< 1
Methylene chloride	1E-8	1E-8	3
Total by pathway	4E-7		
% Contribution by pathway	100		
Scenario Total		4E-7	

Table 6-19

Average Non-Cancer Hazard Index Summary On-Site Worker - Chronic Landfill No. 25 CAFB, Clovis, New Mexico

	Inhalation of Ambient Air	Total	% Contribution
Manganese	7E-3	7E-3	99
Methylene chloride	4E-6	4E-6	< 1
Toluene	3E-6	3E-6	< 1
Total by pathway	7E-3		
% Contribution by pathway	100		
Scenario Total		7E-3	

Table 6-20

Reasonable Maximum Non-Cancer Hazard Index Summary
On-Site Worker - Chronic
Landfill No. 25, CAFB, Clovis, New Mexico

	Inhalation of Ambient Air	Total	% Contribution
Manganese	4E-2	4E-2	99
Methylene chloride	2E-5	2E-5	< 1
Toluene	2E-5	2E-5	< 1
Total by pathway	4E-2		
% Contribution by pathway	100		
Scenario Total		4E-2	

Table 6-21

Average Non-Cancer Hazard Index Summary
On-Site Worker - Subchronic
Landfill No. 25, CAFB, Clovis, New Mexico

	Inhalation of Ambient Air	Total	% Contribution
Manganese	7E-3	7E-3	99
Methylene chloride	4E-6	4E-6	< 1
Toluene	6E-7	6E-7	< 1
Total by pathway	7E-3		
% Contribution by pathway	100		
Scenario Total		7E-3	

Table 6-22

Reasonable Maximum Non-Cancer Hazard Index Summary
On-Site Worker - Subchronic
Landfill No. 25, CAFB, Clovis, New Mexico

	Inhalation of Ambient Air	Total	% Contribution
Manganese	4E-2	4E-2	99
Methylene chloride	2E-5	2E-5	< 1
Toluene	4E-6	4E-6	< 1
Total by pathway	4E-2		
% Contribution by pathway	100		
Scenario Total		4E-2	

However, groundwater ingestion, as well as dermal contact and inhalation of vapor phase chemicals during domestic water use pathways were included in this assessment in order to reflect the limited potential for future exposure to contaminants present at Landfill No. 25 via groundwater. The scenario is based on predicted future lifetime exposures using current on-site contaminant concentrations in the soil and assuming that the release of contaminants will remain constant over time.

The future off-site residential scenario assumes exposure to contaminants via five exposure pathways: 1) ingestion of contaminated drinking water; 2) inhalation of vapor phase chemicals while showering; 3) dermal contact with residential water; 4) ingestion of fruits and vegetables irrigated with contaminated groundwater; and 5) ingestion of meat and milk from farm animals exposed to contaminants in the groundwater and contaminated feed crops.

Exposure concentrations are based on: 1) predicted contaminant concentrations in groundwater (off-site) based on measured concentrations in deep soils and sediments and assuming steady state conditions; 2) predicted concentrations in the shower, based on predicted groundwater concentrations; 3) calculated uptake and accumulation in fruits, vegetables, meat, and milk, based on predicted groundwater concentrations; and 4) predicted contaminant concentrations in ambient air, based on soil concentrations.

Carcinogenic effects were estimated for adults only, using average and reasonable maximum exposure parameters. Noncarcinogenic effects were estimated for both adults and children, assuming average and reasonable maximum exposure parameters.

6.5.7.1 Carcinogenic Effects

Adults--The average and reasonable maximum carcinogenic risks for future off-site residential adults are presented in Tables 6-23 and 6-24, respectively. The total cancer risk for average exposure was 2E-9. The reasonable maximum cancer risk for this scenario was 1E-8. The cancer risks for average and reasonable maximum exposure are below the Superfund site remediation risk range goal for carcinogens. Dermal contact with benzo(a)pyrene while showering is responsible for the majority (83%) of the pathway- and (100%) chemical-specific risk for both average and reasonable maximum exposure.

6.5.7.2 Noncarcinogenic Effects

Adults--Tables 6-25 and 6-26 characterize the average and reasonable maximum noncarcinogenic risks for future off-site adults, respectively. The total hazard index is 2E-1 for average exposure and 3E-1 for reasonable maximum exposure. Both values are below the Superfund site remediation goal of 1 for noncarcinogens. These hazard indices indicate that the noncarcinogenic risks for future off-site residential adults are acceptable. Arsenic is responsible for the majority of the chemical-specific risks for the average and reasonable maximum exposures (80% and 81%, respectively). Manganese contributed 19% and 18% of the chemical-specific risk for the average and reasonable maximum exposure scenarios, respectively. The groundwater ingestion pathway contributed most of the pathway-specific risk for both average and reasonable maximum exposure (99% and 96%, respectively).

Children--The average and reasonable maximum noncarcinogenic risk for children living off-site under future exposure conditions are presented in Tables 6-27 and 6-28, respectively. The hazard indices for both the average and reasonable maximum exposure scenarios were 6E-1. Again, arsenic caused the majority of the chemical-specific risk (80% and 81% of the average and reasonable maximum exposure, respectively). Manganese was responsible for 19% and 18% of the chemical-specific risks for the

Table 6-23

Average Cancer Risk Off-Site Residential Adult - Future
Landfill No. 25, CAFB, Clovis, New Mexico

	Ingestion of Groundwater	Inhalation while Showering	Dermal Contact while Showering	Ingestion of Fruits	Ingestion of Vegetables	Ingestion of Meat	Ingestion of Milk	Total	% Contribution
4,4'-DDD	2E-23	0E+0	4E-23	2E-29	4E-29	2E-24	9E-25	6E-23	< 1
4,4'-DDE	1E-22	0E+0	4E-22	2E-28	4E-28	5E-24	3E-24	5E-22	< 1
4,4'-DDT	2E-19	3E-25	2E-18	1E-25	2E-25	3E-20	2E-20	2E-18	< 1
Benzo(a)pyrene	2E-10	3E-16	1E-9	2E-16	3E-16	5E-11	3E-11	2E-9	100
Benzo(b)fluoranthene	6E-36	0E+0	1E-35	4E-42	7E-42	2E-36	1E-36	2E-35	< 1
Benzo(k)fluoranthene	2E-88	0E+0	3E-91	1E-94	2E-94	1E-88	8E-89	4E-88	< 1
Heptachlor	3E-22	7E-28	3E-23	1E-27	2E-27	1E-27	9E-28	4E-22	< 1
Heptachlor epoxide	8E-22	2E-27	8E-23	2E-27	4E-27	3E-27	2E-27	9E-22	< 1
Methylene chloride	3E-44	1E-50	3E-45	0E+0	0E+0	8E-54	5E-54	4E-44	< 1
Pyrene	2E-43	0E+0	2E-46	6E-49	1E-48	3E-49	2E-49	1E-43	< 1
Total by pathway	2E-10	3E-16	1E-9	2E-16	3E-16	5E-11	3E-11		
% Contribution by pathway	12	< 1	83	< 1	< 1	3	2		
Scenario Total								2E-9	

Table 6-24

Reasonable Maximum Cancer Risk Off-Site Residential Adult - Future
Landfill No. 25, CAFB, Clovis, New Mexico

	Ingestion of Groundwater	Inhalation while Showering	Dermal Contact while Showering	Ingestion of Fruits	Ingestion of Vegetables	Ingestion of Meat	Ingestion of Milk	Total	% Contribution
4,4'-DDD	8E-23	0E+0	3E-22	1E-28	2E-28	2E-23	1E-23	4E-22	< 1
4,4'-DDE	5E-22	0E+0	3E-21	1E-27	2E-27	7E-23	4E-23	3E-21	< 1
4,4'-DDT	7E-19	4E-24	1E-17	7E-25	1E-24	5E-19	2E-19	1E-17	< 1
Benzo(a)pyrene	9E-10	4E-15	9E-9	8E-16	2E-15	7E-10	4E-10	1E-8	100
Benzo(b)fluoranthene	3E-35	0E+0	1E-34	2E-41	4E-41	3E-35	2E-35	2E-34	< 1
Benzo(k)fluoranthene	1E-87	0E+0	2E-90	5E-94	9E-94	2E-87	1E-87	4E-87	< 1
Heptachlor	2E-21	9E-27	2E-22	5E-27	1E-26	2E-26	1E-26	2E-21	< 1
Heptachlor epoxide	4E-21	2E-26	5E-22	1E-26	2E-26	4E-26	2E-26	4E-21	< 1
Methylene chloride	2E-43	2E-49	2E-44	0E+0	0E+0	1E-52	7E-53	2E-43	< 1
Pyrene	7E-43	0E+0	1E-45	3E-48	6E-48	5E-48	3E-48	7E-43	< 1
Total by pathway	9E-10	4E-15	9E-9	8E-16	1E-15	7E-10	4E-10		
% Contribution by pathway	8	< 1	83	< 1	< 1	6	3		
Scenario Total								1E-8	

Table 6-25

Average Non-Cancer Hazard Index Summary Off-Site Residential Adult - Future
Landfill No. 25, CAFB, Clovis, New Mexico

	Ingestion of Groundwater	Inhalation while Showering	Dermal Contact while Showering	Ingestion of Fruits	Ingestion of Vegetables	Ingestion of Meat	Ingestion of Milk	Total	% Contribution
4,4'-DDT	7E-15	0E+0	8E-14	6E-21	1E-20	1E-15	9E-16	9E-14	< 1
Arsenic	1E-1	0E+0	8E-05	2E-8	2E-7	2E-3	1E-4	1E-1	80
Fluoranthene	2E-25	0E+0	1E-25	1E-30	3E-30	3E-5	2E-5	5E-5	< 1
Heptachlor	1E-18	0E+0	1E-19	4E-24	6E-24	4E-24	3E-24	1E-18	< 1
Heptachlor epoxide	5E-17	0E+0	5E-18	2E-22	3E-22	2E-22	2E-22	6E-17	< 1
Manganese (food)	0E+0	0E+0	0E+0	7E-9	6E-8	5E-8	8E-8	2E-7	< 1
Manganese (water)	4E-2	0E+0	5E-5	0E+0	0E+0	0E+0	0E+0	4E-2	19
Methylene chloride	6E-40	8E-47	5E-41	0E+0	0E+0	1E-49	9E-50	6E-40	< 1
Pyrene	7E-41	0E+0	9E-44	3E-46	5E-46	1E-46	1E-46	7E-41	< 1
Thallium	3E-4	0E+0	4E-7	1E-11	2E-10	8E-6	8E-7	3E-4	< 1
Vanadium	7E-4	0E+0	9E-7	2E-10	7E-10	9E-7	1E-6	7E-4	< 1
Zinc	6E-4	0E+0	3E-7	6E-8	4E-8	6E-8	2E-8	6E-4	< 1
Total by pathway	2E-1	8E-47	1E-4	9E-8	3E-7	2E-3	2E-4		
% Contribution by pathway	99	< 1	< 1	< 1	< 1	1	< 1		
Scenario Total								2E-1	

Table 6-26

Reasonable Maximum Non-Cancer Hazard Index Summary Off-Site Residential Adult - Future Landfill No. 25, CAFB, Clovis, New Mexico

	Ingestion of Groundwater	Inhalation while Showering	Dermal Contact while Showering	Ingestion of Fruits	Ingestion of Vegetables	Ingestion of Meat	Ingestion of Milk	Total	% Contribution
4,4'-DDT	1E-14	0E+0	2E-13	9E-21	2E-20	6E-15	3E-15	2E-13	< 1
Arsenic	2E-1	0E+00	2E-4	3E-8	4E-7	1E-2	5E-4	2E-1	81
Fluoranthene	3E-25	0E+0	2E-25	2E-30	4E-30	1E-4	7E-5	2E-4	< 1
Heptachlor	2E-18	0E+0	2E-19	5E-24	1E-23	2E-23	1E-23	2E-18	< 1
Heptachlor epoxide	7E-17	0E+0	1E-17	2E-22	5E-22	8E-22	5E-22	8E-17	< 1
Manganese (food)	0E+0	0E+0	0E+0	1E-8	9E-8	2E-7	3E-7	6E-7	1
Manganese (water)	5E-2	0E+0	1E-4	0E+0	0E+0	0E+0	0E+0	5E-2	18
Methylene chloride	8E-40	3E-46	1E-40	0E+0	0E+0	6E-49	3E-49	9E-40	< 1
Pyrene	9E-41	0E+0	2E-43	4E-46	8E-46	6E-46	4E-46	9E-41	< 1
Thallium	4E-4	0E+0	8E-7	2E-11	3E-10	4E-5	3E-6	4E-4	< 1
Vanadium	1E-03	0E+0	2E-6	3E-10	1E-9	4E-6	5E-6	1E-3	< 1
Zinc	9E-4	0E+0	7E-7	9E-8	6E-8	3E-7	2E-8	9E-4	< 1
Total by pathway	3E-1	3E-46	3E-4	2E-7	6E-7	1E-2	6E-4		
% Contribution by pathway	96	< 1	< 1	< 1	< 1	4	< 1		
Scenario Total								3E-1	

Table 6-27

Average Non-Cancer Hazard Index Summary Off-Site Residential Child - Future
Landfill No. 25, CAFB, Clovis, New Mexico

	Ingestion of Groundwater	Inhalation while Showering	Dermal Contact while Showering	Ingestion of Fruits	Ingestion of Vegetables	Ingestion of Meat	Ingestion of Milk	Total	% Contribution
4,4'-DDT	2E-14	0E+0	3E-13	3E-20	5E-20	3E-15	4E-15	3E-13	< 1
Arsenic	5E-1	0E+0	3E-4	1E-7	1E-6	5E-3	6E-4	5E-1	80
Fluoranthene	8E-25	0E+0	4E-25	7E-30	1E-29	7E-5	9E-5	2E-4	< 1
Heptachlor	4E-18	0E+0	4E-19	2E-23	3E-23	1E-23	1E-23	4E-18	< 1
Heptachlor epoxide	2E-16	0E+0	2E-17	8E-22	1E-21	4E-22	6E-22	2E-16	< 1
Manganese (food)	0E+0	0E+0	0E+0	3E-8	3E-7	1E-7	4E-7	8E-7	< 1
Manganese (water)	1E-1	0E+0	2E-4	0E+0	0E+0	0E+0	0E+0	1E-1	19
Methylene chloride	2E-39	2E-46	2E-40	0E+0	0E+0	3E-49	4E-49	2E-39	< 1
Pyrene	2E-40	0E+0	3E-43	1E-45	2E-45	3E-46	5E-46	2E-40	< 1
Thallium	9E-4	0E+0	1E-6	5E-11	9E-10	2E-5	4E-6	9E-4	< 1
Vanadium	2E-3	0E+0	3E-6	1E-9	3E-9	2E-6	7E-6	2E-3	< 1
Zinc	2E-3	0E+0	1E-6	3E-7	2E-7	1E-7	9E-8	2E-3	< 1
Total by pathway	6E-1	2E-46	5E-4	4E-7	2E-6	5E-3	7E-4		
% Contribution by pathway	99	< 1	< 1	< 1	< 1	< 1	< 1		
Scenario Total								6E-1	

Table 6-28

Reasonable Maximum Non-Cancer Hazard Index Summary Off-Site Residential Child - Future Landfill No. 25, CAFB, Clovis, New Mexico

	Ingestion of Groundwater	Inhalation while Showering	Dermal Contact while Showering	Ingestion of Fruits	Ingestion of Vegetables	Ingestion of Meat	Ingestion of Milk	Total	% Contribution
4,4'-DDT	2E-14	0E+0	3E-13	4E-20	8E-20	1E-14	2E-14	4E-13	< 1
Arsenic	5E-1	0E+0	3E-4	2E-7	2E-6	2E-2	2E-3	5E-1	81
Fluoranthene	8E-25	0E+0	4E-25	1E-29	2E-29	3E-4	3E-24	6E-4	< 1
Heptachlor	4E-18	0E+0	4E-19	2E-23	5E-23	4E-23	5E-23	4E-18	< 1
Heptachlor epoxide	2E-16	0E+0	2E-17	1E-21	2E-21	2E-21	2E-21	2E-16	< 1
Manganese (food)	0E+0	0E+0	0E+0	5E-8	5E-7	5E-7	1E-6	2E-6	< 1
Manganese (water)	1E-1	0E+0	2E-4	0E+0	0E+0	0E+0	0E+0	1E-1	18
Methylene chloride	2E-39	3E-46	2E-40	0E+0	0E+0	1E-48	2E-48	2E-39	< 1
Pyrene	2E-40	0E+0	3E-43	2E-45	4E-45	1E-45	2E-45	2E-40	< 1
Thallium	9E-4	0E+0	1E-6	8E-11	1E-9	8E-5	1E-5	1E-3	< 1
Vanadium	2E-3	0E+0	3E-6	1E-9	5E-9	9E-6	2E-5	2E-3	< 1
Zinc	2E-3	0E+0	1E-6	4E-7	3E-7	6E-7	3E-7	2E-3	< 1
Total by pathway	6E-1	3E-46	5E-4	6E-6	3E-6	2E-2	3E-3		
% Contribution by pathway	96	< 1	< 1	< 1	< 1	4	< 1		
Scenario Total								6E-1	

average and reasonable maximum exposures, respectively. Ingestion of groundwater contributed the majority of the pathway-specific risks for average (99%) and reasonable maximum (96%) exposure scenarios.

6.5.8 Risk Characterization for the Future On-Site Construction Worker Exposure Scenario

This scenario addresses pathways of exposure considered to be complete for an on-site construction worker at some time in the future. It was assumed that on-site contamination will not increase. Currently, there are no on-going invasive activities being conducted at the site. However, CAFB is an expanding base and it is possible that land use at the site will change significantly in the future. In addition, expansion of the existing munitions facility onto the northern portion of Landfill No. 25 has been proposed. The future on-site construction worker scenario assumes exposure to site-related contaminants via three pathways: 1) inhalation of contaminants in the air (volatilized chemicals or fugitive dust generation); 2) incidental ingestion of contaminated soil; and 3) dermal contact with contaminated soil.

Carcinogenic effects were not evaluated for this scenario because the construction activity will be of subchronic duration (seven years or less). The hypothetical construction was assumed to take place over a two year period. Noncarcinogenic effects were evaluated with both average and reasonable maximum exposure parameters.

6.5.8.1 Noncarcinogenic Effects

Tables 6-29 and 6-30 illustrate the noncarcinogenic risks resulting from average and reasonable maximum on-site construction worker chronic exposure scenarios, respectively. The hazard indices for the average and reasonable maximum exposure scenarios were 4E-2 and 3E-1, respectively. Manganese was responsible for the majority

Table 6-29

Average Non-Cancer Hazard Index Summary On-Site Construction Worker - Future
Landfill No. 25, CAFB, Clovis, New Mexico

	Inhalation of Volatiles In Ambient Air	Ingestion of Soil	Dermal Contact with Soil	Total	% Contribution
4,4'-DDT	0E+0	3E-6	3E-5	4E-5	< 1
Arsenic	0E+0	4E-3	4E-4	5E-3	12
Diesel	0E+0	5E-4	5E-3	6E-3	14
Fluoranthene	0E+0	3E-10	8E-10	1E-9	< 1
Heptachlor	0E+0	5E-7	5E-6	5E-6	< 1
Heptachlor epoxide	0E+0	2E-5	2E-4	2E-4	< 1
Manganese	2E-02	4E-4	4E-4	2E-2	62
MCPP	0E+0	2E-4	2E-3	2E-3	5
Methylene chloride	3E-6	5E-8	5E-7	4E-6	< 1
Pyrene	0E+0	3E-10	1E-9	1E-9	< 1
Toluene	6E-7	2E-9	2E-8	6E-7	< 1
Vanadium	0E+0	1E-3	1E-3	2E-3	6
Zinc	0E+0	4E-5	4E-5	8E-5	< 1
Total by pathway	2E-02	7E-3	9E-3		
% Contribution by pathway	60	17	23		
Scenario Total				4E-2	

Table 6-30

Reasonable Maximum Non-Cancer Hazard Index Summary On-Site Construction Worker - Future Landfill No. 25, CAFB, Clovis, New Mexico

	Inhalation of Volatiles in Ambient Air	Ingestion of Soil	Dermal Contact with Soil	Total	% Contribution
4,4'-DDT	0E+0	3E-5	8E-5	1E-4	< 1
Arsenic	0E+0	4E-02	1E-03	4E-02	17
Diesel	0E+0	5E-3	1E-2	2E-2	7
Fluoranthene	0E+0	3E-9	2E-9	5E-9	< 1
Heptachlor	0E+0	5E-6	1E-5	2E-5	< 1
Heptachlor epoxide	0E+0	2E-4	5E-4	7E-4	< 1
Manganese	2E-1	4E-3	1E-3	2E-1	67
MCPP	0E+0	2E-3	4E-3	6E-3	2
Methylene chloride	2E-5	5E-7	1E-6	3E-5	< 1
Pyrene	0E+0	3E-9	3E-9	6E-9	< 1
Toluene	4E-6	2E-8	4E-8	4E-6	< 1
Vanadium	0E+0	1E-2	3E-3	1E-2	5
Zinc	0E+0	4E-4	1E-4	5E-4	< 1
Total by pathway	2E-1	7E-2	2E-2		
% Contribution by pathway	65	26	9		
Scenario Total				3E-1	

of the chemical-specific risks for both the average (62%) and reasonable maximum (67%) exposure scenarios. The inhalation pathway caused most of the pathway-specific risks (60% and 65% for average and reasonable maximum, respectively).

6.5.9 Major Factors Driving Risks

The results of this baseline risk assessment should not be interpreted as a characterization of absolute risk. The hazard index estimates discussed below highlight potential sources of risk at the site. This risk assessment was based on conservative exposure assumptions and modeling parameters and may, therefore, overestimate the magnitude of risk associated with Landfill No. 25. None of the estimated cancer risks for the various exposure pathways exceed the Superfund site remediation goal of a cancer risk of 10^{4} (1 in 10,000) to 10^{6} (1 in 1,000,000). These results indicate that, based on currently available information and the assumptions used in this risk assessment, contaminants below the rubble pile at Landfill No. 25 pose negligible carcinogenic health risks presently and in the future. The results also indicate that the risk of noncarcinogenic effects are within acceptable limits as well. Tables 6-31 and 6-32 identify the key chemicals and exposure pathways that drive the carcinogenic and noncarcinogenic risk, respectively. Discussions of the magnitude and nature of risks that potentially exist at Landfill No. 25 and the major sources of uncertainty affecting the risk estimates are presented below.

6.5.9.1 Carcinogenic Effects

All estimated cancer risks are below the Superfund site remediation cancer risk goal of 1 in 1,000,000 (1E-6) considered to be the de minimus value. The risk associated with inhalation of arsenic in the form of fugitive dust drives the present residential adult and on-site worker cancer risks. Dermal contact with benzo(a)pyrene while showering drives the future residential adult cancer risk. These results indicate that based on currently available information and the assumptions used in this risk assessment,

Table 6-31

Identification of Key Chemicals and Exposure Pathways that Drive the Carcinogenic Risk Assessment for Landfill No. 25, CAFB, Clovis, New Mexico

Scenario	Total Scenario Risk	Chemicals that Contribute Chemical-Specific Risk (% Contribution)	Exposure Pathways that Contribute Pathway-Specific Risk (% Contribution)
Off-Site Residential (Present)			
- Adult, Average	3E-8	Arsenic (88)	Inhaltion of fugitive dust (100)
- Adult, Reasonable Maximum	1E-7	Arsenic (88)	Inhalation of fugitive dust (100)
On-Site Worker (Present)			
- Adult, Average	7E-8	Arsenic (96)	Inhalation of fugitive dust (100)
- Adult, Reasonable Maximum	4E-7	Arsenic (96)	Inhalation of fugitive dust (100)
Off-Site Residential (Future)			
- Adult, Average	2E-9	Benzo(a)pyrene (100)	Dermal contact while showering (83)
- Adult, Reasonable Maximum	1E-8	Benzo(a)pyrene (100)	Dermal contact while showering (83)

Table 6-32

Identification of Key Chemicals and Exposure Pathways that Drive the Noncarcinogenic Risk Assessment for Landfill No. 25, CAFB, Clovis, New Mexico

Scenario	Total Scenario Risk	Chemicals that Contribute Chemical-Specific Risk (% Contribution)		Exposure Pathways that Contribute Pathway-Specific Risk (% Contribution)	
Off-Site Residential (Present)					
- Adult, Average	9E-3	Manganese	(99)	Inhalation of fugitive dust	(100)
- Adult, Reasonable Maximum	9E-3	Manganese	(99)	Inhalation of fugitive dust	(100)
- Child, Average	9E-3	Manganese	(99)	Inhalation of fugitive dust	(100)
- Child, Reasonable Maximum	9E-3	Manganese	(99)	Inhalation of fugitive dust	(100)
On-Site Worker (Present)					
- Adult, Average					
Chronic	7E-3	Manganese	(99)	Inhalation of fugitive dust	(100)
Subchronic	7E-3	Manganese	(99)	Inhalation of fugitive dust	(100)
- Adult, Reasonable Maximum					
Chronic	4E-2	Manganese	(99)	Inhalation of fugitive dust	(100)
Subchronic	4E-2	Manganese	(99)	Inhalation of fugitive dust	(100)

Table 6-32

(Continued)

Scenario	Total Scenario Risk	Chemicals that Contribute Chemical-Specific Risk (% Contribution)		Exposure Pathways that Contribute Pathway-Specific Risk (% Contribution)	
Off-Site Residential (Future)					
- Adult, Average	2E-1	Arsenic	(80)	Ingestion of groundwater	(99)
- Adult, Reasonable Maximum	3E-1	Arsenic	(81)	Ingestion of groundwater	(96)
- Child, Average	6E-1	Arsenic	(80)	Ingestion of groundwater	(99)
- Child, Reasonable Maximum	6E-1	Arsenic	(81)	Ingestion of groundwater	(96)
On-Site Construction Worker (Future)					
- Adult, Average Subchronic	4E-2	Manganese	(62)	Inhalation of fugitive dust	(60)
- Adult, Reasonable Maximum Subchronic	3E-1	Manganese	(67)	Inhalation of fugitive dust	(65)

the contaminants below the rubble pile at Landfill No. 25 pose negligible carcinogenic health risks to human populations that may be exposed. It should be noted that the risk assessment was based on subsurface contamination and not the rubble pile itself.

6.5.9.2 Noncarcinogenic Effects

All of the estimated noncarcinogenic hazard indices, were below the Superfund site remediation goal of 1.0 for noncarcinogens. The risk associated with the average and reasonable maximum future residential adult scenarios were 2E-1 and 3E-1, respectively. Arsenic is responsible for the majority of the chemical-specific risk for both the average (80%) and the reasonable maximum (81%) exposure scenarios. Ingestion of groundwater was responsible for 99% and 96% of the average and reasonable maximum pathway-specific risks, respectively. The average and reasonable maximum future residential child scenarios both have associated risks of 6E-1. Again, ingestion of arsenic in the groundwater was responsible for the majority of the risk (approximately 80% of the average and reasonable maximum exposure scenarios). These results indicate that, based on currently available information and the assumptions used in this risk assessment, the contaminants below the rubble pile at Landfill No. 25 pose negligible noncarcinogenic health risks to human populations that may be exposed. Again, the risk assessment was based on subsurface contamination and not on the contaminants or concentrations found within the rubble pile itself.

6.5.9.3 Nature of Potential Risks at Landfill No. 25

All of the carcinogenic and noncarcinogenic health risks estimated in this risk assessment were below the de minimis values (1 for noncarcinogens and 1E-6 for carcinogens) set forth by the NCP for use in making risk management decisions and as Superfund site remediation goals. These results indicate that, based on currently available information and the assumptions used in the risk assessment, the contaminants below the rubble pile at Landfill No. 25 pose negligible human health risks.

6.5.10 Uncertainties Associated with Risk Characterization

Risk characterization results are not actual representations of risk but rather conditional estimates of risk which should be interpreted in light of the considerable number of assumptions required to quantify exposure, intake, and dose-response. Uncertainties associated with identification of chemicals of potential concern, exposure assessment, and toxicity assessment all contribute to the level of confidence that can be placed on the risk characterization results. The uncertainties associated with these steps are discussed in previous sections of the report and are summarized in Table 6-33 to facilitate interpretation of the risk characterization.

The most significant uncertainties associated with risk characterization are the limitations of analytical methods and fate and transport models in addition to the lack of verifiable toxicity values. The majority of the tasks performed during risk assessment utilize conservative assumptions which tend to overestimate risk. However, the limitations associated with analytical methods and the lack of USEPA-verified toxicity values for some chemicals could result in underestimation of risks. Alternately, many of the uncertainties associated with risk assessment have the potential to either over- or underestimate the risk associated with exposure. Table 6-33 summarizes the uncertainties associated with the risk characterization and their potential impact.

6.6 Environmental Evaluation

This section presents a qualitative evaluation of potential adverse impacts of contamination from Landfill No. 25 on critical habitats and endangered species in the area. A description of the site and the nature and extent of the contaminants of concern were presented earlier in this report. Information for this qualitative evaluation was adapted from an ecological risk assessment of CAFB prepared by Woodward-Clyde and Consultants (Woodward-Clyde, 1992b).

Table 6-33

Uncertainties Associated with Risk Assessment and Potential Impact on Risk Characterization Landfill No. 25, CAFB, Clovis, New Mexico

Uncertainty	Effect on Risk Characterization		
	Potential for Overestimation	Potential for Underestimation	Potential for Over- or Underestimation
Environmental Sampling/Analysis			
• Sufficient samples may not have been taken to fully characterize the rubble and the lateral landfill boundaries			Moderate
• Sufficient background samples may not have been taken to adequately define background concentrations of inorganics	Moderate		
• Systematic or random errors in chemical analyses may yield erroneous data			Low
Fate/Transport Modeling			
• Use of ISCST2 to estimate contaminant concentrations in the air for on-site workers and off-site residents	Moderate/High		
• Use of a box model to estimate contaminant concentrations in the air for on-site construction workers	Moderate/High		
• Use of estimated K_d values as opposed to site-specific data for groundwater modeling			Moderate/High

Table 6-33
(Continued)

Uncertainty	Effect on Risk Characterization		
	Potential for Overestimation	Potential for Underestimation	Potential for Over- or Underestimation
Exposure Assumptions			
• Standard assumptions regarding body weight, period exposed, life expectancy, population characteristics, and lifestyle may not be representative actual exposure conditions			Moderate
• Amount of media intake is assumed to be constant and representative of the exposed population			Moderate
• Assumption of daily lifetime exposure for residents			Moderate/High
• Use of modeled concentrations to represent exposure point concentrations	Moderate/High		
• Assumption that metals are 100% bioavailable	Moderate/High		
• Assumption that the groundwater will be available for domestic use 173 years in the future.	Moderate		

Table 6-33
(Continued)

Uncertainty	Effect on Risk Characterization		
	Potential for Overestimation	Potential for Underestimation	Potential for Over- or Underestimation
Toxicity Information			
• Lack of verified toxicity values for some chemicals and/or routes of exposure		Moderate	
• Inability to assess synergistic/antagonistic effects of simultaneous exposure to multiple contaminants			Moderate/High
• Use of toxicity values developed from studies conducted on animals at high doses	High		

6.6.1 Local Ecology

CAFB and surrounding areas are part of the High Plains physiographic province. Much of the province is natural grasslands, that have been disrupted by agricultural practices. Small trees and large shrubs are located around riparian areas and playa lakes. The areas surrounding CAFB are used for crops and livestock. Common agriculture crops grown in the area include wheat, sorghum, and alfalfa.

Landfill No. 25 is situated on the northeast end of CAFB. Landfill No. 25 is bordered on the west by Perimeter Road and immediately on the east by the CAFB ordinance area. Agricultural land lies approximately 1250 feet both east and south of the landfill. Playa Lake is located approximately 500 feet to the southeast.

A visual survey of the vegetative cover was completed during the field investigation of this project. The relatively unconsolidated debris above the firmer Ogallala sediments gives the site a somewhat different cover than adjacent parts of CAFB. Chinese Elms along with other deciduous trees are found on the northern half of the site. Their presence may be the result of increased infiltration due to the poorly consolidated debris. These trees may tap the boundary between the debris and the native soils where water infiltration is slowed. Yucca is present over the entire site. Sage and rabbitbrush are the most common shrubs. Indian rice grass, foxtail barley, and blue gramma are the most common grasses.

6.6.2 Threatened and Endangered Species

Table 6-34 lists threatened and endangered species and species of high federal concern historically inhabiting areas within CAFB and surrounding Curry County. The Baird's sparrow and the ferruginous hawk are known to inhabit this area. However, both birds are infrequent visitors in the area. The Baird's sparrow may be found in the

Table 6-34

Federal- and State-Protected Animals Potentially Occurring in the Vicinity of CAFB (Curry County), New Mexico for Landfill No. 25 CAFB, Clovis, New Mexico

Common Name	Scientific Name	Federal Status	State Status
Birds			
Baird's sparrow	*Ammodramus bairdii*		Endangered (group 2)
Bald eagle	*Haliaeetus leucocephalus*	Endangered	Endangered (group 2)
Peregrine falcon	*Falco perigrinus*	Endangered	Endangered (group 1)
Long-billed curlew	*Numenius americnus*		Endangered (group 2)
Western snowy plover	*Charadrius aleandrus nivosis*		Endangered (group 2)
Mammals			
Black-footed ferret	*Mustela nigripes*	Endangered	Possibly Extinct
Swift fox	*Vulpes velox*		Endangered (group 2)
Reptiles			
Texas horned lizard	*Phrynosoma cornutum*		Endangered (group 2)

Endangered (group 1): Species whose prospects of survival or recruitment within the state are in jeopardy.

Endangered (group 2): Species whose prospects of survival or recruitment within the state are likely to become jeopardized in the foreseeable future.

Possibly Extinct: Potentially no longer in existence in the state.

Source: Woodward-Clyde, 1992.

area from early August and departs by November. The ferruginous hawk may occasionally feed at CAFB, but does not reside there because of lack of suitable nesting habitat.

6.6.3 Other Species

Small amphibians and reptiles are known to occupy areas in and around CAFB. The pocket gopher and the deer mouse are two common small mammals found at CAFB. Both animals inhabit areas covered with small shrubs and grasses similar to those found near Landfill No. 25. Pheasant, quail, and migratory waterfowl feed on waste grains in the fields near the landfill. Waterfowl, mostly dabbler ducks, utilize the Playa Lake as a resting and feeding area during migration. The primary predators in the area are several species of raptors. Mated pairs of Mississippi kite, recently removed from New Mexico's protected species list, have been spotted on CAFB defending territory near the golf course. Occasionally, a big game animal such as the longhorn antelope has been spotted in the vicinity.

6.6.4 Selection of Indicator Species

Animals that inhabit Landfill No. 25 and utilize nearby areas such as the Playa Lake are potentially exposed to chemicals originating from the Landfill. It is not possible to assess effects on all species potentially impacted by exposure to chemicals of concern at Landfill No. 25. Ducks have been chosen as the indicator species to represent potential impacts of chemicals at the landfill on wildlife in the area. Dabbler ducks, which include gadwalls, mallards, pintails, shovelers and widgeons, make up the majority of wildlife found at CAFB. The ducks are not usually found at Landfill No. 25; however, they spend a majority of their time resting at the nearby Playa Lake and feeding in the adjacent grain fields.

6.6.5 Qualitative Risk Assessment for Potential Exposure to Wildlife

Potential exposure of ducks to contaminants originating at Landfill No. 25 is via surface water flowing downgradient to the nearby Playa Lake. Mean annual precipitation for the area is 15 inches with a low monthly average of 0.4 inches during the winter months. Contaminants of concern were detected in the surface soil. Therefore, movement of chemicals towards the Playa Lake via runoff is possible. However, due to low annual precipitation, few chemicals are likely to be carried from the landfill to the lake.

Ducks typically begin migrating through the Clovis area by late October and reach their highest numbers by mid-November. The majority of the ducks have continued southward migration by the time the lakes are frozen which is usually in the beginning of January. During mild winters, ducks can remain in the vicinity until mid-March. The average amount of time ducks spend in the area is between 1.5 to 3 months.

Considering the low precipitation and the amount of time the ducks are found in the area, the level of exposure due to contaminants found at Landfill No. 25 is likely to be low.

6.7 Conclusions

All estimated cancer risks are below the Superfund site remediation cancer risk goal of 1 in 1,000,000 (1E-6), considered to be the de minimis value used in making risk management decisions. Estimated noncarcinogenic hazard indices were below the Superfund site remediation goal of 1 for noncarcinogenic effects as well. These results indicate that, based on currently available information and the assumptions used in this risk assessment, the contaminants in the native soil at Landfill No. 25 pose negligible human health risks to populations that may be exposed currently or in the future.

Results from the qualitative evaluation of potential adverse impacts of contaminants from Landfill No. 25 on critical habitats and endangered species in the area indicate that deleterious ecological effects from site contaminants are unlikely.

7.0 CONCLUSIONS/RECOMMENDATIONS

This section highlights the results of the RFI and the Risk Assessment, makes conclusions from these results, and outlines the important considerations for determining appropriate courses of action.

7.1 Conclusions

Landfill No. 25 contains a mix of surface and subsurface rubble. The site is underlain by the Ogallala Formation that changes with depth from a well cemented sandstone with abundant caliche to an unconsolidated sand.

A total of 139 field samples were collected and analyzed. One surface sample (CAN97-17-S) was found to exceed the proposed noncarcinogenic soil action level for lead. Beryllium in background samples, as well as in some landfill samples, exceeds the proposed carcinogenic soil action level. The presence of beryllium in the background indicates that the proposed level is not appropriate for this site. One sample (CAN97-15-S) exceeded the proposed carcinogenic soil action levels for benzo(a)pyrene and benzo(b)fluoranthene. All organic results were below the proposed noncarcinogenic soil action levels.

With the exception of TICs which were detected at all depth intervals, the vertical extent of contamination has been delineated at the site. Because of the uncertainty with identification and the relatively low concentrations, TICs should not necessitate the need to drill deeper. The lateral extent of contamination is not well defined. All borings, other than one background boring, were completed within the landfill. The perimeter of the contaminated zone cannot be determined from this investigation. However, such delineation may not be necessary given the relatively minor contamination that is associated with the soil.

None of the estimated cancer risks exceed the Superfund site remediation cancer risk goal of 1 in 1,000,000 (1E-6), considered to be the de minimus value used in making risk management decisions. In addition, all of the estimated noncarcinogenic hazard indices are below the Superfund site remediation goal of 1 for noncarcinogenic effects. These results indicate that, based on currently available information and the assumptions used in the risk assessment for Landfill No. 25, the native soil below the rubble pile poses no notable human health risks.

7.2 Recommendations

The results of this investigation suggest that the native soil below the rubble at Landfill No. 25 is not contaminated. No further action is recommended for the soil.

APPENDIX I
ANALYTICAL RESULTS

RCRA FACILITY INVESTIGATION (RFI) REPORT
FINAL REPORT
SWMU NO. 97
LANDFILL NO. 25
IRP SITE LF-25

AIR FORCE PROJECT NO. CZQZ 92 7005

CANNON AIR FORCE BASE, NEW MEXICO

Prepared for:
U.S. Army Corps of Engineers
Omaha District

Prepared by:
Radian Corporation
10675 Richmond Avenue, Suite 190
Houston, Texas 77042

June 1994

Enclosure 3

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Enclosure 3

7-9-07

Note

Referenced depths for all samples are below land surface (BLS) except for borehole 3A which is given in below native soil (BNS) depths. The corresponding BLS depths for borehole 3A are:

Sample S (15-17 ft. BLS);
Sample I (19-21 ft. BLS); and
Sample 06 (23-25 ft. BLS).

Definition of Flags

J — Reported value is above the instrument detection limit but below the method reporting limit.

@ — Reported value is less than five times the reporting limit.

G — (for Diesel) - Result does not match characteristic pattern, but eluted in the retention time window, so was quantitated as diesel.

(other) - The presence of the compound was confirmed by second column analyses, but the quantitation is estimated due to matrix interferences.

B — Indicates that analyte was found in the association method blank, but the sample results are not corrected for the amount in the blank.

C — Presence and concentration of analyte confirmed by second column analyses.

X — Benzo(b)fluoranthene and benzo(k)fluoranthene coelute. The result reported is the total of these two compounds.

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)														
	NONE 09 CAN97-09-01 0 - 2			NONE 09 CAN97-09-02 4 - 6			NONE 09 CAN97-09-03 9 - 11			NONE 09 CAN97-09-04 14 - 16		
EPA 418.1 - Total Recoverable Petroleum Hydrocarbons (mg/kg)												
Hydrocarbons	ND @	(27)	[5.345]	3.7 @	(28)	[5.537]	3.7 @	(27)	[5.411]	6.6 @	(27)	[5.420]
SW8015 - Total Petroleum Hydrocarbons (ug/kg)												
Benzene (2)	NA			NA			9.6 J@	(31)	[104.000]	NA		
Diesel (2)	NA			NA			6800 GB@	(5200)	[103.093]	NA		
Ethylbenzene (2)	NA			NA			12 J@	(31)	[104.000]	NA		
Gasoline (2)	NA			NA			ND	(5200)	[104.000]	NA		
Jet fuel (2)	NA			NA			ND	(10000)	[103.093]	NA		
Kerosene (2)	NA			NA			ND	(10000)	[103.093]	NA		
Toluene (2)	NA			NA			ND	(31)	[104.000]	NA		
Xylenes (total) (2)	NA			NA			ND	(52)	[104.000]	NA		
SW8080 - Organochlorine Pesticides and PCBs (ug/kg)												
4,4'-DDD	0.35 J	(0.36)	[35.613]	ND	(0.37)	[36.914]	ND	(0.36)	[36.062]	ND	(0.36)	[36.101]
4,4'-DDE	20	(0.36)	[35.613]	0.29 J	(0.37)	[36.914]	ND	(0.36)	[36.062]	ND	(0.36)	[36.101]
4,4'-DDT	10	(0.71)	[35.613]	ND	(0.74)	[36.914]	ND	(0.72)	[36.062]	ND	(0.72)	[36.101]
Aldrin	ND	(0.36)	[35.613]	ND	(0.37)	[36.914]	ND	(0.36)	[36.062]	ND	(0.36)	[36.101]
Chlordane	12	(1.8)	[35.613]	ND	(1.8)	[36.914]	ND	(1.8)	[36.062]	ND	(1.8)	[36.101]
Dieldrin	ND	(0.36)	[35.613]	ND	(0.37)	[36.914]	ND	(0.36)	[36.062]	ND	(0.36)	[36.101]
Endosulfan I	ND	(0.36)	[35.613]	ND	(0.37)	[36.914]	ND	(0.36)	[36.062]	ND	(0.36)	[36.101]
Endosulfan II	ND	(1.1)	[35.613]	ND	(1.1)	[36.914]	ND	(1.1)	[36.062]	ND	(1.1)	[36.101]
Endosulfan Sulfate	ND	(1.8)	[35.613]	ND	(1.8)	[36.914]	ND	(1.8)	[36.062]	ND	(1.8)	[36.101]
Endrin	ND	(0.36)	[35.613]	ND	(0.37)	[36.914]	ND	(0.36)	[36.062]	ND	(0.36)	[36.101]
Endrin Aldehyde	ND	(0.71)	[35.613]	ND	(0.74)	[36.914]	ND	(0.72)	[36.062]	ND	(0.72)	[36.101]
Endrin Ketone	ND	(1.8)	[35.613]	ND	(1.8)	[36.914]	ND	(1.8)	[36.062]	ND	(1.8)	[36.101]
Heptachlor	ND	(0.36)	[35.613]	ND	(0.37)	[36.914]	ND	(0.36)	[36.062]	ND	(0.36)	[36.101]
Heptachlor epoxide	ND	(0.36)	[35.613]	ND	(0.37)	[36.914]	ND	(0.36)	[36.062]	ND	(0.36)	[36.101]
Methoxychlor	ND	(1.8)	[35.613]	ND	(1.8)	[36.914]	ND	(1.8)	[36.062]	ND	(1.8)	[36.101]
PCB-1016	ND	(3.6)	[35.613]	ND	(3.7)	[36.914]	ND	(3.6)	[36.062]	ND	(3.6)	[36.101]
PCB-1221	ND	(7.1)	[35.613]	ND	(7.4)	[36.914]	ND	(7.2)	[36.062]	ND	(7.2)	[36.101]

Compiled: 8 February 1994 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID	LOCATION ID	SAMPLE ID	BEG. DEPTH - END DEPTH (FT.)										
	NONE	09	CAN97-09-01	0 - 2			NONE	09	CAN97-09-02	4 - 6			NONE	09	CAN97-09-03	9 - 11			NONE	09	CAN97-09-04	14 - 16		
PCB-1232	ND	(7.1)	[35.613]				ND	(7.4)	[36.914]				ND	(7.2)	[36.062]				ND	(7.2)	[36.101]			
PCB-1242	ND	(3.6)	[35.613]				ND	(3.7)	[36.914]				ND	(3.6)	[36.062]				ND	(3.6)	[36.101]			
PCB-1248	ND	(3.6)	[35.613]				ND	(3.7)	[36.914]				ND	(3.6)	[36.062]				ND	(3.6)	[36.101]			
PCB-1254	ND	(7.1)	[35.613]				ND	(7.4)	[36.914]				ND	(7.2)	[36.062]				ND	(7.2)	[36.101]			
PCB-1260	ND	(7.1)	[35.613]				ND	(7.4)	[36.914]				ND	(7.2)	[36.062]				ND	(7.2)	[36.101]			
Toxaphene	ND	(18)	[35.613]				ND	(18)	[36.914]				ND	(18)	[36.062]				ND	(18)	[36.101]			
alpha-BHC	ND	(0.36)	[35.613]				ND	(0.37)	[36.914]				ND	(0.36)	[36.062]				ND	(0.36)	[36.101]			
beta-BHC	ND	(0.36)	[35.613]				ND	(0.37)	[36.914]				ND	(0.36)	[36.062]				ND	(0.36)	[36.101]			
delta-BHC	ND	(0.36)	[35.613]				0.51 G@	(0.37)	[36.914]				ND	(0.36)	[36.062]				ND	(0.36)	[36.101]			
gamma-BHC	ND	(0.36)	[35.613]				ND	(0.37)	[36.914]				ND	(0.36)	[36.062]				ND	(0.36)	[36.101]			
SW8150 - Chlorinated Herbicides (ug/kg)																								
2,4,5-T	NA						NA						ND	(7.1)	[35.361]				NA					
2,4,5-TP (Silvex)	NA						NA						ND	(6)	[35.361]				NA					
2,4-D	NA						NA						ND	(42)	[35.361]				NA					
2,4-DB	NA						NA						ND	(32)	[35.361]				NA					
Dalapon	NA						NA						ND	(210)	[35.361]				NA					
Dicamba	NA						NA						ND	(9.5)	[35.361]				NA					
Dichloroprop	NA						NA						ND	(23)	[35.361]				NA					
Dinoseb	NA						NA						ND	(5.3)	[35.361]				NA					
MCPA	NA						NA						ND	(8800)	[35.361]				NA					
MCPP	NA						NA						520 J	(6800)	[35.361]				NA					
SW8240 - Volatile Organics (ug/kg)																								
1,1,1-Trichloroethane	ND	(5.2)	[1.033]				ND	(5.5)	[1.107]				ND	(5.4)	[1.082]				ND	(5.4)	[1.085]			
1,1,2,2-Tetrachloroethane	ND	(5.2)	[1.033]				ND	(5.5)	[1.107]				ND	(5.4)	[1.082]				ND	(5.4)	[1.085]			
1,1,2-Trichloroethane	ND	(5.2)	[1.033]				ND	(5.5)	[1.107]				ND	(5.4)	[1.082]				ND	(5.4)	[1.085]			
1,1-Dichloroethane	ND	(5.2)	[1.033]				ND	(5.5)	[1.107]				ND	(5.4)	[1.082]				ND	(5.4)	[1.085]			
1,1-Dichloroethene	ND	(5.2)	[1.033]				ND	(5.5)	[1.107]				ND	(5.4)	[1.082]				ND	(5.4)	[1.085]			
1,2,3-Trichloropropane	ND	(5.2)	[1.033]				ND	(5.5)	[1.107]				ND	(5.4)	[1.082]				ND	(5.4)	[1.085]			
1,2-Dichloroethane	ND	(5.2)	[1.033]				ND	(5.5)	[1.107]				ND	(5.4)	[1.082]				ND	(5.4)	[1.085]			

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TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 09 CAN97-09-01 0 - 2			NONE 09 CAN97-09-02 4 - 6			NONE 09 CAN97-09-03 9 - 11			NONE 09 CAN97-09-04 14 - 16		
1,2-Dichloropropane	ND	(5.2)	[1.033]	ND	(5.5)	[1.107]	ND	(5.4)	[1.082]	ND	(5.4)	[1.085]
2-Chloroethyl vinyl ether	ND	(10)	[1.033]	ND	(11)	[1.107]	ND	(11)	[1.082]	ND	(11)	[1.085]
2-Hexanone	ND	(52)	[1.033]	ND	(55)	[1.107]	ND	(54)	[1.082]	ND	(54)	[1.085]
4-Methyl-2-pentanone(MIBK)	ND	(52)	[1.033]	ND	(55)	[1.107]	ND	(54)	[1.082]	ND	(54)	[1.085]
Acetone	ND	(100)	[1.033]	ND	(110)	[1.107]	ND	(110)	[1.082]	ND	(110)	[1.085]
Acrolein	ND	(77)	[1.033]	ND	(83)	[1.107]	ND	(81)	[1.082]	ND	(81)	[1.085]
Acrylonitrile	ND	(52)	[1.033]	ND	(55)	[1.107]	ND	(54)	[1.082]	ND	(54)	[1.085]
Benzene	ND	(5.2)	[1.033]	ND	(5.5)	[1.107]	ND	(5.4)	[1.082]	ND	(5.4)	[1.085]
Bromodichloromethane	ND	(5.2)	[1.033]	ND	(5.5)	[1.107]	ND	(5.4)	[1.082]	ND	(5.4)	[1.085]
Bromomethane	ND	(10)	[1.033]	ND	(11)	[1.107]	ND	(11)	[1.082]	ND	(11)	[1.085]
Carbon disulfide	ND	(5.2)	[1.033]	ND	(5.5)	[1.107]	ND	(5.4)	[1.082]	ND	(5.4)	[1.085]
Carbon tetrachloride	ND	(5.2)	[1.033]	ND	(5.5)	[1.107]	ND	(5.4)	[1.082]	ND	(5.4)	[1.085]
Chlorobenzene	ND	(5.2)	[1.033]	ND	(5.5)	[1.107]	ND	(5.4)	[1.082]	ND	(5.4)	[1.085]
Chloroethane	ND	(10)	[1.033]	ND	(11)	[1.107]	ND	(11)	[1.082]	ND	(11)	[1.085]
Chloroform	ND	(5.2)	[1.033]	ND	(5.5)	[1.107]	ND	(5.4)	[1.082]	ND	(5.4)	[1.085]
Chloromethane	ND	(10)	[1.033]	ND	(11)	[1.107]	ND	(11)	[1.082]	ND	(11)	[1.085]
Dibromochloromethane	ND	(5.2)	[1.033]	ND	(5.5)	[1.107]	ND	(5.4)	[1.082]	ND	(5.4)	[1.085]
Dibromomethane	ND	(5.2)	[1.033]	ND	(5.5)	[1.107]	ND	(5.4)	[1.082]	ND	(5.4)	[1.085]
Dichlorodifluoromethane	ND	(21)	[1.033]	ND	(22)	[1.107]	ND	(22)	[1.082]	ND	(22)	[1.085]
Ethyl benzene	ND	(5.2)	[1.033]	ND	(5.5)	[1.107]	ND	(5.4)	[1.082]	ND	(5.4)	[1.085]
Ethyl methacrylate	ND	(15)	[1.033]	ND	(17)	[1.107]	ND	(16)	[1.082]	ND	(16)	[1.085]
Iodomethane	ND	(5.2)	[1.033]	ND	(5.5)	[1.107]	ND	(5.4)	[1.082]	ND	(5.4)	[1.085]
Methyl ethyl ketone	ND	(100)	[1.033]	ND	(110)	[1.107]	ND	(110)	[1.082]	ND	(110)	[1.085]
Methylene chloride	ND	(5.2)	[1.033]	3.8 J	(5.5)	[1.107]	3.4 J	(5.4)	[1.082]	3.9 J	(5.4)	[1.085]
Styrene	ND	(5.2)	[1.033]	ND	(5.5)	[1.107]	ND	(5.4)	[1.082]	ND	(5.4)	[1.085]
Tetrachloroethene	ND	(5.2)	[1.033]	ND	(5.5)	[1.107]	ND	(5.4)	[1.082]	ND	(5.4)	[1.085]
Toluene	ND	(5.2)	[1.033]	1.9 J	(5.5)	[1.107]	1 J	(5.4)	[1.082]	1.8 J	(5.4)	[1.085]
Tribromomethane(Bromoform)	ND	(5.2)	[1.033]	ND	(5.5)	[1.107]	ND	(5.4)	[1.082]	ND	(5.4)	[1.085]
Trichloroethene	ND	(5.2)	[1.033]	ND	(5.5)	[1.107]	ND	(5.4)	[1.082]	ND	(5.4)	[1.085]

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TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID	LOCATION ID	SAMPLE ID	BEG. DEPTH - END DEPTH (FT.)												
	NONE	09	CAN97-09-01	0 - 2			NONE	09	CAN97-09-02	4 - 6			NONE	09	CAN97-09-03	9 - 11			NONE	09	CAN97-09-04	14 - 16		
Trichlorofluoromethane	ND	(10)	[1.033]		ND	(11)	[1.107]		ND	(11)	[1.082]		ND	(11)	[1.085]	
Unknown	14	()	[1.033]		NA				NA				NA			
Vinyl acetate	ND	(5.2)	[1.033]		ND	(5.5)	[1.107]		ND	(5.4)	[1.082]		ND	(5.4)	[1.085]	
Vinyl chloride	ND	(10)	[1.033]		ND	(11)	[1.107]		ND	(11)	[1.082]		ND	(11)	[1.085]	
Xylenes	ND	(5.2)	[1.033]		ND	(5.5)	[1.107]		ND	(5.4)	[1.082]		ND	(5.4)	[1.085]	
cis-1,3-Dichloropropene	ND	(5.2)	[1.033]		ND	(5.5)	[1.107]		ND	(5.4)	[1.082]		ND	(5.4)	[1.085]	
trans-1,2-Dichloroethene	ND	(5.2)	[1.033]		ND	(5.5)	[1.107]		ND	(5.4)	[1.082]		ND	(5.4)	[1.085]	
trans-1,3-Dichloropropene	ND	(5.2)	[1.033]		ND	(5.5)	[1.107]		ND	(5.4)	[1.082]		ND	(5.4)	[1.085]	
trans-1,4-Dichloro-2-butene	ND	(10)	[1.033]		ND	(11)	[1.107]		ND	(11)	[1.082]		ND	(11)	[1.085]	
SW8270 - Semivolatile Organics (ug/kg)																
1,2,4,5-Tetrachlorobenzene	ND	(360)	[.036]		ND	(370)	[.037]		ND	(360)	[.036]		ND	(360)	[.036]	
1,2,4-Trichlorobenzene	ND	(360)	[.036]		ND	(370)	[.037]		ND	(360)	[.036]		ND	(360)	[.036]	
1,2-Dichlorobenzene	ND	(360)	[.036]		ND	(370)	[.037]		ND	(360)	[.036]		ND	(360)	[.036]	
1,2-Diphenylhydrazine	ND	(360)	[.036]		ND	(370)	[.037]		ND	(360)	[.036]		ND	(360)	[.036]	
1,3-Dichlorobenzene	ND	(360)	[.036]		ND	(370)	[.037]		ND	(360)	[.036]		ND	(360)	[.036]	
1,4-Dichlorobenzene	ND	(360)	[.036]		ND	(370)	[.037]		ND	(360)	[.036]		ND	(360)	[.036]	
1-Chloronaphthalene	ND	(360)	[.036]		ND	(370)	[.037]		ND	(360)	[.036]		ND	(360)	[.036]	
1-Naphthylamine	ND	(360)	[.036]		ND	(370)	[.037]		ND	(360)	[.036]		ND	(360)	[.036]	
2,3,4,6-Tetrachlorophenol	ND	(710)	[.036]		ND	(740)	[.037]		ND	(720)	[.036]		ND	(720)	[.036]	
2,4,5-Trichlorophenol	ND	(360)	[.036]		ND	(370)	[.037]		ND	(360)	[.036]		ND	(360)	[.036]	
2,4,6-Trichlorophenol	ND	(360)	[.036]		ND	(370)	[.037]		ND	(360)	[.036]		ND	(360)	[.036]	
2,4-Dichlorophenol	ND	(360)	[.036]		ND	(370)	[.037]		ND	(360)	[.036]		ND	(360)	[.036]	
2,4-Dimethylphenol	ND	(360)	[.036]		ND	(370)	[.037]		ND	(360)	[.036]		ND	(360)	[.036]	
2,4-Dinitrophenol	ND	(1800)	[.036]		ND	(1800)	[.037]		ND	(1800)	[.036]		ND	(1800)	[.036]	
2,4-Dinitrotoluene	ND	(360)	[.036]		ND	(370)	[.037]		ND	(360)	[.036]		ND	(360)	[.036]	
2,6-Dichlorophenol	ND	(360)	[.036]		ND	(370)	[.037]		ND	(360)	[.036]		ND	(360)	[.036]	
2,6-Dinitrotoluene	ND	(360)	[.036]		ND	(370)	[.037]		ND	(360)	[.036]		ND	(360)	[.036]	
2-Chloronaphthalene	ND	(360)	[.036]		ND	(370)	[.037]		ND	(360)	[.036]		ND	(360)	[.036]	
2-Chlorophenol	ND	(360)	[.036]		ND	(370)	[.037]		ND	(360)	[.036]		ND	(360)	[.036]	

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TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

	SITE ID											
	LOCATION ID											
	SAMPLE ID											
	BEG. DEPTH - END DEPTH (FT.)											
PARAMETER	NONE 09 CAN97-09-01 0 - 2			NONE 09 CAN97-09-02 4 - 6			NONE 09 CAN97-09-03 9 - 11			NONE 09 CAN97-09-04 14 - 16		
2-Methylnaphthalene	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
2-Methylphenol(o-cresol)	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
2-Naphthylamine	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
2-Nitroaniline	ND	(1800)	[.036]	ND	(1800)	[.037]	ND	(1800)	[.036]	ND	(1800)	[.036]
2-Nitrophenol	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
2-Picoline	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
3,3'-Dichlorobenzidine	ND	(710)	[.036]	ND	(740)	[.037]	ND	(720)	[.036]	ND	(720)	[.036]
3-Methylcholanthrene	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
3-Nitroaniline	ND	(1800)	[.036]	ND	(1800)	[.037]	ND	(1800)	[.036]	ND	(1800)	[.036]
4,6-Dinitro-2-methylphenol	ND	(1800)	[.036]	ND	(1800)	[.037]	ND	(1800)	[.036]	ND	(1800)	[.036]
4-Aminobiphenyl	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
4-Bromophenyl phenyl ether	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
4-Chloro-3-methylphenol	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
4-Chlorophenyl phenyl ether	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
4-Methylphenol(p-cresol)	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
4-Nitroaniline	ND	(1800)	[.036]	ND	(1800)	[.037]	ND	(1800)	[.036]	ND	(1800)	[.036]
4-Nitrophenol	ND	(1800)	[.036]	ND	(1800)	[.037]	ND	(1800)	[.036]	ND	(1800)	[.036]
7,12-Dimethylbenz(a)anthracene	ND	(890)	[.036]	ND	(920)	[.037]	ND	(900)	[.036]	ND	(900)	[.036]
Acenaphthene	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
Acenaphthylene	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
Acetophenone	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
Aniline	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
Anthracene	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
Benzidine	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
Benzo(a)anthracene	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
Benzo(a)pyrene	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
Benzo(b)fluoranthene	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
Benzo(g,h,i)perylene	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
Benzo(k)fluoranthene	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]

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TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID	LOCATION ID	SAMPLE ID	BEG. DEPTH - END DEPTH (FT.)												
	NONE	09	CAN97-09-01	0 - 2			NONE	09	CAN97-09-02	4 - 6			NONE	09	CAN97-09-03	9 - 11			NONE	09	CAN97-09-04	14 - 16		
Benzoic acid	ND	(1800)	[	.036]	ND	(1800)	[	.037]	ND	(1800)	[	.036]	ND	(1800)	[	.036]
Benzyl alcohol	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(360)	[	.036]
Butylbenzylphthalate	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(360)	[	.036]
Chrysene	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(360)	[	.036]
Cyclohexenol B	NA				NA				NA				220	(0)	[	.036]
Di-n-octylphthalate	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(360)	[	.036]
Dibenz(a,h)anthracene	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(360)	[	.036]
Dibenz(a,j)acridine	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(360)	[	.036]
Dibenzofuran	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(360)	[	.036]
Dibutylphthalate	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(360)	[	.036]
Diethylphthalate	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(360)	[	.036]
Dimethylphenethylamine	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(360)	[	.036]
Dimethylphthalate	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(360)	[	.036]
Diphenylamine	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(360)	[	.036]
Ethyl methanesulfonate	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(360)	[	.036]
Fluoranthene	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(360)	[	.036]
Fluorene	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(360)	[	.036]
Hexachlorobenzene	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(360)	[	.036]
Hexachlorobutadiene	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(360)	[	.036]
Hexachlorocyclopentadiene	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(360)	[	.036]
Hexachloroethane	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(360)	[	.036]
Indeno(1,2,3-cd)pyrene	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(360)	[	.036]
Isophorone	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(360)	[	.036]
Methyl methanesulfonate	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(360)	[	.036]
N-Nitroso-di-n-butylamine	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(360)	[	.036]
N-Nitrosodimethylamine	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(360)	[	.036]
N-Nitrosodiphenylamine	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(360)	[	.036]
N-Nitrosodipropylamine	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(360)	[	.036]
N-Nitrosopiperidine	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(360)	[	.036]

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TABLE B1

RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 09 CAN97-09-01 0 - 2			NONE 09 CAN97-09-02 4 - 6			NONE 09 CAN97-09-03 9 - 11			NONE 09 CAN97-09-04 14 - 16		
Naphthalene	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
Nitrobenzene	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
Pentachlorobenzene	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
Pentachloronitrobenzene	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
Pentachlorophenol	ND	(1800)	[.036]	ND	(1800)	[.037]	ND	(1800)	[.036]	ND	(1800)	[.036]
Phenacetin	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
Phenanthrene	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
Phenol	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
Pronamide	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
Pyrene	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
Pyridine	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
Trichloropropene B	180	(0)	[.036]	NA			180	(0)	[.036]	800	(0)	[.036]
Unknown	210	(0)	[.036]	NA			220	(0)	[.036]	150	(0)	[.036]
Unknown B	250	(0)	[.036]	150	(0)	[.037]	250	(0)	[.036]	NA		
Unknown aldehyde	140	(0)	[.036]	NA			NA			NA		
Unknown alkane	210	(0)	[.036]	NA			NA			NA		
Unknown carboxylic acid	360	(0)	[.036]	NA			NA			NA		
Unknown cyclic ether B	250	(0)	[.036]	260	(0)	[.037]	320	(0)	[.036]	940	(0)	[.036]
bis(2-Chloroethoxy)methane	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
bis(2-Chloroethyl)ether	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
bis(2-Chloroisopropyl)ether	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
bis(2-Ethylhexyl)phthalate	ND	(360)	[.036]	60 JB	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
p-Chloroaniline	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
p-Dimethylaminoazobenzene	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]

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TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)														
	NONE 09 CAN97-09-05 19 - 21				NONE 09 CAN97-09-06 24 - 26				NONE 09 CAN97-09-99 Dup of CAN97-09-06 24 - 26				NONE 09 CAN97-09-07 29 - 31			
EPA 418.1 - Total Recoverable Petroleum Hydrocarbons (mg/kg)																
Hydrocarbons	3.6 @	(26)	[5.291]		1.5 @	(26)	[5.300]		7 @	(26)	[5.247]		12 @	(27)	[5.405]	
SW8015 - Total Petroleum Hydrocarbons (ug/kg)																
Benzene (2)	NA				NA				NA				ND	(31)	[104.000]	
Diesel (2)	NA				NA				NA				6100 GB@	(5400)	[108.108]	
Ethylbenzene (2)	NA				NA				NA				ND	(31)	[104.000]	
Gasoline (2)	NA				NA				NA				ND	(5200)	[104.000]	
Jet fuel (2)	NA				NA				NA				ND	(11000)	[108.108]	
Kerosene (2)	NA				NA				NA				ND	(11000)	[108.108]	
Toluene (2)	NA				NA				NA				ND	(31)	[104.000]	
Xylenes (total) (2)	NA				NA				NA				ND	(52)	[104.000]	
SW8080 - Organochlorine Pesticides and PCBs (ug/kg)																
4,4'-DDD	ND	(0.35)	[35.311]		0.41 @	(0.35)	[35.386]		ND	(0.35)	[35.088]		ND	(0.36)	[36.023]	
4,4'-DDE	ND	(0.35)	[35.311]		1.4 @	(0.35)	[35.386]		1.6 @	(0.35)	[35.088]		ND	(0.36)	[36.023]	
4,4'-DDT	ND	(0.71)	[35.311]		0.99 @	(0.71)	[35.386]		1 @	(0.7)	[35.088]		ND	(0.72)	[36.023]	
Aldrin	ND	(0.35)	[35.311]		ND	(0.35)	[35.386]		ND	(0.35)	[35.088]		ND	(0.36)	[36.023]	
Chlordane	ND	(1.8)	[35.311]		ND	(1.8)	[35.386]		ND	(1.8)	[35.088]		ND	(1.8)	[36.023]	
Dieldrin	ND	(0.35)	[35.311]		ND	(0.35)	[35.386]		ND	(0.35)	[35.088]		ND	(0.36)	[36.023]	
Endosulfan I	ND	(0.35)	[35.311]		ND	(0.35)	[35.386]		ND	(0.35)	[35.088]		ND	(0.36)	[36.023]	
Endosulfan II	ND	(1.1)	[35.311]		ND	(1.1)	[35.386]		ND	(1.1)	[35.088]		ND	(1.1)	[36.023]	
Endosulfan Sulfate	ND	(1.8)	[35.311]		ND	(1.8)	[35.386]		ND	(1.8)	[35.088]		ND	(1.8)	[36.023]	
Endrin	ND	(0.35)	[35.311]		ND	(0.35)	[35.386]		ND	(0.35)	[35.088]		ND	(0.36)	[36.023]	
Endrin Aldehyde	ND	(0.71)	[35.311]		ND	(0.71)	[35.386]		ND	(0.7)	[35.088]		ND	(0.72)	[36.023]	
Endrin Ketone	ND	(1.8)	[35.311]		ND	(1.8)	[35.386]		ND	(1.8)	[35.088]		ND	(1.8)	[36.023]	
Heptachlor	ND	(0.35)	[35.311]		ND	(0.35)	[35.386]		ND	(0.35)	[35.088]		ND	(0.36)	[36.023]	
Heptachlor epoxide	ND	(0.35)	[35.311]		ND	(0.35)	[35.386]		0.24 J	(0.35)	[35.088]		ND	(0.36)	[36.023]	
Methoxychlor	ND	(1.8)	[35.311]		ND	(1.8)	[35.386]		ND	(1.8)	[35.088]		ND	(1.8)	[36.023]	
PCB-1016	ND	(3.5)	[35.311]		ND	(3.5)	[35.386]		ND	(3.5)	[35.088]		ND	(3.6)	[36.023]	
PCB-1221	ND	(7.1)	[35.311]		ND	(7.1)	[35.386]		ND	(7)	[35.088]		ND	(7.2)	[36.023]	

Compiled: 8 Feb v 1994 () = Reporting Limit [] = Factor = Not Detected NA = Not Applicable

TABLE 81 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 09 CAN97-09-05 19 - 21			NONE 09 CAN97-09-06 24 - 26			NONE 09 CAN97-09-99 Dup of CAN97-09-06 24 - 26			NONE 09 CAN97-09-07 29 - 31		
PCB-1232	ND	(7.1)	[35.311]	ND	(7.1)	[35.386]	ND	(7)	[35.088]	ND	(7.2)	[36.023]
PCB-1242	ND	(3.5)	[35.311]	ND	(3.5)	[35.386]	ND	(3.5)	[35.088]	ND	(3.6)	[36.023]
PCB-1248	ND	(3.5)	[35.311]	ND	(3.5)	[35.386]	ND	(3.5)	[35.088]	ND	(3.6)	[36.023]
PCB-1254	ND	(7.1)	[35.311]	ND	(7.1)	[35.386]	ND	(7)	[35.088]	ND	(7.2)	[36.023]
PCB-1260	ND	(7.1)	[35.311]	ND	(7.1)	[35.386]	ND	(7)	[35.088]	ND	(7.2)	[36.023]
Toxaphene	ND	(18)	[35.311]	ND	(18)	[35.386]	ND	(18)	[35.088]	ND	(18)	[36.023]
alpha-BHC	ND	(0.35)	[35.311]	ND	(0.35)	[35.386]	ND	(0.35)	[35.088]	ND	(0.36)	[36.023]
beta-BHC	ND	(0.35)	[35.311]	ND	(0.35)	[35.386]	ND	(0.35)	[35.088]	ND	(0.36)	[36.023]
delta-BHC	ND	(0.35)	[35.311]	ND	(0.35)	[35.386]	ND	(0.35)	[35.088]	ND	(0.36)	[36.023]
gamma-BHC	ND	(0.35)	[35.311]	ND	(0.35)	[35.386]	ND	(0.35)	[35.088]	ND	(0.36)	[36.023]
SW8150 - Chlorinated Herbicides (ug/kg)												
2,4,5-T	NA			NA			NA			ND	(7.2)	[36.010]
2,4,5-TP (Silvex)	NA			NA			NA			ND	(6.1)	[36.010]
2,4-D	NA			NA			NA			ND	(43)	[36.010]
2,4-DB	NA			NA			NA			ND	(33)	[36.010]
Dalapon	NA			NA			NA			ND	(210)	[36.010]
Dicamba	NA			NA			NA			ND	(9.7)	[36.010]
Dichloroprop	NA			NA			NA			12 J	(23)	[36.010]
Dinoseb	NA			NA			NA			ND	(5.4)	[36.010]
MCPA	NA			NA			NA			ND	(9000)	[36.010]
MCPP	NA			NA			NA			ND	(6900)	[36.010]
SW8240 - Volatile Organics (ug/kg)												
1,1,1-Trichloroethane	ND	(5.3)	[1.059]	ND	(5.4)	[1.085]	NA			ND	(5.3)	[1.066]
1,1,2,2-Tetrachloroethane	ND	(5.3)	[1.059]	ND	(5.4)	[1.085]	NA			ND	(5.3)	[1.066]
1,1,2-Trichloroethane	ND	(5.3)	[1.059]	ND	(5.4)	[1.085]	NA			ND	(5.3)	[1.066]
1,1-Dichloroethane	ND	(5.3)	[1.059]	ND	(5.4)	[1.085]	NA			ND	(5.3)	[1.066]
1,1-Dichloroethene	ND	(5.3)	[1.059]	ND	(5.4)	[1.085]	NA			ND	(5.3)	[1.066]
1,2,3-Trichloropropane	ND	(5.3)	[1.059]	ND	(5.4)	[1.085]	NA			ND	(5.3)	[1.066]
1,2-Dichloroethane	ND	(5.3)	[1.059]	ND	(5.4)	[1.085]	NA			ND	(5.3)	[1.066]

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)												
	NONE 09 CAN97-09-05 19 - 21			NONE 09 CAN97-09-06 24 - 26			NONE 09 CAN97-09-99 Dup of CAN97-09-06 24 - 26	NONE 09 CAN97-09-07 29 - 31					
1,2-Dichloropropane	ND	(5.3)	[1.059]	ND	(5.4)	[1.085]	NA	ND	(5.3)	[1.066]			
2-Chloroethyl vinyl ether	ND	(11)	[1.059]	ND	(11)	[1.085]	NA	ND	(11)	[1.066]			
2-Hexanone	ND	(53)	[1.059]	ND	(54)	[1.085]	NA	ND	(53)	[1.066]			
4-Methyl-2-pentanone(MIBK)	ND	(53)	[1.059]	ND	(54)	[1.085]	NA	ND	(53)	[1.066]			
Acetone	ND	(110)	[1.059]	ND	(110)	[1.085]	NA	ND	(110)	[1.066]			
Acrolein	ND	(79)	[1.059]	ND	(81)	[1.085]	NA	ND	(80)	[1.066]			
Acrylonitrile	ND	(53)	[1.059]	ND	(54)	[1.085]	NA	ND	(53)	[1.066]			
Benzene	ND	(5.3)	[1.059]	ND	(5.4)	[1.085]	NA	ND	(5.3)	[1.066]			
Bromodichloromethane	ND	(5.3)	[1.059]	ND	(5.4)	[1.085]	NA	ND	(5.3)	[1.066]			
Bromomethane	ND	(11)	[1.059]	ND	(11)	[1.085]	NA	ND	(11)	[1.066]			
Carbon disulfide	ND	(5.3)	[1.059]	ND	(5.4)	[1.085]	NA	ND	(5.3)	[1.066]			
Carbon tetrachloride	ND	(5.3)	[1.059]	ND	(5.4)	[1.085]	NA	ND	(5.3)	[1.066]			
Chlorobenzene	ND	(5.3)	[1.059]	ND	(5.4)	[1.085]	NA	ND	(5.3)	[1.066]			
Chloroethane	ND	(11)	[1.059]	ND	(11)	[1.085]	NA	ND	(11)	[1.066]			
Chloroform	ND	(5.3)	[1.059]	ND	(5.4)	[1.085]	NA	ND	(5.3)	[1.066]			
Chloromethane	ND	(11)	[1.059]	ND	(11)	[1.085]	NA	ND	(11)	[1.066]			
Dibromochloromethane	ND	(5.3)	[1.059]	ND	(5.4)	[1.085]	NA	ND	(5.3)	[1.066]			
Dibromomethane	ND	(5.3)	[1.059]	ND	(5.4)	[1.085]	NA	ND	(5.3)	[1.066]			
Dichlorodifluoromethane	ND	(21)	[1.059]	ND	(22)	[1.085]	NA	ND	(21)	[1.066]			
Ethyl acetate	17	()	[1.059]	7.6	()	[1.085]	NA	NA					
Ethyl benzene	ND	(5.3)	[1.059]	ND	(5.4)	[1.085]	NA	ND	(5.3)	[1.066]			
Ethyl methacrylate	ND	(16)	[1.059]	ND	(16)	[1.085]	NA	ND	(16)	[1.066]			
Iodomethane	ND	(5.3)	[1.059]	ND	(5.4)	[1.085]	NA	ND	(5.3)	[1.066]			
Methyl ethyl ketone	ND	(110)	[1.059]	ND	(110)	[1.085]	NA	ND	(110)	[1.066]			
Methylene chloride	3.7 J	(5.3)	[1.059]	ND	(5.4)	[1.085]	NA	ND	(5.3)	[1.066]			
Styrene	ND	(5.3)	[1.059]	ND	(5.4)	[1.085]	NA	ND	(5.3)	[1.066]			
Tetrachloroethene	ND	(5.3)	[1.059]	ND	(5.4)	[1.085]	NA	ND	(5.3)	[1.066]			
Toluene	1.7 J	(5.3)	[1.059]	ND	(5.4)	[1.085]	NA	ND	(5.3)	[1.066]			
Tribromomethane(Bromoform)	ND	(5.3)	[1.059]	ND	(5.4)	[1.085]	NA	ND	(5.3)	[1.066]			

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TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)																
	NONE 09 CAN97-09-05 19 - 21				NONE 09 CAN97-09-06 24 - 26				NONE 09 CAN97-09-99 Dup of CAN97-09-06 24 - 26				NONE 09 CAN97-09-07 29 - 31			
Trichloroethene	ND	(5.3)	[	1.059]	ND	(5.4)	[	1.085]	NA				ND	(5.3)	[	1.066]
Trichlorofluoromethane	ND	(11)	[	1.059]	ND	(11)	[	1.085]	NA				ND	(11)	[	1.066]
Vinyl acetate	ND	(5.3)	[	1.059]	ND	(5.4)	[	1.085]	NA				ND	(5.3)	[	1.066]
Vinyl chloride	ND	(11)	[	1.059]	ND	(11)	[	1.085]	NA				ND	(11)	[	1.066]
Xylenes	ND	(5.3)	[	1.059]	ND	(5.4)	[	1.085]	NA				ND	(5.3)	[	1.066]
cis-1,3-Dichloropropene	ND	(5.3)	[	1.059]	ND	(5.4)	[	1.085]	NA				ND	(5.3)	[	1.066]
trans-1,2-Dichloroethene	ND	(5.3)	[	1.059]	ND	(5.4)	[	1.085]	NA				ND	(5.3)	[	1.066]
trans-1,3-Dichloropropene	ND	(5.3)	[	1.059]	ND	(5.4)	[	1.085]	NA				ND	(5.3)	[	1.066]
trans-1,4-Dichloro-2-butene	ND	(11)	[	1.059]	ND	(11)	[	1.085]	NA				ND	(11)	[	1.066]
SW8270 - Semivolatile Organics (ug/kg)																
1,2,4,5-Tetrachlorobenzene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
1,2,4-Trichlorobenzene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
1,2-Dichlorobenzene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
1,2-Diphenylhydrazine	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
1,3-Dichlorobenzene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
1,4-Dichlorobenzene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
1-Chloronaphthalene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
1-Naphthylamine	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
2,3,4,6-Tetrachlorophenol	ND	(710)	[	.035]	ND	(710)	[	.035]	ND	(700)	[	.035]	ND	(720)	[	.036]
2,4,5-Trichlorophenol	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
2,4,6-Trichlorophenol	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
2,4-Dichlorophenol	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
2,4-Dimethylphenol	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
2,4-Dinitrophenol	ND	(1800)	[	.035]	ND	(1800)	[	.035]	ND	(1800)	[	.035]	ND	(1800)	[	.036]
2,4-Dinitrotoluene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
2,6-Dichlorophenol	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
2,6-Dinitrotoluene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
2-Chloronaphthalene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
2-Chlorophenol	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]

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TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)														
	NONE 09 CAN97-09-05 19 - 21				NONE 09 CAN97-09-06 24 - 26				NONE 09 CAN97-09-99 Dup of CAN97-09-06 24 - 26				NONE 09 CAN97-09-07 29 - 31		
2-Methylnaphthalene	ND	(350)	[.035]		ND	(350)	[.035]		ND	(350)	[.035]		ND	(360)	[.036]
2-Methylphenol(o-cresol)	ND	(350)	[.035]		ND	(350)	[.035]		ND	(350)	[.035]		ND	(360)	[.036]
2-Naphthylamine	ND	(350)	[.035]		ND	(350)	[.035]		ND	(350)	[.035]		ND	(360)	[.036]
2-Nitroaniline	ND	(1800)	[.035]		ND	(1800)	[.035]		ND	(1800)	[.035]		ND	(1800)	[.036]
2-Nitrophenol	ND	(350)	[.035]		ND	(350)	[.035]		ND	(350)	[.035]		ND	(360)	[.036]
2-Picoline	ND	(350)	[.035]		ND	(350)	[.035]		ND	(350)	[.035]		ND	(360)	[.036]
3,3'-Dichlorobenzidine	ND	(710)	[.035]		ND	(710)	[.035]		ND	(700)	[.035]		ND	(720)	[.036]
3-Methylcholanthrene	ND	(350)	[.035]		ND	(350)	[.035]		ND	(350)	[.035]		ND	(360)	[.036]
3-Nitroaniline	ND	(1800)	[.035]		ND	(1800)	[.035]		ND	(1800)	[.035]		ND	(1800)	[.036]
4,6-Dinitro-2-methylphenol	ND	(1800)	[.035]		ND	(1800)	[.035]		ND	(1800)	[.035]		ND	(1800)	[.036]
4-Aminobiphenyl	ND	(350)	[.035]		ND	(350)	[.035]		ND	(350)	[.035]		ND	(360)	[.036]
4-Bromophenyl phenyl ether	ND	(350)	[.035]		ND	(350)	[.035]		ND	(350)	[.035]		ND	(360)	[.036]
4-Chloro-3-methylphenol	ND	(350)	[.035]		ND	(350)	[.035]		ND	(350)	[.035]		ND	(360)	[.036]
4-Chlorophenyl phenyl ether	ND	(350)	[.035]		ND	(350)	[.035]		ND	(350)	[.035]		ND	(360)	[.036]
4-Methylphenol(p-cresol)	ND	(350)	[.035]		ND	(350)	[.035]		ND	(350)	[.035]		ND	(360)	[.036]
4-Nitroaniline	ND	(1800)	[.035]		ND	(1800)	[.035]		ND	(1800)	[.035]		ND	(1800)	[.036]
4-Nitrophenol	ND	(1800)	[.035]		ND	(1800)	[.035]		ND	(1800)	[.035]		ND	(1800)	[.036]
7,12-Dimethylbenz(a)anthracene	ND	(880)	[.035]		ND	(880)	[.035]		ND	(880)	[.035]		ND	(900)	[.036]
Acenaphthene	ND	(350)	[.035]		ND	(350)	[.035]		ND	(350)	[.035]		ND	(360)	[.036]
Acenaphthylene	ND	(350)	[.035]		ND	(350)	[.035]		ND	(350)	[.035]		ND	(360)	[.036]
Acetophenone	ND	(350)	[.035]		ND	(350)	[.035]		ND	(350)	[.035]		ND	(360)	[.036]
Aniline	ND	(350)	[.035]		ND	(350)	[.035]		ND	(350)	[.035]		ND	(360)	[.036]
Anthracene	ND	(350)	[.035]		ND	(350)	[.035]		ND	(350)	[.035]		ND	(360)	[.036]
Benzidine	ND	(350)	[.035]		ND	(350)	[.035]		ND	(350)	[.035]		ND	(360)	[.036]
Benzo(a)anthracene	ND	(350)	[.035]		ND	(350)	[.035]		ND	(350)	[.035]		ND	(360)	[.036]
Benzo(a)pyrene	ND	(350)	[.035]		ND	(350)	[.035]		ND	(350)	[.035]		ND	(360)	[.036]
Benzo(b)fluoranthene	ND	(350)	[.035]		ND	(350)	[.035]		ND	(350)	[.035]		ND	(360)	[.036]
Benzo(g,h,i)perylene	ND	(350)	[.035]		ND	(350)	[.035]		ND	(350)	[.035]		ND	(360)	[.036]
Benzo(k)fluoranthene	ND	(350)	[.035]		ND	(350)	[.035]		ND	(350)	[.035]		ND	(360)	[.036]

Compiled: 8 Feb 1994 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)																
	NONE 09 CAN97-09-05 19 - 21				NONE 09 CAN97-09-06 24 - 26				NONE 09 CAN97-09-99 Dup of CAN97-09-06 24 - 26				NONE 09 CAN97-09-07 29 - 31			
Benzoic acid	ND	(1800)	[	.035]	ND	(1800)	[	.035]	ND	(1800)	[	.035]	ND	(1800)	[	.036]
Benzyl alcohol	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Butylbenzylphthalate	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
C4-Tetrahydrofuran	NA				210	(0)	[	.035]	240	(0)	[	.035]	NA			
Chrysene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Cyclohexenol	NA				280	(0)	[	.035]	350	(0)	[	.035]	NA			
Cyclohexenone	NA				140	(0)	[	.035]	NA				NA			
Di-n-octylphthalate	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Dibenz(a,h)anthracene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Dibenz(a,j)acridine	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Dibenzofuran	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Dibutylphthalate	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Diethylphthalate	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Dimethylphenethylamine	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Dimethylphthalate	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Diphenylamine	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Ethyl methanesulfonate	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Fluoranthene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Fluorene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Hexachlorobenzene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Hexachlorobutadiene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Hexachlorocyclopentadiene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Hexachloroethane	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Indeno(1,2,3-cd)pyrene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Isophorone	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Methyl methanesulfonate	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
N-Nitroso-di-n-butylamine	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
N-Nitrosodimethylamine	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
N-Nitrosodiphenylamine	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]

Compiled: 8 February 1994 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)																
	NONE 09 CAN97-09-05 19 - 21				NONE 09 CAN97-09-06 24 - 26				NONE 09 CAN97-09-99 Dup of CAN97-09-06 24 - 26				NONE 09 CAN97-09-07 29 - 31			
N-Nitrosodipropylamine	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
N-Nitrosopiperidine	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Naphthalene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Nitrobenzene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Pentachlorobenzene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Pentachloronitrobenzene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Pentachlorophenol	ND	(1800)	[	.035]	ND	(1800)	[	.035]	ND	(1800)	[	.035]	ND	(1800)	[	.036]
Phenacetin	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Phenanthrene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Phenol	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Pronamide	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Pyrene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Pyridine	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Trichloropropene B	NA				NA				NA				320	(0)	[	.036]
Trichloropropene(s)	NA				NA				320	(0)	[	.035]	NA			
Unknown	140	(0)	[	.035]	640	(0)	[	.035]	280	(0)	[	.035]	540	(0)	[	.036]
Unknown alkene	NA				42000	(0)	[	.035]	46000	(0)	[	.035]	NA			
Unknown cyclic ether B	NA				880	(0)	[	.035]	810	(0)	[	.035]	400	(0)	[	.036]
bis(2-Chloroethoxy)methane	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
bis(2-Chloroethyl)ether	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
bis(2-Chloroisopropyl)ether	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
bis(2-Ethylhexyl)phthalate	ND	(350)	[	.035]	160 J	(350)	[	.035]	160 J	(350)	[	.035]	ND	(360)	[	.036]
p-Chloroaniline	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
p-Dimethylaminoazobenzene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 09 CAN97-09-08 34 - 36			NONE 09 CAN97-09-09 39 - 41			NONE 09 CAN97-09-10 44 - 46			NONE 09 CAN97-09-11 49 - 53		
EPA 418.1 - Total Recoverable Petroleum Hydrocarbons (mg/kg)												
Hydrocarbons	3.6 @	(27)	[5.337]	9.3 @	(27)	[5.300]	21 @	(27)	[5.415]	21 @	(26)	[5.252]
SW8015 - Total Petroleum Hydrocarbons (ug/kg)												
Benzene (2)	NA			6.6 J@	(31)	[103.000]	NA			NA		
Diesel (2)	NA			5000 J	(5300)	[106.270]	NA			NA		
Ethylbenzene (2)	NA			24 J@	(31)	[103.000]	NA			NA		
Gasoline (2)	NA			ND	(5200)	[103.000]	NA			NA		
Jet fuel (2)	NA			ND	(11000)	[106.270]	NA			NA		
Kerosene (2)	NA			ND	(11000)	[106.270]	NA			NA		
Toluene (2)	NA			21 J@	(31)	[103.000]	NA			NA		
Xylenes (total) (2)	NA			73 C@	(52)	[103.000]	NA			NA		
SW8080 - Organochlorine Pesticides and PCBs (ug/kg)												
4,4'-DDD	ND	(0.36)	[35.625]	ND	(0.35)	[35.423]	ND	(0.36)	[36.114]	ND	(0.35)	[35.039]
4,4'-DDE	ND	(0.36)	[35.625]	ND	(0.35)	[35.423]	3	(0.36)	[36.114]	ND	(0.35)	[35.039]
4,4'-DDT	ND	(0.71)	[35.625]	ND	(0.71)	[35.423]	ND	(0.72)	[36.114]	ND	(0.7)	[35.039]
Aldrin	ND	(0.36)	[35.625]	ND	(0.35)	[35.423]	ND	(0.36)	[36.114]	ND	(0.35)	[35.039]
Chlordane	ND	(1.8)	[35.625]	ND	(1.8)	[35.423]	ND	(1.8)	[36.114]	ND	(1.8)	[35.039]
Dieldrin	ND	(0.36)	[35.625]	ND	(0.35)	[35.423]	ND	(0.36)	[36.114]	ND	(0.35)	[35.039]
Endosulfan I	ND	(0.36)	[35.625]	ND	(0.35)	[35.423]	ND	(0.36)	[36.114]	ND	(0.35)	[35.039]
Endosulfan II	ND	(1.1)	[35.625]	ND	(1.1)	[35.423]	ND	(1.1)	[36.114]	ND	(1.1)	[35.039]
Endosulfan Sulfate	ND	(1.8)	[35.625]	ND	(1.8)	[35.423]	ND	(1.8)	[36.114]	ND	(1.8)	[35.039]
Endrin	ND	(0.36)	[35.625]	ND	(0.35)	[35.423]	0.022 J	(0.36)	[36.114]	ND	(0.35)	[35.039]
Endrin Aldehyde	ND	(0.71)	[35.625]	ND	(0.71)	[35.423]	ND	(0.72)	[36.114]	ND	(0.7)	[35.039]
Endrin Ketone	ND	(1.8)	[35.625]	ND	(1.8)	[35.423]	ND	(1.8)	[36.114]	ND	(1.8)	[35.039]
Heptachlor	ND	(0.36)	[35.625]	ND	(0.35)	[35.423]	ND	(0.36)	[36.114]	ND	(0.35)	[35.039]
Heptachlor epoxide	ND	(0.36)	[35.625]	ND	(0.35)	[35.423]	ND	(0.36)	[36.114]	ND	(0.35)	[35.039]
Methoxychlor	ND	(1.8)	[35.625]	ND	(1.8)	[35.423]	ND	(1.8)	[36.114]	ND	(1.8)	[35.039]
PCB-1016	ND	(3.6)	[35.625]	ND	(3.5)	[35.423]	ND	(3.6)	[36.114]	ND	(3.5)	[35.039]
PCB-1221	ND	(7.1)	[35.625]	ND	(7.1)	[35.423]	ND	(7.2)	[36.114]	ND	(7)	[35.039]

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TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)										
	NONE 09 CAN97-09-08 34 - 36			NONE 09 CAN97-09-09 39 - 41			NONE 09 CAN97-09-10 44 - 46			NONE 09 CAN97-09-11 49 - 53		
PCB-1232	ND	(7.1)	[35.625]	ND	(7.1)	[35.423]	ND	(7.2)	[36.114]	ND	(7)	[35.039]
PCB-1242	ND	(3.6)	[35.625]	ND	(3.5)	[35.423]	ND	(3.6)	[36.114]	ND	(3.5)	[35.039]
PCB-1248	ND	(3.6)	[35.625]	ND	(3.5)	[35.423]	ND	(3.6)	[36.114]	ND	(3.5)	[35.039]
PCB-1254	ND	(7.1)	[35.625]	ND	(7.1)	[35.423]	ND	(7.2)	[36.114]	ND	(7)	[35.039]
PCB-1260	ND	(7.1)	[35.625]	ND	(7.1)	[35.423]	ND	(7.2)	[36.114]	ND	(7)	[35.039]
Toxaphene	ND	(18)	[35.625]	ND	(18)	[35.423]	ND	(18)	[36.114]	ND	(18)	[35.039]
alpha-BHC	ND	(0.36)	[35.625]	ND	(0.35)	[35.423]	ND	(0.36)	[36.114]	ND	(0.35)	[35.039]
beta-BHC	ND	(0.36)	[35.625]	ND	(0.35)	[35.423]	ND	(0.36)	[36.114]	ND	(0.35)	[35.039]
delta-BHC	ND	(0.36)	[35.625]	ND	(0.35)	[35.423]	0.41 GB	(0.36)	[36.114]	ND	(0.35)	[35.039]
gamma-BHC	ND	(0.36)	[35.625]	ND	(0.35)	[35.423]	0.28 J	(0.36)	[36.114]	ND	(0.35)	[35.039]
SW8150 - Chlorinated Herbicides (ug/kg)												
2,4,5-T	NA			ND	(7.1)	[35.411]	NA			NA		
2,4,5-TP (Silvex)	NA			ND	(6)	[35.411]	NA			NA		
2,4-D	NA			ND	(42)	[35.411]	NA			NA		
2,4-DB	NA			ND	(32)	[35.411]	NA			NA		
Dalapon	NA			ND	(210)	[35.411]	NA			NA		
Dicamba	NA			ND	(9.6)	[35.411]	NA			NA		
Dichloroprop	NA			14 J	(23)	[35.411]	NA			NA		
Dinoseb	NA			ND	(5.3)	[35.411]	NA			NA		
MCPA	NA			ND	(8800)	[35.411]	NA			NA		
MCPP	NA			ND	(6800)	[35.411]	NA			NA		
SW8240 - Volatile Organics (ug/kg)												
1,1,1-Trichloroethane	ND	(5.4)	[1.072]	ND	(5.3)	[1.063]	ND	(5.4)	[1.084]	ND	(5.3)	[1.052]
1,1,2,2-Tetrachloroethane	ND	(5.4)	[1.072]	ND	(5.3)	[1.063]	ND	(5.4)	[1.084]	ND	(5.3)	[1.052]
1,1,2-Trichloroethane	ND	(5.4)	[1.072]	ND	(5.3)	[1.063]	ND	(5.4)	[1.084]	ND	(5.3)	[1.052]
1,1-Dichloroethane	ND	(5.4)	[1.072]	ND	(5.3)	[1.063]	ND	(5.4)	[1.084]	ND	(5.3)	[1.052]
1,1-Dichloroethene	ND	(5.4)	[1.072]	ND	(5.3)	[1.063]	ND	(5.4)	[1.084]	ND	(5.3)	[1.052]
1,2,3-Trichloropropane	ND	(5.4)	[1.072]	ND	(5.3)	[1.063]	ND	(5.4)	[1.084]	ND	(5.3)	[1.052]
1,2-Dichloroethane	ND	(5.4)	[1.072]	ND	(5.3)	[1.063]	ND	(5.4)	[1.084]	ND	(5.3)	[1.052]

Compiled: 8 Feb · 1994 () = Reporting Limit [] = Factor = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 09 CAN97-09-08 34 - 36			NONE 09 CAN97-09-09 39 - 41			NONE 09 CAN97-09-10 44 - 46			NONE 09 CAN97-09-11 49 - 53		
1,2-Dichloropropane	ND	(5.4)	[1.072]	ND	(5.3)	[1.063]	ND	(5.4)	[1.084]	ND	(5.3)	[1.052]
2-Chloroethyl vinyl ether	ND	(11)	[1.072]	ND	(11)	[1.063]	ND	(11)	[1.084]	ND	(11)	[1.052]
2-Hexanone	ND	(54)	[1.072]	ND	(53)	[1.063]	ND	(54)	[1.084]	ND	(53)	[1.052]
4-Methyl-2-pentanone(MIBK)	ND	(54)	[1.072]	ND	(53)	[1.063]	ND	(54)	[1.084]	ND	(53)	[1.052]
Acetone	16 J	(110)	[1.072]	10 J	(110)	[1.063]	ND	(110)	[1.084]	ND	(110)	[1.052]
Acrolein	ND	(80)	[1.072]	ND	(80)	[1.063]	ND	(81)	[1.084]	ND	(79)	[1.052]
Acrylonitrile	ND	(54)	[1.072]	ND	(53)	[1.063]	ND	(54)	[1.084]	ND	(53)	[1.052]
Benzene	ND	(5.4)	[1.072]	ND	(5.3)	[1.063]	ND	(5.4)	[1.084]	ND	(5.3)	[1.052]
Bromodichloromethane	ND	(5.4)	[1.072]	ND	(5.3)	[1.063]	ND	(5.4)	[1.084]	ND	(5.3)	[1.052]
Bromomethane	ND	(11)	[1.072]	ND	(11)	[1.063]	ND	(11)	[1.084]	ND	(11)	[1.052]
Carbon disulfide	ND	(5.4)	[1.072]	ND	(5.3)	[1.063]	ND	(5.4)	[1.084]	ND	(5.3)	[1.052]
Carbon tetrachloride	ND	(5.4)	[1.072]	ND	(5.3)	[1.063]	ND	(5.4)	[1.084]	ND	(5.3)	[1.052]
Chlorobenzene	ND	(5.4)	[1.072]	ND	(5.3)	[1.063]	ND	(5.4)	[1.084]	ND	(5.3)	[1.052]
Chloroethane	ND	(11)	[1.072]	ND	(11)	[1.063]	ND	(11)	[1.084]	ND	(11)	[1.052]
Chloroform	ND	(5.4)	[1.072]	ND	(5.3)	[1.063]	ND	(5.4)	[1.084]	ND	(5.3)	[1.052]
Chloromethane	ND	(11)	[1.072]	ND	(11)	[1.063]	ND	(11)	[1.084]	ND	(11)	[1.052]
Decanal	5.4	()	[1.072]	NA			NA			NA		
Dibromochloromethane	ND	(5.4)	[1.072]	ND	(5.3)	[1.063]	ND	(5.4)	[1.084]	ND	(5.3)	[1.052]
Dibromomethane	ND	(5.4)	[1.072]	ND	(5.3)	[1.063]	ND	(5.4)	[1.084]	ND	(5.3)	[1.052]
Dichlorodifluoromethane	ND	(21)	[1.072]	ND	(21)	[1.063]	ND	(22)	[1.084]	ND	(21)	[1.052]
Ethyl acetate	NA			27	()	[1.063]	87	()	[1.084]	NA		
Ethyl benzene	ND	(5.4)	[1.072]	ND	(5.3)	[1.063]	ND	(5.4)	[1.084]	ND	(5.3)	[1.052]
Ethyl methacrylate	ND	(16)	[1.072]	ND	(16)	[1.063]	ND	(16)	[1.084]	ND	(16)	[1.052]
Iodomethane	ND	(5.4)	[1.072]	ND	(5.3)	[1.063]	ND	(5.4)	[1.084]	ND	(5.3)	[1.052]
Methyl acetate	NA			NA			13	()	[1.084]	NA		
Methyl ethyl ketone	ND	(110)	[1.072]	ND	(110)	[1.063]	ND	(110)	[1.084]	ND	(110)	[1.052]
Methylene chloride	ND	(5.4)	[1.072]	7.9 @	(5.3)	[1.063]	6.8 @	(5.4)	[1.084]	ND	(5.3)	[1.052]
Nonanal	6.4	()	[1.072]	NA			NA			NA		
Styrene	ND	(5.4)	[1.072]	ND	(5.3)	[1.063]	ND	(5.4)	[1.084]	ND	(5.3)	[1.052]

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TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)																
	NONE 09 CAN97-09-08 34 - 36			NONE 09 CAN97-09-09 39 - 41			NONE 09 CAN97-09-10 44 - 46			NONE 09 CAN97-09-11 49 - 53		
Tetrachloroethene	ND	(5.4)	[1.072]	ND	(5.3)	[1.063]	ND	(5.4)	[1.084]	ND	(5.3)	[1.052]
Toluene	ND	(5.4)	[1.072]	4.2 J	(5.3)	[1.063]	15 Ø	(5.4)	[1.084]	ND	(5.3)	[1.052]
Tribromomethane(Bromoform)	ND	(5.4)	[1.072]	ND	(5.3)	[1.063]	ND	(5.4)	[1.084]	ND	(5.3)	[1.052]
Trichloroethene	ND	(5.4)	[1.072]	ND	(5.3)	[1.063]	ND	(5.4)	[1.084]	ND	(5.3)	[1.052]
Trichlorofluoromethane	ND	(11)	[1.072]	ND	(11)	[1.063]	ND	(11)	[1.084]	ND	(11)	[1.052]
Unknown	18	()	[1.072]	NA			NA			NA		
Unknown hydrocarbon	NA			6.5	()	[1.063]	7.9	()	[1.084]	NA		
Vinyl acetate	ND	(5.4)	[1.072]	ND	(5.3)	[1.063]	ND	(5.4)	[1.084]	ND	(5.3)	[1.052]
Vinyl chloride	ND	(11)	[1.072]	ND	(11)	[1.063]	ND	(11)	[1.084]	ND	(11)	[1.052]
Xylenes	ND	(5.4)	[1.072]	ND	(5.3)	[1.063]	ND	(5.4)	[1.084]	ND	(5.3)	[1.052]
cis-1,3-Dichloropropene	ND	(5.4)	[1.072]	ND	(5.3)	[1.063]	ND	(5.4)	[1.084]	ND	(5.3)	[1.052]
trans-1,2-Dichloroethene	ND	(5.4)	[1.072]	ND	(5.3)	[1.063]	ND	(5.4)	[1.084]	ND	(5.3)	[1.052]
trans-1,3-Dichloropropene	ND	(5.4)	[1.072]	ND	(5.3)	[1.063]	ND	(5.4)	[1.084]	ND	(5.3)	[1.052]
trans-1,4-Dichloro-2-butene	ND	(11)	[1.072]	ND	(11)	[1.063]	ND	(11)	[1.084]	ND	(11)	[1.052]
SW8270 - Semivolatile Organics (ug/kg)												
1,2,4,5-Tetrachlorobenzene	ND	(360)	[.036]	ND	(350)	[.035]	ND	(360)	[.036]	ND	(350)	[.035]
1,2,4-Trichlorobenzene	ND	(360)	[.036]	ND	(350)	[.035]	ND	(360)	[.036]	ND	(350)	[.035]
1,2-Dichlorobenzene	ND	(360)	[.036]	ND	(350)	[.035]	ND	(360)	[.036]	ND	(350)	[.035]
1,2-Diphenylhydrazine	ND	(360)	[.036]	ND	(350)	[.035]	ND	(360)	[.036]	ND	(350)	[.035]
1,3-Dichlorobenzene	ND	(360)	[.036]	ND	(350)	[.035]	ND	(360)	[.036]	ND	(350)	[.035]
1,4-Dichlorobenzene	ND	(360)	[.036]	ND	(350)	[.035]	ND	(360)	[.036]	ND	(350)	[.035]
1-Chloronaphthalene	ND	(360)	[.036]	ND	(350)	[.035]	ND	(360)	[.036]	ND	(350)	[.035]
1-Naphthylamine	ND	(360)	[.036]	ND	(350)	[.035]	ND	(360)	[.036]	ND	(350)	[.035]
2,3,4,6-Tetrachlorophenol	ND	(710)	[.036]	ND	(710)	[.035]	ND	(720)	[.036]	ND	(700)	[.035]
2,4,5-Trichlorophenol	ND	(360)	[.036]	ND	(350)	[.035]	ND	(360)	[.036]	ND	(350)	[.035]
2,4,6-Trichlorophenol	ND	(360)	[.036]	ND	(350)	[.035]	ND	(360)	[.036]	ND	(350)	[.035]
2,4-Dichlorophenol	ND	(360)	[.036]	ND	(350)	[.035]	ND	(360)	[.036]	ND	(350)	[.035]
2,4-Dimethylphenol	ND	(360)	[.036]	ND	(350)	[.035]	ND	(360)	[.036]	ND	(350)	[.035]
2,4-Dinitrophenol	ND	(1800)	[.036]	ND	(1800)	[.035]	ND	(1800)	[.036]	ND	(1800)	[.035]

Compiled: 8 Feb 1994 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)																
	NONE 09 CAN97-09-08 34 - 36				NONE 09 CAN97-09-09 39 - 41				NONE 09 CAN97-09-10 44 - 46				NONE 09 CAN97-09-11 49 - 53			
2,4-Dinitrotoluene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
2,6-Dichlorophenol	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
2,6-Dinitrotoluene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
2-Chloronaphthalene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
2-Chlorophenol	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
2-Methylnaphthalene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
2-Methylphenol(o-cresol)	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
2-Naphthylamine	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
2-Nitroaniline	ND	(1800)	[	.036]	ND	(1800)	[	.035]	ND	(1800)	[	.036]	ND	(1800)	[	.035]
2-Nitrophenol	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
2-Picoline	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
3,3'-Dichlorobenzidine	ND	(710)	[	.036]	ND	(710)	[	.035]	ND	(720)	[	.036]	ND	(700)	[	.035]
3-Methylcholanthrene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
3-Nitroaniline	ND	(1800)	[	.036]	ND	(1800)	[	.035]	ND	(1800)	[	.036]	ND	(1800)	[	.035]
4,6-Dinitro-2-methylphenol	ND	(1800)	[	.036]	ND	(1800)	[	.035]	ND	(1800)	[	.036]	ND	(1800)	[	.035]
4-Aminobiphenyl	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
4-Bromophenyl phenyl ether	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
4-Chloro-3-methylphenol	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
4-Chlorophenyl phenyl ether	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
4-Methylphenol(p-cresol)	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
4-Nitroaniline	ND	(1800)	[	.036]	ND	(1800)	[	.035]	ND	(1800)	[	.036]	ND	(1800)	[	.035]
4-Nitrophenol	ND	(1800)	[	.036]	ND	(1800)	[	.035]	ND	(1800)	[	.036]	ND	(1800)	[	.035]
7,12-Dimethylbenz(a)anthracene	ND	(890)	[	.036]	ND	(890)	[	.035]	ND	(900)	[	.036]	ND	(880)	[	.035]
Acenaphthene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Acenaphthylene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Acetophenone	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Aniline	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Anthracene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Benzidine	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]

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TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 09 CAN97-09-08 34 - 36			NONE 09 CAN97-09-09 39 - 41			NONE 09 CAN97-09-10 44 - 46			NONE 09 CAN97-09-11 49 - 53		
Benzo(a)anthracene	ND	(360)	[.036]	ND	(350)	[.035]	ND	(360)	[.036]	ND	(350)	[.035]
Benzo(a)pyrene	ND	(360)	[.036]	ND	(350)	[.035]	ND	(360)	[.036]	ND	(350)	[.035]
Benzo(b)fluoranthene	ND	(360)	[.036]	ND	(350)	[.035]	ND	(360)	[.036]	ND	(350)	[.035]
Benzo(g,h,i)perylene	ND	(360)	[.036]	ND	(350)	[.035]	ND	(360)	[.036]	ND	(350)	[.035]
Benzo(k)fluoranthene	ND	(360)	[.036]	ND	(350)	[.035]	ND	(360)	[.036]	ND	(350)	[.035]
Benzoic acid	ND	(1800)	[.036]	ND	(1800)	[.035]	ND	(1800)	[.036]	ND	(1800)	[.035]
Benzyl alcohol	ND	(360)	[.036]	ND	(350)	[.035]	ND	(360)	[.036]	ND	(350)	[.035]
Butylbenzylphthalate	ND	(360)	[.036]	ND	(350)	[.035]	ND	(360)	[.036]	ND	(350)	[.035]
Chrysene	ND	(360)	[.036]	ND	(350)	[.035]	ND	(360)	[.036]	ND	(350)	[.035]
Di-n-octylphthalate	ND	(360)	[.036]	ND	(350)	[.035]	ND	(360)	[.036]	ND	(350)	[.035]
Dibenz(a,h)anthracene	ND	(360)	[.036]	ND	(350)	[.035]	ND	(360)	[.036]	ND	(350)	[.035]
Dibenz(a,j)acridine	ND	(360)	[.036]	ND	(350)	[.035]	ND	(360)	[.036]	ND	(350)	[.035]
Dibenzofuran	ND	(360)	[.036]	ND	(350)	[.035]	ND	(360)	[.036]	ND	(350)	[.035]
Dibutylphthalate	ND	(360)	[.036]	ND	(350)	[.035]	ND	(360)	[.036]	ND	(350)	[.035]
Diethylphthalate	ND	(360)	[.036]	ND	(350)	[.035]	ND	(360)	[.036]	ND	(350)	[.035]
Dimethylphenethylamine	ND	(360)	[.036]	ND	(350)	[.035]	ND	(360)	[.036]	ND	(350)	[.035]
Dimethylphthalate	ND	(360)	[.036]	ND	(350)	[.035]	ND	(360)	[.036]	ND	(350)	[.035]
Diphenylamine	ND	(360)	[.036]	ND	(350)	[.035]	ND	(360)	[.036]	ND	(350)	[.035]
Ethyl methanesulfonate	ND	(360)	[.036]	ND	(350)	[.035]	ND	(360)	[.036]	ND	(350)	[.035]
Fluoranthene	ND	(360)	[.036]	ND	(350)	[.035]	ND	(360)	[.036]	ND	(350)	[.035]
Fluorene	ND	(360)	[.036]	ND	(350)	[.035]	ND	(360)	[.036]	ND	(350)	[.035]
Hexachlorobenzene	ND	(360)	[.036]	ND	(350)	[.035]	ND	(360)	[.036]	ND	(350)	[.035]
Hexachlorobutadiene	ND	(360)	[.036]	ND	(350)	[.035]	ND	(360)	[.036]	ND	(350)	[.035]
Hexachlorocyclopentadiene	ND	(360)	[.036]	ND	(350)	[.035]	ND	(360)	[.036]	ND	(350)	[.035]
Hexachloroethane	ND	(360)	[.036]	ND	(350)	[.035]	ND	(360)	[.036]	ND	(350)	[.035]
Indeno(1,2,3-cd)pyrene	ND	(360)	[.036]	ND	(350)	[.035]	ND	(360)	[.036]	ND	(350)	[.035]
Isophorone	ND	(360)	[.036]	ND	(350)	[.035]	ND	(360)	[.036]	ND	(350)	[.035]
Methyl methanesulfonate	ND	(360)	[.036]	ND	(350)	[.035]	ND	(360)	[.036]	ND	(350)	[.035]
N-Nitroso-di-n-butylamine	ND	(360)	[.036]	ND	(350)	[.035]	ND	(360)	[.036]	ND	(350)	[.035]

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TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)																
	NONE 09 CAN97-09-08 34 - 36				NONE 09 CAN97-09-09 39 - 41				NONE 09 CAN97-09-10 44 - 46				NONE 09 CAN97-09-11 49 - 53			
N-Nitrosodimethylamine	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
N-Nitrosodiphenylamine	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
N-Nitrosodipropylamine	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
N-Nitrosopiperidine	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Naphthalene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Nitrobenzene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Pentachlorobenzene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Pentachloronitrobenzene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Pentachlorophenol	ND	(1800)	[	.036]	ND	(1800)	[	.035]	ND	(1800)	[	.036]	ND	(1800)	[	.035]
Phenacetin	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Phenanthrene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Phenol	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Pronamide	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Pyrene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Pyridine	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Unknown	NA				NA				140	(0)	[	.036]	210	(0)	[	.035]
Unknown B	NA				NA				NA				350	(0)	[	.035]
Unknown cyclic ether B	NA				NA				NA				320	(0)	[	.035]
bis(2-Chloroethoxy)methane	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
bis(2-Chloroethyl)ether	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
bis(2-Chloroisopropyl)ether	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
bis(2-Ethylhexyl)phthalate	ND	(360)	[	.036]	35 JB	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
p-Chloroaniline	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
p-Dimethylaminoazobenzene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]

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TABLE B1

RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)												
	NONE 09 CAN97-09-12 54 - 56			NONE 09 CAN97-09-13 59 - 61			NONE 10 CAN97-10-01 0 - 2			NONE 10 CAN97-10-02 4 - 6			
EPA 418.1 - Total Recoverable Petroleum Hydrocarbons (mg/kg)													
Hydrocarbons	3.5 @	(26)	[5.147]	3.5 @	(26)	[5.123]	48 @	(27)	[5.310]	ND	(27)	[5.491]	
SW8080 - Organochlorine Pesticides and PCBs (ug/kg)													
4,4'-DDD	ND	(0.34)	[34.353]	ND	(0.34)	[34.106]	ND	(3.6)	[355.114]	0.43 GB@	(0.37)	[36.711]	
4,4'-DDE	ND	(0.34)	[34.353]	ND	(0.34)	[34.106]	220	(3.6)	[355.114]	0.21 J	(0.37)	[36.711]	
4,4'-DDT	ND	(0.69)	[34.353]	ND	(0.68)	[34.106]	110	(7.1)	[355.114]	0.51 J	(0.73)	[36.711]	
Aldrin	ND	(0.34)	[34.353]	ND	(0.34)	[34.106]	2.1 J	(3.6)	[355.114]	ND	(0.37)	[36.711]	
Chlordane	ND	(1.7)	[34.353]	ND	(1.7)	[34.106]	ND	(18)	[355.114]	ND	(1.8)	[36.711]	
Dieldrin	ND	(0.34)	[34.353]	ND	(0.34)	[34.106]	ND	(3.6)	[355.114]	ND	(0.37)	[36.711]	
Endosulfan I	ND	(0.34)	[34.353]	ND	(0.34)	[34.106]	ND	(3.6)	[355.114]	ND	(0.37)	[36.711]	
Endosulfan II	ND	(1)	[34.353]	ND	(1)	[34.106]	ND	(11)	[355.114]	ND	(1.1)	[36.711]	
Endosulfan Sulfate	ND	(1.7)	[34.353]	ND	(1.7)	[34.106]	ND	(18)	[355.114]	ND	(1.8)	[36.711]	
Endrin	ND	(0.34)	[34.353]	ND	(0.34)	[34.106]	ND	(3.6)	[355.114]	ND	(0.37)	[36.711]	
Endrin Aldehyde	ND	(0.69)	[34.353]	ND	(0.68)	[34.106]	ND	(7.1)	[355.114]	ND	(0.73)	[36.711]	
Endrin Ketone	ND	(1.7)	[34.353]	ND	(1.7)	[34.106]	ND	(18)	[355.114]	ND	(1.8)	[36.711]	
Heptachlor	ND	(0.34)	[34.353]	ND	(0.34)	[34.106]	ND	(3.6)	[355.114]	0.11 J	(0.37)	[36.711]	
Heptachlor epoxide	ND	(0.34)	[34.353]	ND	(0.34)	[34.106]	1.8 J	(3.6)	[355.114]	ND	(0.37)	[36.711]	
Methoxychlor	ND	(1.7)	[34.353]	ND	(1.7)	[34.106]	ND	(18)	[355.114]	ND	(1.8)	[36.711]	
PCB-1016	ND	(3.4)	[34.353]	ND	(3.4)	[34.106]	ND	(36)	[355.114]	ND	(3.7)	[36.711]	
PCB-1221	ND	(6.9)	[34.353]	ND	(6.8)	[34.106]	ND	(71)	[355.114]	ND	(7.3)	[36.711]	
PCB-1232	ND	(6.9)	[34.353]	ND	(6.8)	[34.106]	ND	(71)	[355.114]	ND	(7.3)	[36.711]	
PCB-1242	ND	(3.4)	[34.353]	ND	(3.4)	[34.106]	ND	(36)	[355.114]	ND	(3.7)	[36.711]	
PCB-1243	ND	(3.4)	[34.353]	ND	(3.4)	[34.106]	ND	(36)	[355.114]	ND	(3.7)	[36.711]	
PCB-1254	ND	(6.9)	[34.353]	ND	(6.8)	[34.106]	ND	(71)	[355.114]	ND	(7.3)	[36.711]	
PCB-1260	ND	(6.9)	[34.353]	ND	(6.8)	[34.106]	ND	(71)	[355.114]	ND	(7.3)	[36.711]	
Toxaphene	ND	(17)	[34.353]	ND	(17)	[34.106]	ND	(180)	[355.114]	ND	(18)	[36.711]	
alpha-BHC	ND	(0.34)	[34.353]	ND	(0.34)	[34.106]	ND	(3.6)	[355.114]	ND	(0.37)	[36.711]	
beta-BHC	ND	(0.34)	[34.353]	ND	(0.34)	[34.106]	ND	(3.6)	[355.114]	ND	(0.37)	[36.711]	
delta-BHC	ND	(0.34)	[34.353]	ND	(0.34)	[34.106]	ND	(3.6)	[355.114]	ND	(0.37)	[36.711]	

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TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID	LOCATION ID	SAMPLE ID	BEG. DEPTH - END DEPTH (FT.)										
	NONE	09	CAN97-09-12	54 - 56			NONE	09	CAN97-09-13	59 - 61			NONE	10	CAN97-10-01	0 - 2			NONE	10	CAN97-10-02	4 - 6		
gamma-BHC	ND	(0.34)	[34.353]				ND	(0.34)	[34.106]				ND	(3.6)	[355.114]				ND	(0.37)	[36.711]			
SW8240 - Volatile Organics (ug/kg)																								
1,1,1-Trichloroethane	ND	(5.2)	[1.031]				ND	(5.1)	[1.025]				ND	(5.3)	[1.068]				ND	(5.5)	[1.104]			
1,1,2,2-Tetrachloroethane	ND	(5.2)	[1.031]				ND	(5.1)	[1.025]				ND	(5.3)	[1.068]				ND	(5.5)	[1.104]			
1,1,2-Trichloroethane	ND	(5.2)	[1.031]				ND	(5.1)	[1.025]				ND	(5.3)	[1.068]				ND	(5.5)	[1.104]			
1,1-Dichloroethane	ND	(5.2)	[1.031]				ND	(5.1)	[1.025]				ND	(5.3)	[1.068]				ND	(5.5)	[1.104]			
1,1-Dichloroethene	ND	(5.2)	[1.031]				ND	(5.1)	[1.025]				ND	(5.3)	[1.068]				ND	(5.5)	[1.104]			
1,2,3-Trichloropropane	ND	(5.2)	[1.031]				ND	(5.1)	[1.025]				ND	(5.3)	[1.068]				ND	(5.5)	[1.104]			
1,2-Dichloroethane	ND	(5.2)	[1.031]				ND	(5.1)	[1.025]				ND	(5.3)	[1.068]				ND	(5.5)	[1.104]			
1,2-Dichloropropane	ND	(5.2)	[1.031]				ND	(5.1)	[1.025]				ND	(5.3)	[1.068]				ND	(5.5)	[1.104]			
2-Chloroethyl vinyl ether	ND	(10)	[1.031]				ND	(10)	[1.025]				ND	(11)	[1.068]				ND	(11)	[1.104]			
2-Hexanone	ND	(52)	[1.031]				ND	(51)	[1.025]				ND	(53)	[1.068]				ND	(55)	[1.104]			
4-Methyl-2-pentanone(MIBK)	ND	(52)	[1.031]				ND	(51)	[1.025]				ND	(53)	[1.068]				ND	(55)	[1.104]			
Acetone	ND	(100)	[1.031]				ND	(100)	[1.025]				ND	(110)	[1.068]				ND	(110)	[1.104]			
Acrolein	ND	(77)	[1.031]				ND	(77)	[1.025]				ND	(80)	[1.068]				ND	(83)	[1.104]			
Acrylonitrile	ND	(52)	[1.031]				ND	(51)	[1.025]				ND	(53)	[1.068]				ND	(55)	[1.104]			
Benzene	ND	(5.2)	[1.031]				ND	(5.1)	[1.025]				ND	(5.3)	[1.068]				ND	(5.5)	[1.104]			
Bromodichloromethane	ND	(5.2)	[1.031]				ND	(5.1)	[1.025]				ND	(5.3)	[1.068]				ND	(5.5)	[1.104]			
Bromomethane	ND	(10)	[1.031]				ND	(10)	[1.025]				ND	(11)	[1.068]				ND	(11)	[1.104]			
Carbon disulfide	ND	(5.2)	[1.031]				ND	(5.1)	[1.025]				ND	(5.3)	[1.068]				ND	(5.5)	[1.104]			
Carbon tetrachloride	ND	(5.2)	[1.031]				ND	(5.1)	[1.025]				ND	(5.3)	[1.068]				ND	(5.5)	[1.104]			
Chlorobenzene	ND	(5.2)	[1.031]				ND	(5.1)	[1.025]				ND	(5.3)	[1.068]				ND	(5.5)	[1.104]			
Chloroethane	ND	(10)	[1.031]				ND	(10)	[1.025]				ND	(11)	[1.068]				ND	(11)	[1.104]			
Chloroform	ND	(5.2)	[1.031]				ND	(5.1)	[1.025]				ND	(5.3)	[1.068]				ND	(5.5)	[1.104]			
Chloromethane	ND	(10)	[1.031]				ND	(10)	[1.025]				ND	(11)	[1.068]				ND	(11)	[1.104]			
Dibromochloromethane	ND	(5.2)	[1.031]				ND	(5.1)	[1.025]				ND	(5.3)	[1.068]				ND	(5.5)	[1.104]			
Dibromomethane	ND	(5.2)	[1.031]				ND	(5.1)	[1.025]				ND	(5.3)	[1.068]				ND	(5.5)	[1.104]			
Dichlorodifluoromethane	ND	(21)	[1.031]				ND	(20)	[1.025]				ND	(21)	[1.068]				ND	(22)	[1.104]			
Ethyl acetate	8.4	()	[1.031]				5	()	[1.025]				NA						NA					

Compiled: 8 February 1994 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 09 CAN97-09-12 54 - 56			NONE 09 CAN97-09-13 59 - 61			NONE 10 CAN97-10-01 0 - 2			NONE 10 CAN97-10-02 4 - 6		
Ethyl benzene	ND	(5.2)	[1.031]	ND	(5.1)	[1.025]	ND	(5.3)	[1.068]	ND	(5.5)	[1.104]
Ethyl methacrylate	ND	(15)	[1.031]	ND	(15)	[1.025]	ND	(16)	[1.068]	ND	(17)	[1.104]
Iodomethane	ND	(5.2)	[1.031]	ND	(5.1)	[1.025]	ND	(5.3)	[1.068]	ND	(5.5)	[1.104]
Methyl ethyl ketone	ND	(100)	[1.031]	ND	(100)	[1.025]	ND	(110)	[1.068]	ND	(110)	[1.104]
Methylene chloride	ND	(5.2)	[1.031]	3.5 J	(5.1)	[1.025]	4.9 J	(5.3)	[1.068]	4.9 J	(5.5)	[1.104]
Styrene	ND	(5.2)	[1.031]	ND	(5.1)	[1.025]	ND	(5.3)	[1.068]	ND	(5.5)	[1.104]
Tetrachloroethene	ND	(5.2)	[1.031]	ND	(5.1)	[1.025]	ND	(5.3)	[1.068]	ND	(5.5)	[1.104]
Toluene	1 J	(5.2)	[1.031]	0.73 J	(5.1)	[1.025]	4.7 J	(5.3)	[1.068]	ND	(5.5)	[1.104]
Tribromomethane(Bromoform)	ND	(5.2)	[1.031]	ND	(5.1)	[1.025]	ND	(5.3)	[1.068]	ND	(5.5)	[1.104]
Trichloroethene	ND	(5.2)	[1.031]	ND	(5.1)	[1.025]	ND	(5.3)	[1.068]	ND	(5.5)	[1.104]
Trichlorofluoromethane	ND	(10)	[1.031]	ND	(10)	[1.025]	ND	(11)	[1.068]	ND	(11)	[1.104]
Vinyl acetate	ND	(5.2)	[1.031]	ND	(5.1)	[1.025]	ND	(5.3)	[1.068]	ND	(5.5)	[1.104]
Vinyl chloride	ND	(10)	[1.031]	ND	(10)	[1.025]	ND	(11)	[1.068]	ND	(11)	[1.104]
Xylenes	ND	(5.2)	[1.031]	ND	(5.1)	[1.025]	ND	(5.3)	[1.068]	ND	(5.5)	[1.104]
cis-1,3-Dichloropropene	ND	(5.2)	[1.031]	ND	(5.1)	[1.025]	ND	(5.3)	[1.068]	ND	(5.5)	[1.104]
trans-1,2-Dichloroethene	ND	(5.2)	[1.031]	ND	(5.1)	[1.025]	ND	(5.3)	[1.068]	ND	(5.5)	[1.104]
trans-1,3-Dichloropropene	ND	(5.2)	[1.031]	ND	(5.1)	[1.025]	ND	(5.3)	[1.068]	ND	(5.5)	[1.104]
trans-1,4-Dichloro-2-butene	ND	(10)	[1.031]	ND	(10)	[1.025]	ND	(11)	[1.068]	ND	(11)	[1.104]
SW8270 - Semivolatile Organics (ug/kg)												
1,2,4,5-Tetrachlorobenzene	ND	(340)	[.034]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
1,2,4-Trichlorobenzene	ND	(340)	[.034]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
1,2-Dichlorobenzene	ND	(340)	[.034]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
1,2-Diphenylhydrazine	ND	(340)	[.034]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
1,3-Dichlorobenzene	ND	(340)	[.034]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
1,4-Dichlorobenzene	ND	(340)	[.034]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
1-Chloronaphthalene	ND	(340)	[.034]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
1-Naphthylamine	ND	(340)	[.034]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
2,3,4,6-Tetrachlorophenol	ND	(690)	[.034]	ND	(680)	[.034]	ND	(710)	[.036]	ND	(730)	[.037]
2,4,5-Trichlorophenol	ND	(340)	[.034]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]

Compiled: 8 Febr 1994 () = Reporting Limit [] = Factor · Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)																
	NONE 09 CAN97-09-12 54 - 56				NONE 09 CAN97-09-13 59 - 61				NONE 10 CAN97-10-01 0 - 2				NONE 10 CAN97-10-02 4 - 6			
2,4,6-Trichlorophenol	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(360)	[	.036]	ND	(370)	[	.037]
2,4-Dichlorophenol	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(360)	[	.036]	ND	(370)	[	.037]
2,4-Dimethylphenol	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(360)	[	.036]	ND	(370)	[	.037]
2,4-Dinitrophenol	ND	(1700)	[	.034]	ND	(1700)	[	.034]	ND	(1800)	[	.036]	ND	(1800)	[	.037]
2,4-Dinitrotoluene	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(360)	[	.036]	ND	(370)	[	.037]
2,6-Dichlorophenol	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(360)	[	.036]	ND	(370)	[	.037]
2,6-Dinitrotoluene	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(360)	[	.036]	ND	(370)	[	.037]
2-Chloronaphthalene	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(360)	[	.036]	ND	(370)	[	.037]
2-Chlorophenol	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(360)	[	.036]	ND	(370)	[	.037]
2-Methylnaphthalene	ND	(340)	[	.034]	ND	(340)	[	.034]	37 J	(360)	[	.036]	ND	(370)	[	.037]
2-Methylphenol(o-cresol)	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(360)	[	.036]	ND	(370)	[	.037]
2-Naphthylamine	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(360)	[	.036]	ND	(370)	[	.037]
2-Nitroaniline	ND	(1700)	[	.034]	ND	(1700)	[	.034]	ND	(1800)	[	.036]	ND	(1800)	[	.037]
2-Nitrophenol	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(360)	[	.036]	ND	(370)	[	.037]
2-Picoline	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(360)	[	.036]	ND	(370)	[	.037]
3,3'-Dichlorobenzidine	ND	(690)	[	.034]	ND	(680)	[	.034]	ND	(710)	[	.036]	ND	(730)	[	.037]
3-Methylcholanthrene	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(360)	[	.036]	ND	(370)	[	.037]
3-Nitroaniline	ND	(1700)	[	.034]	ND	(1700)	[	.034]	ND	(1800)	[	.036]	ND	(1800)	[	.037]
4,6-Dinitro-2-methylphenol	ND	(1700)	[	.034]	ND	(1700)	[	.034]	ND	(1800)	[	.036]	ND	(1800)	[	.037]
4-Aminobiphenyl	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(360)	[	.036]	ND	(370)	[	.037]
4-Bromophenyl phenyl ether	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(360)	[	.036]	ND	(370)	[	.037]
4-Chloro-3-methylphenol	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(360)	[	.036]	ND	(370)	[	.037]
4-Chlorophenyl phenyl ether	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(360)	[	.036]	ND	(370)	[	.037]
4-Methylphenol(p-cresol)	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(360)	[	.036]	ND	(370)	[	.037]
4-Nitroaniline	ND	(1700)	[	.034]	ND	(1700)	[	.034]	ND	(1800)	[	.036]	ND	(1800)	[	.037]
4-Nitrophenol	ND	(1700)	[	.034]	ND	(1700)	[	.034]	ND	(1800)	[	.036]	ND	(1800)	[	.037]
7,12-Dimethylbenz(a)anthracene	ND	(860)	[	.034]	ND	(850)	[	.034]	ND	(890)	[	.036]	ND	(920)	[	.037]
Acenaphthene	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(360)	[	.036]	ND	(370)	[	.037]
Acenaphthylene	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(360)	[	.036]	ND	(370)	[	.037]

Compiled: 8 February 1994 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 09 CAN97-09-12 54 - 56			NONE 09 CAN97-09-13 59 - 61			NONE 10 CAN97-10-01 0 - 2			NONE 10 CAN97-10-02 4 - 6		
Acetophenone	ND	(340)	[.034]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
Aniline	ND	(340)	[.034]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
Anthracene	ND	(340)	[.034]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
Benzidine	ND	(340)	[.034]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
Benzo(a)anthracene	ND	(340)	[.034]	ND	(340)	[.034]	10 J	(360)	[.036]	ND	(370)	[.037]
Benzo(a)pyrene	ND	(340)	[.034]	ND	(340)	[.034]	8.4 J	(360)	[.036]	ND	(370)	[.037]
Benzo(b)fluoranthene	ND	(340)	[.034]	ND	(340)	[.034]	23 JX	(360)	[.036]	ND	(370)	[.037]
Benzo(g,h,i)perylene	ND	(340)	[.034]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
Benzo(k)fluoranthene	ND	(340)	[.034]	ND	(340)	[.034]	23 JX	(360)	[.036]	ND	(370)	[.037]
Benzoic acid	ND	(1700)	[.034]	ND	(1700)	[.034]	ND	(1800)	[.036]	ND	(1800)	[.037]
Benzyl alcohol	ND	(340)	[.034]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
Butylbenzylphthalate	ND	(340)	[.034]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
Chrysene	ND	(340)	[.034]	ND	(340)	[.034]	15 J	(360)	[.036]	ND	(370)	[.037]
Cyclohexenol B	180	(0)	[.034]	NA			NA			NA		
Cyclohexenone	NA			NA			NA			290	(0)	[.037]
Di-n-octylphthalate	ND	(340)	[.034]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
Dibenz(a,h)anthracene	ND	(340)	[.034]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
Dibenz(a,j)acridine	ND	(340)	[.034]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
Dibenzofuran	ND	(340)	[.034]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
Dibutylphthalate	ND	(340)	[.034]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
Diethylphthalate	ND	(340)	[.034]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
Dimethylphenethylamine	ND	(340)	[.034]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
Dimethylphthalate	ND	(340)	[.034]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
Diphenylamine	ND	(340)	[.034]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
Ethyl methanesulfonate	ND	(340)	[.034]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
Fluoranthene	ND	(340)	[.034]	ND	(340)	[.034]	10 J	(360)	[.036]	ND	(370)	[.037]
Fluorene	ND	(340)	[.034]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
Hexachlorobenzene	ND	(340)	[.034]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
Hexachlorobutadiene	ND	(340)	[.034]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]

Compiled: 8 Feb 1994 () = Reporting Limit [] = Factor Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 09 CAN97-09-12 54 - 56			NONE 09 CAN97-09-13 59 - 61			NONE 10 CAN97-10-01 0 - 2			NONE 10 CAN97-10-02 4 - 6		
Hexachlorocyclopentadiene	ND	(340)	[.034]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
Hexachloroethane	ND	(340)	[.034]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
Indeno(1,2,3-cd)pyrene	ND	(340)	[.034]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
Isophorone	ND	(340)	[.034]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
Methyl methanesulfonate	ND	(340)	[.034]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
N-Nitroso-di-n-butylamine	ND	(340)	[.034]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
N-Nitrosodimethylamine	ND	(340)	[.034]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
N-Nitrosodiphenylamine	ND	(340)	[.034]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
N-Nitrosodipropylamine	ND	(340)	[.034]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
N-Nitrosopiperidine	ND	(340)	[.034]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
Naphthalene	ND	(340)	[.034]	ND	(340)	[.034]	21 J	(360)	[.036]	ND	(370)	[.037]
Nitrobenzene	ND	(340)	[.034]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
Pentachlorobenzene	ND	(340)	[.034]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
Pentachloronitrobenzene	ND	(340)	[.034]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
Pentachlorophenol	ND	(1700)	[.034]	ND	(1700)	[.034]	ND	(1800)	[.036]	ND	(1800)	[.037]
Phenacetin	ND	(340)	[.034]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
Phenanthrene	ND	(340)	[.034]	ND	(340)	[.034]	17 J	(360)	[.036]	ND	(370)	[.037]
Phenol	ND	(340)	[.034]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
Pronamide	ND	(340)	[.034]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
Pyrene	ND	(340)	[.034]	ND	(340)	[.034]	8.7 J	(360)	[.036]	ND	(370)	[.037]
Pyridine	ND	(340)	[.034]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
Trichloropropene B	180	(0)	[.034]	NA			NA			NA		
Unknown	220	(0)	[.034]	NA			140	(0)	[.036]	550	(0)	[.037]
Unknown alkane	NA			NA			210	(0)	[.036]	NA		
Unknown cyclic ether B	650	(0)	[.034]	NA			NA			NA		
Unknown naphthalene	NA			NA			140	(0)	[.036]	NA		
bis(2-Chloroethoxy)methane	ND	(340)	[.034]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
bis(2-Chloroethyl)ether	ND	(340)	[.034]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
bis(2-Chloroisopropyl)ether	ND	(340)	[.034]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 09 CAN97-09-12 54 - 56			NONE 09 CAN97-09-13 59 - 61			NONE 10 CAN97-10-01 0 - 2			NONE 10 CAN97-10-02 4 - 6		
bis(2-Ethylhexyl)phthalate	ND	(340)	[.034]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
p-Chloroaniline	ND	(340)	[.034]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
p-Dimethylaminoazobenzene	ND	(340)	[.034]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 10 CAN97-10-03 9 - 11			NONE 10 CAN97-10-04 14 - 16			NONE 10 CAN97-10-05 19 - 21			NONE 10 CAN97-10-99 Dup of CAN97-10-05 19 - 21		
EPA 418.1 - Total Recoverable Petroleum Hydrocarbons (mg/kg)												
Hydrocarbons	ND	(27)	[5.367]	ND	(28)	[5.510]	ND	(28)	[5.654]	ND	(28)	[5.618]
SW8015 - Total Petroleum Hydrocarbons (ug/kg)												
Benzene (2)	8.7 J	(32)	[106.000]	NA			NA			NA		
Diesel (2)	7700 GB@	(5400)	[107.759]	NA			NA			NA		
Ethylbenzene (2)	ND	(32)	[106.000]	NA			NA			NA		
Gasoline (2)	ND	(5300)	[106.000]	NA			NA			NA		
Jet fuel (2)	ND	(11000)	[107.759]	NA			NA			NA		
Kerosene (2)	ND	(11000)	[107.759]	NA			NA			NA		
Toluene (2)	ND	(32)	[106.000]	NA			NA			NA		
Xylenes (total) (2)	6.1 J	(53)	[106.000]	NA			NA			NA		
SW8080 - Organochlorine Pesticides and PCBs (ug/kg)												
4,4'-DDD	ND	(0.36)	[35.830]	0.4 GB@	(0.37)	[36.711]	ND	(0.38)	[37.622]	0.46 GB@	(0.38)	[37.538]
4,4'-DDE	0.082 J	(0.36)	[35.830]	1.2 @	(0.37)	[36.711]	0.076 J	(0.38)	[37.622]	ND	(0.38)	[37.538]
4,4'-DDT	ND	(0.72)	[35.830]	0.83 @	(0.73)	[36.711]	0.18 J	(0.75)	[37.622]	0.73 J	(0.75)	[37.538]
Aldrin	ND	(0.36)	[35.830]	ND	(0.37)	[36.711]	ND	(0.38)	[37.622]	ND	(0.38)	[37.538]
Chlordane	ND	(1.8)	[35.830]	ND	(1.8)	[36.711]	ND	(1.9)	[37.622]	ND	(1.9)	[37.538]
Dieldrin	ND	(0.36)	[35.830]	ND	(0.37)	[36.711]	ND	(0.38)	[37.622]	ND	(0.38)	[37.538]
Endosulfan I	ND	(0.36)	[35.830]	ND	(0.37)	[36.711]	ND	(0.38)	[37.622]	ND	(0.38)	[37.538]
Endosulfan II	ND	(1.1)	[35.830]	ND	(1.1)	[36.711]	ND	(1.1)	[37.622]	ND	(1.1)	[37.538]
Endosulfan Sulfate	ND	(1.8)	[35.830]	ND	(1.8)	[36.711]	ND	(1.9)	[37.622]	ND	(1.9)	[37.538]
Endrin	ND	(0.36)	[35.830]	ND	(0.37)	[36.711]	ND	(0.38)	[37.622]	0.17 J	(0.38)	[37.538]
Endrin Aldehyde	ND	(0.72)	[35.830]	ND	(0.73)	[36.711]	ND	(0.75)	[37.622]	ND	(0.75)	[37.538]
Endrin Ketone	ND	(1.8)	[35.830]	ND	(1.8)	[36.711]	ND	(1.9)	[37.622]	ND	(1.9)	[37.538]
Heptachlor	ND	(0.36)	[35.830]	ND	(0.37)	[36.711]	ND	(0.38)	[37.622]	0.1 J	(0.38)	[37.538]
Heptachlor epoxide	ND	(0.36)	[35.830]	ND	(0.37)	[36.711]	ND	(0.38)	[37.622]	ND	(0.38)	[37.538]
Methoxychlor	ND	(1.8)	[35.830]	ND	(1.8)	[36.711]	ND	(1.9)	[37.622]	ND	(1.9)	[37.538]
PCB-1016	ND	(3.6)	[35.830]	ND	(3.7)	[36.711]	ND	(3.8)	[37.622]	ND	(3.8)	[37.538]
PCB-1221	ND	(7.2)	[35.830]	ND	(7.3)	[36.711]	ND	(7.5)	[37.622]	ND	(7.5)	[37.538]

Compiled: 8 February 1994 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 10 CAN97-10-03 9 - 11			NONE 10 CAN97-10-04 14 - 16			NONE 10 CAN97-10-05 19 - 21			NONE 10 CAN97-10-99 Dup of CAN97-10-05 19 - 21		
PCB-1232	ND	(7.2)	[35.830]	ND	(7.3)	[36.711]	ND	(7.5)	[37.622]	ND	(7.5)	[37.538]
PCB-1242	ND	(3.6)	[35.830]	ND	(3.7)	[36.711]	ND	(3.8)	[37.622]	ND	(3.8)	[37.538]
PCB-1248	ND	(3.6)	[35.830]	ND	(3.7)	[36.711]	ND	(3.8)	[37.622]	ND	(3.8)	[37.538]
PCB-1254	ND	(7.2)	[35.830]	ND	(7.3)	[36.711]	ND	(7.5)	[37.622]	ND	(7.5)	[37.538]
PCB-1260	ND	(7.2)	[35.830]	ND	(7.3)	[36.711]	ND	(7.5)	[37.622]	ND	(7.5)	[37.538]
Toxaphene	ND	(18)	[35.830]	ND	(18)	[36.711]	ND	(19)	[37.622]	ND	(19)	[37.538]
alpha-BHC	ND	(0.36)	[35.830]	ND	(0.37)	[36.711]	ND	(0.38)	[37.622]	ND	(0.38)	[37.538]
beta-BHC	ND	(0.36)	[35.830]	ND	(0.37)	[36.711]	ND	(0.38)	[37.622]	ND	(0.38)	[37.538]
delta-BHC	ND	(0.36)	[35.830]	ND	(0.37)	[36.711]	ND	(0.38)	[37.622]	ND	(0.38)	[37.538]
gamma-BHC	ND	(0.36)	[35.830]	ND	(0.37)	[36.711]	ND	(0.38)	[37.622]	ND	(0.38)	[37.538]
SW8150 - Chlorinated Herbicides (ug/kg)												
2,4,5-T	ND	(7.2)	[35.868]	NA			NA			NA		
2,4,5-TP (Silvex)	ND	(6.1)	[35.868]	NA			NA			NA		
2,4-D	ND	(43)	[35.868]	NA			NA			NA		
2,4-DB	ND	(33)	[35.868]	NA			NA			NA		
Dalapon	ND	(210)	[35.868]	NA			NA			NA		
Dicamba	ND	(9.7)	[35.868]	NA			NA			NA		
Dichloroprop	3.2 J	(23)	[35.868]	NA			NA			NA		
Dinoseb	ND	(5.4)	[35.868]	NA			NA			NA		
MCPA	ND	(8900)	[35.868]	NA			NA			NA		
MCPP	ND	(6900)	[35.868]	NA			NA			NA		
SW8240 - Volatile Organics (ug/kg)												
1,1,1-Trichloroethane	ND	(5.4)	[1.079]	ND	(5.5)	[1.107]	ND	(5.7)	[1.131]	ND	(5.6)	[1.129]
1,1,2,2-Tetrachloroethane	ND	(5.4)	[1.079]	ND	(5.5)	[1.107]	ND	(5.7)	[1.131]	ND	(5.6)	[1.129]
1,1,2-Trichloroethane	ND	(5.4)	[1.079]	ND	(5.5)	[1.107]	ND	(5.7)	[1.131]	ND	(5.6)	[1.129]
1,1-Dichloroethane	ND	(5.4)	[1.079]	ND	(5.5)	[1.107]	ND	(5.7)	[1.131]	ND	(5.6)	[1.129]
1,1-Dichloroethene	ND	(5.4)	[1.079]	ND	(5.5)	[1.107]	ND	(5.7)	[1.131]	ND	(5.6)	[1.129]
1,2,3-Trichloropropane	ND	(5.4)	[1.079]	ND	(5.5)	[1.107]	ND	(5.7)	[1.131]	ND	(5.6)	[1.129]
1,2-Dichloroethane	ND	(5.4)	[1.079]	ND	(5.5)	[1.107]	ND	(5.7)	[1.131]	ND	(5.6)	[1.129]

Compiled: 8 Fe' y 1994 () = Reporting Limit [] = Factor = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)																
	NONE 10 CAN97-10-03 9 - 11			NONE 10 CAN97-10-04 14 - 16			NONE 10 CAN97-10-05 19 - 21			NONE 10 CAN97-10-99 Dup of CAN97-10-05 19 - 21		
1,2-Dichloropropane	ND	(5.4)	[1.079]	ND	(5.5)	[1.107]	ND	(5.7)	[1.131]	ND	(5.6)	[1.129]
2-Chloroethyl vinyl ether	ND	(11)	[1.079]	ND	(11)	[1.107]	ND	(11)	[1.131]	ND	(11)	[1.129]
2-Hexanone	ND	(54)	[1.079]	ND	(55)	[1.107]	ND	(57)	[1.131]	ND	(56)	[1.129]
4-Methyl-2-pentanone(MIBK)	ND	(54)	[1.079]	ND	(55)	[1.107]	ND	(57)	[1.131]	ND	(56)	[1.129]
Acetone	ND	(110)	[1.079]	ND	(110)	[1.107]	ND	(110)	[1.131]	ND	(110)	[1.129]
Acrolein	ND	(81)	[1.079]	ND	(83)	[1.107]	ND	(85)	[1.131]	ND	(85)	[1.129]
Acrylonitrile	ND	(54)	[1.079]	ND	(55)	[1.107]	ND	(57)	[1.131]	ND	(56)	[1.129]
Benzene	ND	(5.4)	[1.079]	ND	(5.5)	[1.107]	ND	(5.7)	[1.131]	ND	(5.6)	[1.129]
Bromodichloromethane	ND	(5.4)	[1.079]	ND	(5.5)	[1.107]	ND	(5.7)	[1.131]	ND	(5.6)	[1.129]
Bromomethane	ND	(11)	[1.079]	ND	(11)	[1.107]	ND	(11)	[1.131]	ND	(11)	[1.129]
Carbon disulfide	ND	(5.4)	[1.079]	ND	(5.5)	[1.107]	ND	(5.7)	[1.131]	ND	(5.6)	[1.129]
Carbon tetrachloride	ND	(5.4)	[1.079]	ND	(5.5)	[1.107]	ND	(5.7)	[1.131]	ND	(5.6)	[1.129]
Chlorobenzene	ND	(5.4)	[1.079]	ND	(5.5)	[1.107]	ND	(5.7)	[1.131]	ND	(5.6)	[1.129]
Chloroethane	ND	(11)	[1.079]	ND	(11)	[1.107]	ND	(11)	[1.131]	ND	(11)	[1.129]
Chloroform	ND	(5.4)	[1.079]	ND	(5.5)	[1.107]	ND	(5.7)	[1.131]	ND	(5.6)	[1.129]
Chloromethane	ND	(11)	[1.079]	ND	(11)	[1.107]	ND	(11)	[1.131]	ND	(11)	[1.129]
Dibromochloromethane	ND	(5.4)	[1.079]	ND	(5.5)	[1.107]	ND	(5.7)	[1.131]	ND	(5.6)	[1.129]
Dibromomethane	ND	(5.4)	[1.079]	ND	(5.5)	[1.107]	ND	(5.7)	[1.131]	ND	(5.6)	[1.129]
Dichlorodifluoromethane	ND	(22)	[1.079]	ND	(22)	[1.107]	ND	(23)	[1.131]	ND	(23)	[1.129]
Ethyl acetate	NA			NA			12	()	[1.131]	NA		
Ethyl benzene	ND	(5.4)	[1.079]	ND	(5.5)	[1.107]	ND	(5.7)	[1.131]	ND	(5.6)	[1.129]
Ethyl methacrylate	ND	(16)	[1.079]	ND	(17)	[1.107]	ND	(17)	[1.131]	ND	(17)	[1.129]
Iodomethane	ND	(5.4)	[1.079]	ND	(5.5)	[1.107]	ND	(5.7)	[1.131]	ND	(5.6)	[1.129]
Methyl ethyl ketone	ND	(110)	[1.079]	ND	(110)	[1.107]	ND	(110)	[1.131]	ND	(110)	[1.129]
Methylene chloride	ND	(5.4)	[1.079]	3.9 J	(5.5)	[1.107]	ND	(5.7)	[1.131]	4 J	(5.6)	[1.129]
Styrene	ND	(5.4)	[1.079]	ND	(5.5)	[1.107]	ND	(5.7)	[1.131]	ND	(5.6)	[1.129]
Tetrachloroethene	ND	(5.4)	[1.079]	ND	(5.5)	[1.107]	ND	(5.7)	[1.131]	ND	(5.6)	[1.129]
Toluene	0.63 J	(5.4)	[1.079]	1.1 J	(5.5)	[1.107]	ND	(5.7)	[1.131]	ND	(5.6)	[1.129]
Tribromomethane(Bromoform)	ND	(5.4)	[1.079]	ND	(5.5)	[1.107]	ND	(5.7)	[1.131]	ND	(5.6)	[1.129]

Compiled: 8 February 1994 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)																
	NONE 10 CAN97-10-03 9 - 11			NONE 10 CAN97-10-04 14 - 16			NONE 10 CAN97-10-05 19 - 21			NONE 10 CAN97-10-99 Dup of CAN97-10-05 19 - 21		
Trichloroethene	ND	(5.4)	[1.079]	ND	(5.5)	[1.107]	ND	(5.7)	[1.131]	ND	(5.6)	[1.129]
Trichlorofluoromethane	ND	(11)	[1.079]	ND	(11)	[1.107]	ND	(11)	[1.131]	ND	(11)	[1.129]
Unknown alkane	73	()	[1.079]	NA			NA			NA		
Vinyl acetate	ND	(5.4)	[1.079]	ND	(5.5)	[1.107]	ND	(5.7)	[1.131]	ND	(5.6)	[1.129]
Vinyl chloride	ND	(11)	[1.079]	ND	(11)	[1.107]	ND	(11)	[1.131]	ND	(11)	[1.129]
Xylenes	ND	(5.4)	[1.079]	ND	(5.5)	[1.107]	ND	(5.7)	[1.131]	ND	(5.6)	[1.129]
cis-1,3-Dichloropropene	ND	(5.4)	[1.079]	ND	(5.5)	[1.107]	ND	(5.7)	[1.131]	ND	(5.6)	[1.129]
trans-1,2-Dichloroethene	ND	(5.4)	[1.079]	ND	(5.5)	[1.107]	ND	(5.7)	[1.131]	ND	(5.6)	[1.129]
trans-1,3-Dichloropropene	ND	(5.4)	[1.079]	ND	(5.5)	[1.107]	ND	(5.7)	[1.131]	ND	(5.6)	[1.129]
trans-1,4-Dichloro-2-butene	ND	(11)	[1.079]	ND	(11)	[1.107]	ND	(11)	[1.131]	ND	(11)	[1.129]
SW8270 - Semivolatile Organics (ug/kg)												
1,2,4,5-Tetrachlorobenzene	ND	(360)	[.036]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(380)	[.038]
1,2,4-Trichlorobenzene	ND	(360)	[.036]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(380)	[.038]
1,2-Dichlorobenzene	ND	(360)	[.036]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(380)	[.038]
1,2-Diphenylhydrazine	ND	(360)	[.036]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(380)	[.038]
1,3-Dichlorobenzene	ND	(360)	[.036]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(380)	[.038]
1,4-Dichlorobenzene	ND	(360)	[.036]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(380)	[.038]
1-Chloronaphthalene	ND	(360)	[.036]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(380)	[.038]
1-Naphthylamine	ND	(360)	[.036]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(380)	[.038]
2,3,4,6-Tetrachlorophenol	ND	(720)	[.036]	ND	(740)	[.037]	ND	(750)	[.038]	ND	(750)	[.038]
2,4,5-Trichlorophenol	ND	(360)	[.036]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(380)	[.038]
2,4,6-Trichlorophenol	ND	(360)	[.036]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(380)	[.038]
2,4-Dichlorophenol	ND	(360)	[.036]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(380)	[.038]
2,4-Dimethylphenol	ND	(360)	[.036]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(380)	[.038]
2,4-Dinitrophenol	ND	(1800)	[.036]	ND	(1800)	[.037]	ND	(1900)	[.038]	ND	(1900)	[.038]
2,4-Dinitrotoluene	ND	(360)	[.036]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(380)	[.038]
2,6-Dichlorophenol	ND	(360)	[.036]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(380)	[.038]
2,6-Dinitrotoluene	ND	(360)	[.036]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(380)	[.038]
2-Chloronaphthalene	ND	(360)	[.036]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(380)	[.038]

Compiled: 8 Feb 1994 () = Reporting Limit [] = Factor Not Detected NA = Not Applicable

TABLE 61 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

	SITE ID											
	LOCATION ID											
	SAMPLE ID											
	BEG. DEPTH - END DEPTH (FT.)											
	NONE			NONE			NONE			NONE		
	10			10			10			10		
	CAN97-10-03			CAN97-10-04			CAN97-10-05			CAN97-10-99 Dup of CAN97-10-05		
PARAMETER	9 - 11			14 - 16			19 - 21			19 - 21		
2-Chlorophenol	ND	(360)	[.036]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(380)	[.038]
2-Methylnaphthalene	ND	(360)	[.036]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(380)	[.038]
2-Methylphenol(o-cresol)	ND	(360)	[.036]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(380)	[.038]
2-Naphthylamine	ND	(360)	[.036]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(380)	[.038]
2-Nitroaniline	ND	(1800)	[.036]	ND	(1800)	[.037]	ND	(1900)	[.038]	ND	(1900)	[.038]
2-Nitrophenol	ND	(360)	[.036]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(380)	[.038]
2-Picoline	ND	(360)	[.036]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(380)	[.038]
3,3'-Dichlorobenzidine	ND	(720)	[.036]	ND	(740)	[.037]	ND	(750)	[.038]	ND	(750)	[.038]
3-Methylcholanthrene	ND	(360)	[.036]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(380)	[.038]
3-Nitroaniline	ND	(1800)	[.036]	ND	(1800)	[.037]	ND	(1900)	[.038]	ND	(1900)	[.038]
4,6-Dinitro-2-methylphenol	ND	(1800)	[.036]	ND	(1800)	[.037]	ND	(1900)	[.038]	ND	(1900)	[.038]
4-Aminobiphenyl	ND	(360)	[.036]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(380)	[.038]
4-Bromophenyl phenyl ether	ND	(360)	[.036]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(380)	[.038]
4-Chloro-3-methylphenol	ND	(360)	[.036]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(380)	[.038]
4-Chlorophenyl phenyl ether	ND	(360)	[.036]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(380)	[.038]
4-Methylphenol(p-cresol)	ND	(360)	[.036]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(380)	[.038]
4-Nitroaniline	ND	(1800)	[.036]	ND	(1800)	[.037]	ND	(1900)	[.038]	ND	(1900)	[.038]
4-Nitrophenol	ND	(1800)	[.036]	ND	(1800)	[.037]	ND	(1900)	[.038]	ND	(1900)	[.038]
7,12-Dimethylbenz(a)anthracene	ND	(900)	[.036]	ND	(920)	[.037]	ND	(940)	[.038]	ND	(940)	[.038]
Acenaphthene	ND	(360)	[.036]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(380)	[.038]
Acenaphthylene	ND	(360)	[.036]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(380)	[.038]
Acetophenone	ND	(360)	[.036]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(380)	[.038]
Aniline	ND	(360)	[.036]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(380)	[.038]
Anthracene	ND	(360)	[.036]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(380)	[.038]
Benzidine	ND	(360)	[.036]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(380)	[.038]
Benzo(a)anthracene	ND	(360)	[.036]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(380)	[.038]
Benzo(a)pyrene	ND	(360)	[.036]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(380)	[.038]
Benzo(b)fluoranthene	ND	(360)	[.036]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(380)	[.038]
Benzo(g,h,i)perylene	ND	(360)	[.036]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(380)	[.038]

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TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID	LOCATION ID	SAMPLE ID	BEG. DEPTH - END DEPTH (FT.)																
	NONE	10	CAN97-10-03	9 - 11			NONE	10	CAN97-10-04	14 - 16			NONE	10	CAN97-10-05	19 - 21			NONE	10	CAN97-10-99 Dup of CAN97-10-05	19 - 21		
Benzo(k)fluoranthene	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(380)	[	.038]
Benzoic acid	ND	(1800)	[	.036]	ND	(1800)	[	.037]	ND	(1900)	[	.038]	ND	(1900)	[	.038]
Benzyl alcohol	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(380)	[	.038]
Butylbenzylphthalate	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(380)	[	.038]
Chrysene	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(380)	[	.038]
Cyclohexenone	NA				NA				190	(0)	[	.038]	NA			
Di-n-octylphthalate	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(380)	[	.038]
Dibenz(a,h)anthracene	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(380)	[	.038]
Dibenz(a,j)acridine	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(380)	[	.038]
Dibenzofuran	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(380)	[	.038]
Dibutylphthalate	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(380)	[	.038]
Diethylphthalate	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(380)	[	.038]
Dimethylphenethylamine	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(380)	[	.038]
Dimethylphthalate	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(380)	[	.038]
Diphenylamine	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(380)	[	.038]
Ethyl methanesulfonate	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(380)	[	.038]
Fluoranthene	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(380)	[	.038]
Fluorene	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(380)	[	.038]
Hexachlorobenzene	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(380)	[	.038]
Hexachlorobutadiene	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(380)	[	.038]
Hexachlorocyclopentadiene	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(380)	[	.038]
Hexachloroethane	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(380)	[	.038]
Indeno(1,2,3-cd)pyrene	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(380)	[	.038]
Isophorone	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(380)	[	.038]
Methyl methanesulfonate	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(380)	[	.038]
N-Nitroso-di-n-butylamine	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(380)	[	.038]
N-Nitrosodimethylamine	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(380)	[	.038]
N-Nitrosodiphenylamine	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(380)	[	.038]
N-Nitrosodipropylamine	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(380)	[	.038]

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TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 2S.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)														
	NONE 10 CAN97-10-03 9 - 11			NONE 10 CAN97-10-04 14 - 16			NONE 10 CAN97-10-05 19 - 21			NONE 10 CAN97-10-99 Dup of CAN97-10-05 19 - 21		
N-Nitrosopiperidine	ND	(360)	[.036]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(380)	[.038]
Naphthalene	ND	(360)	[.036]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(380)	[.038]
Nitrobenzene	ND	(360)	[.036]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(380)	[.038]
Pentachlorobenzene	ND	(360)	[.036]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(380)	[.038]
Pentachloronitrobenzene	ND	(360)	[.036]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(380)	[.038]
Pentachlorophenol	ND	(1800)	[.036]	ND	(1800)	[.037]	ND	(1900)	[.038]	ND	(1900)	[.038]
Phenacetin	ND	(360)	[.036]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(380)	[.038]
Phenanthrene	ND	(360)	[.036]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(380)	[.038]
Phenol	ND	(360)	[.036]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(380)	[.038]
Pronamide	ND	(360)	[.036]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(380)	[.038]
Pyrene	ND	(360)	[.036]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(380)	[.038]
Pyridine	ND	(360)	[.036]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(380)	[.038]
Unknown	360	(0)	[.036]	180	(0)	[.037]	190	(0)	[.038]	340	(0)	[.038]
Unknown trichloropropene	290	(0)	[.036]	NA			NA			NA		
bis(2-Chloroethoxy)methane	ND	(360)	[.036]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(380)	[.038]
bis(2-Chloroethyl)ether	ND	(360)	[.036]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(380)	[.038]
bis(2-Chloroisopropyl)ether	ND	(360)	[.036]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(380)	[.038]
bis(2-Ethylhexyl)phthalate	ND	(360)	[.036]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(380)	[.038]
p-Chloroaniline	ND	(360)	[.036]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(380)	[.038]
p-Dimethylaminoazobenzene	ND	(360)	[.036]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(380)	[.038]

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)										
	NONE 10 CAN97-10-06 24 - 26			NONE 10 CAN97-10-07 29 - 31			NONE 10 CAN97-10-08 34 - 36			NONE 10 CAN97-10-09 39 - 41		
EPA 418.1 - Total Recoverable Petroleum Hydrocarbons (mg/kg)												
Hydrocarbons	ND	(28)	[5.618]	ND	(27)	[5.302]	ND	(27)	[5.321]	ND	(26)	[5.285]
SW8015 - Total Petroleum Hydrocarbons (ug/kg)												
Benzene (2)	5.6 J	(32)	[107.000]	NA			8.1 J	(31)	[104.000]	NA		
Diesel (2)	5200 J	(5600)	[111.607]	NA			8600 GB@	(5300)	[106.724]	NA		
Ethylbenzene (2)	16 J	(32)	[107.000]	NA			ND	(31)	[104.000]	NA		
Gasoline (2)	ND	(5400)	[107.000]	NA			ND	(5200)	[104.000]	NA		
Jet fuel (2)	ND	(11000)	[111.607]	NA			ND	(11000)	[106.724]	NA		
Kerosene (2)	ND	(11000)	[111.607]	NA			ND	(11000)	[106.724]	NA		
Toluene (2)	16 J	(32)	[107.000]	NA			ND	(31)	[104.000]	NA		
Xylenes (total) (2)	42 J	(54)	[107.000]	NA			7.8 J	(52)	[104.000]	NA		
SW8080 - Organochlorine Pesticides and PCBs (ug/kg)												
4,4'-DDD	ND	(0.37)	[37.051]	0.39 B@	(0.35)	[35.174]	0.39 GB@	(0.36)	[35.549]	0.38 B@	(0.35)	[35.088]
4,4'-DDE	0.68 @	(0.37)	[37.051]	ND	(0.35)	[35.174]	ND	(0.36)	[35.549]	ND	(0.35)	[35.088]
4,4'-DDT	0.34 J	(0.74)	[37.051]	0.17 J	(0.7)	[35.174]	0.42 J	(0.71)	[35.549]	ND	(0.7)	[35.088]
Aldrin	ND	(0.37)	[37.051]	ND	(0.35)	[35.174]	ND	(0.36)	[35.549]	ND	(0.35)	[35.088]
Chlordane	ND	(1.9)	[37.051]	ND	(1.8)	[35.174]	ND	(1.8)	[35.549]	ND	(1.8)	[35.088]
Dieldrin	ND	(0.37)	[37.051]	ND	(0.35)	[35.174]	ND	(0.36)	[35.549]	ND	(0.35)	[35.088]
Endosulfan I	ND	(0.37)	[37.051]	ND	(0.35)	[35.174]	ND	(0.36)	[35.549]	ND	(0.35)	[35.088]
Endosulfan II	ND	(1.1)	[37.051]	ND	(1.1)	[35.174]	ND	(1.1)	[35.549]	ND	(1.1)	[35.088]
Endosulfan Sulfate	ND	(1.9)	[37.051]	ND	(1.8)	[35.174]	ND	(1.8)	[35.549]	ND	(1.8)	[35.088]
Endrin	ND	(0.37)	[37.051]	ND	(0.35)	[35.174]	ND	(0.36)	[35.549]	ND	(0.35)	[35.088]
Endrin Aldehyde	ND	(0.74)	[37.051]	ND	(0.7)	[35.174]	ND	(0.71)	[35.549]	ND	(0.7)	[35.088]
Endrin Ketone	ND	(1.9)	[37.051]	ND	(1.8)	[35.174]	ND	(1.8)	[35.549]	ND	(1.8)	[35.088]
Heptachlor	ND	(0.37)	[37.051]	ND	(0.35)	[35.174]	ND	(0.36)	[35.549]	ND	(0.35)	[35.088]
Heptachlor epoxide	0.34 J	(0.37)	[37.051]	ND	(0.35)	[35.174]	ND	(0.36)	[35.549]	ND	(0.35)	[35.088]
Methoxychlor	ND	(1.9)	[37.051]	ND	(1.8)	[35.174]	ND	(1.8)	[35.549]	ND	(1.8)	[35.088]
PCB-1016	ND	(3.7)	[37.051]	ND	(3.5)	[35.174]	ND	(3.6)	[35.549]	ND	(3.5)	[35.088]
PCB-1221	ND	(7.4)	[37.051]	ND	(7)	[35.174]	ND	(7.1)	[35.549]	ND	(7)	[35.088]

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TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID	LOCATION ID	SAMPLE ID	BEG. DEPTH - END DEPTH (FT.)										
	NONE	10	CAN97-10-06	24 - 26			NONE	10	CAN97-10-07	29 - 31			NONE	10	CAN97-10-08	34 - 36			NONE	10	CAN97-10-09	39 - 41		
PCB-1232	ND	(7.4)	[37.051]				ND	(7)	[35.174]				ND	(7.1)	[35.549]				ND	(7)	[35.088]			
PCB-1242	ND	(3.7)	[37.051]				ND	(3.5)	[35.174]				ND	(3.6)	[35.549]				ND	(3.5)	[35.088]			
PCB-1248	ND	(3.7)	[37.051]				ND	(3.5)	[35.174]				ND	(3.6)	[35.549]				ND	(3.5)	[35.088]			
PCB-1254	ND	(7.4)	[37.051]				ND	(7)	[35.174]				ND	(7.1)	[35.549]				ND	(7)	[35.088]			
PCB-1260	ND	(7.4)	[37.051]				ND	(7)	[35.174]				ND	(7.1)	[35.549]				ND	(7)	[35.088]			
Toxaphene	ND	(19)	[37.051]				ND	(18)	[35.174]				ND	(18)	[35.549]				ND	(18)	[35.088]			
alpha-BHC	ND	(0.37)	[37.051]				ND	(0.35)	[35.174]				ND	(0.36)	[35.549]				ND	(0.35)	[35.088]			
beta-BHC	ND	(0.37)	[37.051]				ND	(0.35)	[35.174]				ND	(0.36)	[35.549]				ND	(0.35)	[35.088]			
delta-BHC	ND	(0.37)	[37.051]				ND	(0.35)	[35.174]				ND	(0.36)	[35.549]				ND	(0.35)	[35.088]			
gamma-BHC	ND	(0.37)	[37.051]				ND	(0.35)	[35.174]				ND	(0.36)	[35.549]				ND	(0.35)	[35.088]			
SW8150 - Chlorinated Herbicides (ug/kg)																								
2,4,5-T	ND	(7.4)	[37.244]				NA						ND	(7.1)	[35.511]				NA					
2,4,5-TP (Silvex)	ND	(6.3)	[37.244]				NA						ND	(6)	[35.511]				NA					
2,4-D	ND	(45)	[37.244]				NA						ND	(43)	[35.511]				NA					
2,4-DB	ND	(34)	[37.244]				NA						ND	(32)	[35.511]				NA					
Dalapon	ND	(220)	[37.244]				NA						ND	(210)	[35.511]				NA					
Dicamba	ND	(10)	[37.244]				NA						ND	(9.6)	[35.511]				NA					
Dichloroprop	4.6 J	(24)	[37.244]				NA						ND	(23)	[35.511]				NA					
Dinoseb	ND	(5.6)	[37.244]				NA						ND	(5.3)	[35.511]				NA					
MCPA	ND	(9300)	[37.244]				NA						ND	(8800)	[35.511]				NA					
MCPP	ND	(7200)	[37.244]				NA						ND	(6800)	[35.511]				NA					
SW8240 - Volatile Organics (ug/kg)																								
1,1,1-Trichloroethane	ND	(5.6)	[1.117]				ND	(5.3)	[1.061]				ND	(5.3)	[1.070]				ND	(5.3)	[1.057]			
1,1,2,2-Tetrachloroethane	ND	(5.6)	[1.117]				ND	(5.3)	[1.061]				ND	(5.3)	[1.070]				ND	(5.3)	[1.057]			
1,1,2-Trichloroethane	ND	(5.6)	[1.117]				ND	(5.3)	[1.061]				ND	(5.3)	[1.070]				ND	(5.3)	[1.057]			
1,1-Dichloroethane	ND	(5.6)	[1.117]				ND	(5.3)	[1.061]				ND	(5.3)	[1.070]				ND	(5.3)	[1.057]			
1,1-Dichloroethene	ND	(5.6)	[1.117]				ND	(5.3)	[1.061]				ND	(5.3)	[1.070]				ND	(5.3)	[1.057]			
1,2,3-Trichloropropane	ND	(5.6)	[1.117]				ND	(5.3)	[1.061]				ND	(5.3)	[1.070]				ND	(5.3)	[1.057]			
1,2-Dichloroethane	ND	(5.6)	[1.117]				ND	(5.3)	[1.061]				ND	(5.3)	[1.070]				ND	(5.3)	[1.057]			

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TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 10 CAN97-10-06 24 - 26			NONE 10 CAN97-10-07 29 - 31			NONE 10 CAN97-10-08 34 - 36			NONE 10 CAN97-10-09 39 - 41		
1,2-Dichloropropane	ND	(5.6)	[1.117]	ND	(5.3)	[1.061]	ND	(5.3)	[1.070]	ND	(5.3)	[1.057]
2-Chloroethyl vinyl ether	ND	(11)	[1.117]	ND	(11)	[1.061]	ND	(11)	[1.070]	ND	(11)	[1.057]
2-Hexanone	ND	(56)	[1.117]	ND	(53)	[1.061]	ND	(53)	[1.070]	ND	(53)	[1.057]
4-Methyl-2-pentanone(MIBK)	ND	(56)	[1.117]	ND	(53)	[1.061]	ND	(53)	[1.070]	ND	(53)	[1.057]
Acetone	ND	(110)	[1.117]	ND	(110)	[1.061]	ND	(110)	[1.070]	ND	(110)	[1.057]
Acrolein	ND	(84)	[1.117]	ND	(80)	[1.061]	ND	(80)	[1.070]	ND	(79)	[1.057]
Acrylonitrile	ND	(56)	[1.117]	ND	(53)	[1.061]	ND	(53)	[1.070]	ND	(53)	[1.057]
Benzene	ND	(5.6)	[1.117]	ND	(5.3)	[1.061]	0.85 J	(5.3)	[1.070]	ND	(5.3)	[1.057]
Bromodichloromethane	ND	(5.6)	[1.117]	ND	(5.3)	[1.061]	ND	(5.3)	[1.070]	ND	(5.3)	[1.057]
Bromomethane	ND	(11)	[1.117]	ND	(11)	[1.061]	ND	(11)	[1.070]	ND	(11)	[1.057]
Carbon disulfide	ND	(5.6)	[1.117]	ND	(5.3)	[1.061]	ND	(5.3)	[1.070]	ND	(5.3)	[1.057]
Carbon tetrachloride	ND	(5.6)	[1.117]	ND	(5.3)	[1.061]	ND	(5.3)	[1.070]	ND	(5.3)	[1.057]
Chlorobenzene	ND	(5.6)	[1.117]	ND	(5.3)	[1.061]	ND	(5.3)	[1.070]	ND	(5.3)	[1.057]
Chloroethane	ND	(11)	[1.117]	ND	(11)	[1.061]	ND	(11)	[1.070]	ND	(11)	[1.057]
Chloroform	ND	(5.6)	[1.117]	ND	(5.3)	[1.061]	ND	(5.3)	[1.070]	ND	(5.3)	[1.057]
Chloromethane	ND	(11)	[1.117]	ND	(11)	[1.061]	ND	(11)	[1.070]	ND	(11)	[1.057]
Dibromochloromethane	ND	(5.6)	[1.117]	ND	(5.3)	[1.061]	ND	(5.3)	[1.070]	ND	(5.3)	[1.057]
Dibromomethane	ND	(5.6)	[1.117]	ND	(5.3)	[1.061]	ND	(5.3)	[1.070]	ND	(5.3)	[1.057]
Dichlorodifluoromethane	ND	(22)	[1.117]	ND	(21)	[1.061]	ND	(21)	[1.070]	ND	(21)	[1.057]
Ethyl acetate	NA			NA			9.9	()	[1.070]	6.6	()	[1.057]
Ethyl benzene	ND	(5.6)	[1.117]	ND	(5.3)	[1.061]	0.53 J	(5.3)	[1.070]	ND	(5.3)	[1.057]
Ethyl methacrylate	ND	(17)	[1.117]	ND	(16)	[1.061]	ND	(16)	[1.070]	ND	(16)	[1.057]
Iodomethane	ND	(5.6)	[1.117]	ND	(5.3)	[1.061]	ND	(5.3)	[1.070]	ND	(5.3)	[1.057]
Methyl ethyl ketone	ND	(110)	[1.117]	ND	(110)	[1.061]	ND	(110)	[1.070]	ND	(110)	[1.057]
Methylene chloride	ND	(5.6)	[1.117]	ND	(5.3)	[1.061]	ND	(5.3)	[1.070]	ND	(5.3)	[1.057]
Styrene	ND	(5.6)	[1.117]	ND	(5.3)	[1.061]	ND	(5.3)	[1.070]	ND	(5.3)	[1.057]
Tetrachloroethene	ND	(5.6)	[1.117]	ND	(5.3)	[1.061]	ND	(5.3)	[1.070]	ND	(5.3)	[1.057]
Toluene	0.34 J	(5.6)	[1.117]	ND	(5.3)	[1.061]	0.8 J	(5.3)	[1.070]	1.2 J	(5.3)	[1.057]
Tribromomethane(Bromoform)	ND	(5.6)	[1.117]	ND	(5.3)	[1.061]	ND	(5.3)	[1.070]	ND	(5.3)	[1.057]

Compiled: 8 Feb v 1994 () = Reporting Limit [] = Factor = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID	LOCATION ID	SAMPLE ID	BEG. DEPTH - END DEPTH (FT.)												
	NONE	10	CAN97-10-06	24 - 26			NONE	10	CAN97-10-07	29 - 31			NONE	10	CAN97-10-08	34 - 36			NONE	10	CAN97-10-09	39 - 41		
Trichloroethene	ND	(5.6)	[	1.117]	ND	(5.3)	[	1.061]	ND	(5.3)	[	1.070]	ND	(5.3)	[	1.057]
Trichlorofluoromethane	ND	(11)	[	1.117]	ND	(11)	[	1.061]	ND	(11)	[	1.070]	ND	(11)	[	1.057]
Vinyl acetate	ND	(5.6)	[	1.117]	ND	(5.3)	[	1.061]	ND	(5.3)	[	1.070]	ND	(5.3)	[	1.057]
Vinyl chloride	ND	(11)	[	1.117]	ND	(11)	[	1.061]	ND	(11)	[	1.070]	ND	(11)	[	1.057]
Xylenes	ND	(5.6)	[	1.117]	ND	(5.3)	[	1.061]	1.4 J	(5.3)	[	1.070]	ND	(5.3)	[	1.057]
cis-1,3-Dichloropropene	ND	(5.6)	[	1.117]	ND	(5.3)	[	1.061]	ND	(5.3)	[	1.070]	ND	(5.3)	[	1.057]
trans-1,2-Dichloroethene	ND	(5.6)	[	1.117]	ND	(5.3)	[	1.061]	ND	(5.3)	[	1.070]	ND	(5.3)	[	1.057]
trans-1,3-Dichloropropene	ND	(5.6)	[	1.117]	ND	(5.3)	[	1.061]	ND	(5.3)	[	1.070]	ND	(5.3)	[	1.057]
trans-1,4-Dichloro-2-butene	ND	(11)	[	1.117]	ND	(11)	[	1.061]	ND	(11)	[	1.070]	ND	(11)	[	1.057]
SW8270 - Semivolatile Organics (ug/kg)																
1,2,4,5-Tetrachlorobenzene	ND	(370)	[	.037]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
1,2,4-Trichlorobenzene	ND	(370)	[	.037]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
1,2-Dichlorobenzene	ND	(370)	[	.037]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
1,2-Diphenylhydrazine	ND	(370)	[	.037]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
1,3-Dichlorobenzene	ND	(370)	[	.037]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
1,4-Dichlorobenzene	ND	(370)	[	.037]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
1-Chloronaphthalene	ND	(370)	[	.037]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
1-Naphthylamine	ND	(370)	[	.037]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
2,3,4,6-Tetrachlorophenol	ND	(740)	[	.037]	ND	(710)	[	.035]	ND	(710)	[	.036]	ND	(700)	[	.035]
2,4,5-Trichlorophenol	ND	(370)	[	.037]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
2,4,6-Trichlorophenol	ND	(370)	[	.037]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
2,4-Dichlorophenol	ND	(370)	[	.037]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
2,4-Dimethylphenol	ND	(370)	[	.037]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
2,4-Dinitrophenol	ND	(1900)	[	.037]	ND	(1800)	[	.035]	ND	(1800)	[	.036]	ND	(1800)	[	.035]
2,4-Dinitrotoluene	ND	(370)	[	.037]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
2,6-Dichlorophenol	ND	(370)	[	.037]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
2,6-Dinitrotoluene	ND	(370)	[	.037]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
2-Chloronaphthalene	ND	(370)	[	.037]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
2-Chlorophenol	ND	(370)	[	.037]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)														
	NONE 10 CAN97-10-06 24 - 26			NONE 10 CAN97-10-07 29 - 31			NONE 10 CAN97-10-08 34 - 36			NONE 10 CAN97-10-09 39 - 41					
2-Methylnaphthalene	ND	(370)	[.037]	ND	(350)	[.035]	ND	(360)	[.036]	ND	(350)	[.035]			
2-Methylphenol(o-cresol)	ND	(370)	[.037]	ND	(350)	[.035]	ND	(360)	[.036]	ND	(350)	[.035]			
2-Naphthylamine	ND	(370)	[.037]	ND	(350)	[.035]	ND	(360)	[.036]	ND	(350)	[.035]			
2-Nitroaniline	ND	(1900)	[.037]	ND	(1800)	[.035]	ND	(1800)	[.036]	ND	(1800)	[.035]			
2-Nitrophenol	ND	(370)	[.037]	ND	(350)	[.035]	ND	(360)	[.036]	ND	(350)	[.035]			
2-Picoline	ND	(370)	[.037]	ND	(350)	[.035]	ND	(360)	[.036]	ND	(350)	[.035]			
3,3'-Dichlorobenzidine	ND	(740)	[.037]	ND	(710)	[.035]	ND	(710)	[.036]	ND	(700)	[.035]			
3-Methylcholanthrene	ND	(370)	[.037]	ND	(350)	[.035]	ND	(360)	[.036]	ND	(350)	[.035]			
3-Nitroaniline	ND	(1900)	[.037]	ND	(1800)	[.035]	ND	(1800)	[.036]	ND	(1800)	[.035]			
4,6-Dinitro-2-methylphenol	ND	(1900)	[.037]	ND	(1800)	[.035]	ND	(1800)	[.036]	ND	(1800)	[.035]			
4-Aminobiphenyl	ND	(370)	[.037]	ND	(350)	[.035]	ND	(360)	[.036]	ND	(350)	[.035]			
4-Bromophenyl phenyl ether	ND	(370)	[.037]	ND	(350)	[.035]	ND	(360)	[.036]	ND	(350)	[.035]			
4-Chloro-3-methylphenol	ND	(370)	[.037]	ND	(350)	[.035]	ND	(360)	[.036]	ND	(350)	[.035]			
4-Chlorophenyl phenyl ether	ND	(370)	[.037]	ND	(350)	[.035]	ND	(360)	[.036]	ND	(350)	[.035]			
4-Methylphenol(p-cresol)	ND	(370)	[.037]	ND	(350)	[.035]	ND	(360)	[.036]	ND	(350)	[.035]			
4-Nitroaniline	ND	(1900)	[.037]	ND	(1800)	[.035]	ND	(1800)	[.036]	ND	(1800)	[.035]			
4-Nitrophenol	ND	(1900)	[.037]	ND	(1800)	[.035]	ND	(1800)	[.036]	ND	(1800)	[.035]			
7,12-Dimethylbenz(a)anthracene	ND	(930)	[.037]	ND	(880)	[.035]	ND	(890)	[.036]	ND	(880)	[.035]			
Acenaphthene	ND	(370)	[.037]	ND	(350)	[.035]	ND	(360)	[.036]	ND	(350)	[.035]			
Acenaphthylene	ND	(370)	[.037]	ND	(350)	[.035]	ND	(360)	[.036]	ND	(350)	[.035]			
Acetophenone	ND	(370)	[.037]	ND	(350)	[.035]	ND	(360)	[.036]	ND	(350)	[.035]			
Aniline	ND	(370)	[.037]	ND	(350)	[.035]	ND	(360)	[.036]	ND	(350)	[.035]			
Anthracene	ND	(370)	[.037]	ND	(350)	[.035]	ND	(360)	[.036]	ND	(350)	[.035]			
Benzidine	ND	(370)	[.037]	ND	(350)	[.035]	ND	(360)	[.036]	ND	(350)	[.035]			
Benzo(a)anthracene	ND	(370)	[.037]	ND	(350)	[.035]	ND	(360)	[.036]	ND	(350)	[.035]			
Benzo(a)pyrene	ND	(370)	[.037]	ND	(350)	[.035]	ND	(360)	[.036]	ND	(350)	[.035]			
Benzo(b)fluoranthene	ND	(370)	[.037]	ND	(350)	[.035]	ND	(360)	[.036]	ND	(350)	[.035]			
Benzo(g,h,i)perylene	ND	(370)	[.037]	ND	(350)	[.035]	ND	(360)	[.036]	ND	(350)	[.035]			
Benzo(k)fluoranthene	ND	(370)	[.037]	ND	(350)	[.035]	ND	(360)	[.036]	ND	(350)	[.035]			

Compiled: 8 Fe' y 1994 () = Reporting Limit [] = Factor = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)																
	NONE 10 CAN97-10-06 24 - 26				NONE 10 CAN97-10-07 29 - 31				NONE 10 CAN97-10-08 34 - 36				NONE 10 CAN97-10-09 39 - 41			
Benzoic acid	ND	(1900)	[	.037]	ND	(1800)	[	.035]	ND	(1800)	[	.036]	ND	(1800)	[	.035]
Benzyl alcohol	ND	(370)	[	.037]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Butylbenzylphthalate	ND	(370)	[	.037]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Chrysene	ND	(370)	[	.037]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Di-n-octylphthalate	ND	(370)	[	.037]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Dibenz(a,h)anthracene	ND	(370)	[	.037]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Dibenz(a,j)acridine	ND	(370)	[	.037]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Dibenzofuran	ND	(370)	[	.037]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Dibutylphthalate	ND	(370)	[	.037]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Diethylphthalate	ND	(370)	[	.037]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Dimethylphenethylamine	ND	(370)	[	.037]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Dimethylphthalate	ND	(370)	[	.037]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Diphenylamine	ND	(370)	[	.037]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Ethyl methanesulfonate	ND	(370)	[	.037]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Fluoranthene	ND	(370)	[	.037]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Fluorene	ND	(370)	[	.037]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Hexachlorobenzene	ND	(370)	[	.037]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Hexachlorobutadiene	ND	(370)	[	.037]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Hexachlorocyclopentadiene	ND	(370)	[	.037]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Hexachloroethane	ND	(370)	[	.037]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Indeno(1,2,3-cd)pyrene	ND	(370)	[	.037]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Isophorone	ND	(370)	[	.037]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Methyl methanesulfonate	ND	(370)	[	.037]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
N-Nitroso-di-n-butylamine	ND	(370)	[	.037]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
N-Nitrosodimethylamine	ND	(370)	[	.037]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
N-Nitrosodiphenylamine	ND	(370)	[	.037]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
N-Nitrosodipropylamine	ND	(370)	[	.037]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
N-Nitrosopiperidine	ND	(370)	[	.037]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Naphthalene	ND	(370)	[	.037]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]

Compiled: 8 February 1994 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)														
	NONE 10 CAN97-10-06 24 - 26				NONE 10 CAN97-10-07 29 - 31				NONE 10 CAN97-10-08 34 - 36				NONE 10 CAN97-10-09 39 - 41			
Nitrobenzene	ND	(370)	[	.037]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Pentachlorobenzene	ND	(370)	[	.037]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Pentachloronitrobenzene	ND	(370)	[	.037]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Pentachlorophenol	ND	(1900)	[	.037]	ND	(1800)	[	.035]	ND	(1800)	[	.036]	ND	(1800)	[	.035]
Phenacetin	ND	(370)	[	.037]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Phenanthrene	ND	(370)	[	.037]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Phenol	ND	(370)	[	.037]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Pronamide	ND	(370)	[	.037]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Pyrene	ND	(370)	[	.037]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Pyridine	ND	(370)	[	.037]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Unknown	260	(0)	[	.037]	320	(0)	[	.035]	250	(0)	[	.036]	140	(0)	[	.035]
bis(2-Chloroethoxy)methane	ND	(370)	[	.037]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
bis(2-Chloroethyl)ether	ND	(370)	[	.037]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
bis(2-Chloroisopropyl)ether	ND	(370)	[	.037]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
bis(2-Ethylhexyl)phthalate	27 J	(370)	[	.037]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
p-Chloroaniline	ND	(370)	[	.037]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
p-Dimethylaminoazobenzene	ND	(370)	[	.037]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID											
	LOCATION ID											
	SAMPLE ID											
	BEG. DEPTH - END DEPTH (FT.)											
	NONE			NONE			NONE			NONE		
	10			10			10			10		
	CAN97-10-10			CAN97-10-11			CAN97-10-12			CAN97-10-13		
	44 - 46			49 - 51			54 - 56			59 - 61		
EPA 418.1 - Total Recoverable Petroleum Hydrocarbons (mg/kg)												
Hydrocarbons	ND	(27)	[5.408]	ND	(26)	[5.215]	ND	(26)	[5.210]	ND	(26)	[5.187]
SW8080 - Organochlorine Pesticides and PCBs (ug/kg)												
4,4'-DDD	0.38 GB@	(0.36)	[36.219]	0.4 GB@	(0.35)	[35.002]	0.44 GB@	(0.35)	[34.892]	0.4 GB@	(0.34)	[34.459]
4,4'-DDE	ND	(0.36)	[36.219]	0.064 J	(0.35)	[35.002]	ND	(0.35)	[34.892]	ND	(0.34)	[34.459]
4,4'-DDT	0.42 J	(0.72)	[36.219]	0.51 J	(0.7)	[35.002]	0.63 J	(0.7)	[34.892]	ND	(0.69)	[34.459]
Aldrin	ND	(0.36)	[36.219]	ND	(0.35)	[35.002]	ND	(0.35)	[34.892]	ND	(0.34)	[34.459]
Chlordane	ND	(1.8)	[36.219]	ND	(1.8)	[35.002]	ND	(1.7)	[34.892]	ND	(1.7)	[34.459]
Dieldrin	ND	(0.36)	[36.219]	ND	(0.35)	[35.002]	ND	(0.35)	[34.892]	ND	(0.34)	[34.459]
Endosulfan I	ND	(0.36)	[36.219]	ND	(0.35)	[35.002]	ND	(0.35)	[34.892]	ND	(0.34)	[34.459]
Endosulfan II	ND	(1.1)	[36.219]	ND	(1.1)	[35.002]	ND	(1)	[34.892]	ND	(1)	[34.459]
Endosulfan Sulfate	ND	(1.8)	[36.219]	ND	(1.8)	[35.002]	0.073 J	(1.7)	[34.892]	ND	(1.7)	[34.459]
Endrin	ND	(0.36)	[36.219]	0.13 J	(0.35)	[35.002]	ND	(0.35)	[34.892]	0.11 J	(0.34)	[34.459]
Endrin Aldehyde	ND	(0.72)	[36.219]	ND	(0.7)	[35.002]	ND	(0.7)	[34.892]	ND	(0.69)	[34.459]
Endrin Ketone	ND	(1.8)	[36.219]	ND	(1.8)	[35.002]	ND	(1.7)	[34.892]	ND	(1.7)	[34.459]
Heptachlor	ND	(0.36)	[36.219]	0.082 J	(0.35)	[35.002]	0.12 J	(0.35)	[34.892]	0.0066 J	(0.34)	[34.459]
Heptachlor epoxide	ND	(0.36)	[36.219]	ND	(0.35)	[35.002]	ND	(0.35)	[34.892]	ND	(0.34)	[34.459]
Methoxychlor	ND	(1.8)	[36.219]	ND	(1.8)	[35.002]	ND	(1.7)	[34.892]	ND	(1.7)	[34.459]
PCB-1016	ND	(3.6)	[36.219]	ND	(3.5)	[35.002]	ND	(3.5)	[34.892]	ND	(3.4)	[34.459]
PCB-1221	ND	(7.2)	[36.219]	ND	(7)	[35.002]	ND	(7)	[34.892]	ND	(6.9)	[34.459]
PCB-1232	ND	(7.2)	[36.219]	ND	(7)	[35.002]	ND	(7)	[34.892]	ND	(6.9)	[34.459]
PCB-1242	ND	(3.6)	[36.219]	ND	(3.5)	[35.002]	ND	(3.5)	[34.892]	ND	(3.4)	[34.459]
PCB-1248	ND	(3.6)	[36.219]	ND	(3.5)	[35.002]	ND	(3.5)	[34.892]	ND	(3.4)	[34.459]
PCB-1254	ND	(7.2)	[36.219]	ND	(7)	[35.002]	ND	(7)	[34.892]	ND	(6.9)	[34.459]
PCB-1260	ND	(7.2)	[36.219]	ND	(7)	[35.002]	ND	(7)	[34.892]	ND	(6.9)	[34.459]
Toxaphene	ND	(18)	[36.219]	ND	(18)	[35.002]	ND	(17)	[34.892]	ND	(17)	[34.459]
alpha-BHC	ND	(0.36)	[36.219]	ND	(0.35)	[35.002]	ND	(0.35)	[34.892]	ND	(0.34)	[34.459]
beta-BHC	ND	(0.36)	[36.219]	ND	(0.35)	[35.002]	ND	(0.35)	[34.892]	ND	(0.34)	[34.459]
delta-BHC	ND	(0.36)	[36.219]	ND	(0.35)	[35.002]	ND	(0.35)	[34.892]	ND	(0.34)	[34.459]

Compiled: 8 February 1994 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B1

RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID	LOCATION ID	SAMPLE ID	BEG. DEPTH - END DEPTH (FT.)											
	NONE	10	CAN97-10-10	44 - 46			NONE	10	CAN97-10-11	49 - 51			NONE	10	CAN97-10-12	54 - 56			NONE	10	CAN97-10-13	59 - 61		
gamma-BHC	ND		(0.36)	[36.219]	ND		(0.35)	[35.002]	ND		(0.35)	[34.892]	ND		(0.34)	[34.459]
SW8240 - Volatile Organics (ug/kg)																								
1,1,1-Trichloroethane	ND		(5.4)	[1.087]	ND		(5.3)	[1.052]	ND		(5.2)	[1.048]	ND		(5.2)	[1.037]
1,1,2,2-Tetrachloroethane	ND		(5.4)	[1.087]	ND		(5.3)	[1.052]	ND		(5.2)	[1.048]	ND		(5.2)	[1.037]
1,1,2-Trichloroethane	ND		(5.4)	[1.087]	ND		(5.3)	[1.052]	ND		(5.2)	[1.048]	ND		(5.2)	[1.037]
1,1-Dichloroethane	ND		(5.4)	[1.087]	ND		(5.3)	[1.052]	ND		(5.2)	[1.048]	ND		(5.2)	[1.037]
1,1-Dichloroethene	ND		(5.4)	[1.087]	ND		(5.3)	[1.052]	ND		(5.2)	[1.048]	ND		(5.2)	[1.037]
1,2,3-Trichloropropane	ND		(5.4)	[1.087]	ND		(5.3)	[1.052]	ND		(5.2)	[1.048]	ND		(5.2)	[1.037]
1,2-Dichloroethane	ND		(5.4)	[1.087]	ND		(5.3)	[1.052]	ND		(5.2)	[1.048]	ND		(5.2)	[1.037]
1,2-Dichloropropane	ND		(5.4)	[1.087]	ND		(5.3)	[1.052]	ND		(5.2)	[1.048]	ND		(5.2)	[1.037]
2-Chloroethyl vinyl ether	ND		(11)	[1.087]	ND		(11)	[1.052]	ND		(10)	[1.048]	ND		(10)	[1.037]
2-Ethylhexyl acetate		NA			5		()	[1.052]		NA				NA				
2-Hexanone	ND		(54)	[1.087]	ND		(53)	[1.052]	ND		(52)	[1.048]	ND		(52)	[1.037]
4-Methyl-2-pentanone(MIBK)	ND		(54)	[1.087]	ND		(53)	[1.052]	ND		(52)	[1.048]	ND		(52)	[1.037]
Acetone	97 J		(110)	[1.087]	ND		(110)	[1.052]	ND		(100)	[1.048]	ND		(100)	[1.037]
Acrolein	ND		(82)	[1.087]	ND		(79)	[1.052]	ND		(79)	[1.048]	ND		(78)	[1.037]
Acrylonitrile	ND		(54)	[1.087]	ND		(53)	[1.052]	ND		(52)	[1.048]	ND		(52)	[1.037]
Benzene	1.6 J		(5.4)	[1.087]	ND		(5.3)	[1.052]	ND		(5.2)	[1.048]	ND		(5.2)	[1.037]
Bromodichloromethane	ND		(5.4)	[1.087]	ND		(5.3)	[1.052]	ND		(5.2)	[1.048]	ND		(5.2)	[1.037]
Bromomethane	ND		(11)	[1.087]	ND		(11)	[1.052]	ND		(10)	[1.048]	ND		(10)	[1.037]
Carbon disulfide	ND		(5.4)	[1.087]	ND		(5.3)	[1.052]	ND		(5.2)	[1.048]	ND		(5.2)	[1.037]
Carbon tetrachloride	ND		(5.4)	[1.087]	ND		(5.3)	[1.052]	ND		(5.2)	[1.048]	ND		(5.2)	[1.037]
Chlorobenzene	2 J		(5.4)	[1.087]	ND		(5.3)	[1.052]	ND		(5.2)	[1.048]	ND		(5.2)	[1.037]
Chloroethane	ND		(11)	[1.087]	ND		(11)	[1.052]	ND		(10)	[1.048]	ND		(10)	[1.037]
Chloroform	ND		(5.4)	[1.087]	ND		(5.3)	[1.052]	ND		(5.2)	[1.048]	ND		(5.2)	[1.037]
Chloromethane	ND		(11)	[1.087]	ND		(11)	[1.052]	ND		(10)	[1.048]	ND		(10)	[1.037]
Dibromochloromethane	ND		(5.4)	[1.087]	ND		(5.3)	[1.052]	ND		(5.2)	[1.048]	ND		(5.2)	[1.037]
Dibromomethane	ND		(5.4)	[1.087]	ND		(5.3)	[1.052]	ND		(5.2)	[1.048]	ND		(5.2)	[1.037]
Dichlorodifluoromethane	ND		(22)	[1.087]	ND		(21)	[1.052]	ND		(21)	[1.048]	ND		(21)	[1.037]

Compiled: 8 Fel · 1994 () = Reporting Limit [] = Factor = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)																
	NONE 10 CAN97-10-10 44 - 46			NONE 10 CAN97-10-11 49 - 51			NONE 10 CAN97-10-12 54 - 56			NONE 10 CAN97-10-13 59 - 61		
Ethyl acetate	8.2	()	[1.087]	10	()	[1.052]	5.4	()	[1.048]	NA		
Ethyl benzene	ND	(5.4)	[1.087]	ND	(5.3)	[1.052]	ND	(5.2)	[1.048]	ND	(5.2)	[1.037]
Ethyl methacrylate	ND	(16)	[1.087]	ND	(16)	[1.052]	ND	(16)	[1.048]	ND	(16)	[1.037]
Iodomethane	ND	(5.4)	[1.087]	ND	(5.3)	[1.052]	ND	(5.2)	[1.048]	ND	(5.2)	[1.037]
Methyl ethyl ketone	ND	(110)	[1.087]	ND	(110)	[1.052]	ND	(100)	[1.048]	ND	(100)	[1.037]
Methylene chloride	ND	(5.4)	[1.087]	ND	(5.3)	[1.052]	ND	(5.2)	[1.048]	ND	(5.2)	[1.037]
Styrene	ND	(5.4)	[1.087]	ND	(5.3)	[1.052]	ND	(5.2)	[1.048]	ND	(5.2)	[1.037]
Tetrachloroethene	ND	(5.4)	[1.087]	ND	(5.3)	[1.052]	ND	(5.2)	[1.048]	ND	(5.2)	[1.037]
Toluene	1.9 J	(5.4)	[1.087]	ND	(5.3)	[1.052]	ND	(5.2)	[1.048]	ND	(5.2)	[1.037]
Tribromomethane(Bromoform)	ND	(5.4)	[1.087]	ND	(5.3)	[1.052]	ND	(5.2)	[1.048]	ND	(5.2)	[1.037]
Trichloroethene	1.9 J	(5.4)	[1.087]	ND	(5.3)	[1.052]	ND	(5.2)	[1.048]	ND	(5.2)	[1.037]
Trichlorofluoromethane	ND	(11)	[1.087]	ND	(11)	[1.052]	ND	(10)	[1.048]	ND	(10)	[1.037]
Unknown alkane	NA			13	()	[1.052]	NA			NA		
Vinyl acetate	ND	(5.4)	[1.087]	ND	(5.3)	[1.052]	ND	(5.2)	[1.048]	ND	(5.2)	[1.037]
Vinyl chloride	ND	(11)	[1.087]	ND	(11)	[1.052]	ND	(10)	[1.048]	ND	(10)	[1.037]
Xylenes	ND	(5.4)	[1.087]	ND	(5.3)	[1.052]	ND	(5.2)	[1.048]	ND	(5.2)	[1.037]
cis-1,3-Dichloropropene	ND	(5.4)	[1.087]	ND	(5.3)	[1.052]	ND	(5.2)	[1.048]	ND	(5.2)	[1.037]
trans-1,2-Dichloroethene	ND	(5.4)	[1.087]	ND	(5.3)	[1.052]	ND	(5.2)	[1.048]	ND	(5.2)	[1.037]
trans-1,3-Dichloropropene	ND	(5.4)	[1.087]	ND	(5.3)	[1.052]	ND	(5.2)	[1.048]	ND	(5.2)	[1.037]
trans-1,4-Dichloro-2-butene	ND	(11)	[1.087]	ND	(11)	[1.052]	ND	(10)	[1.048]	ND	(10)	[1.037]
SW8270 - Semivolatile Organics (ug/kg)												
1,2,4,5-Tetrachlorobenzene	ND	(360)	[.036]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(340)	[.035]
1,2,4-Trichlorobenzene	ND	(360)	[.036]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(340)	[.035]
1,2-Dichlorobenzene	ND	(360)	[.036]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(340)	[.035]
1,2-Diphenylhydrazine	ND	(360)	[.036]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(340)	[.035]
1,3-Dichlorobenzene	ND	(360)	[.036]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(340)	[.035]
1,4-Dichlorobenzene	ND	(360)	[.036]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(340)	[.035]
1-Chloronaphthalene	ND	(360)	[.036]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(340)	[.035]
1-Naphthylamine	ND	(360)	[.036]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(340)	[.035]

Compiled: 8 February 1994 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)																
	NONE 10 CAN97-10-10 44 - 46				NONE 10 CAN97-10-11 49 - 51				NONE 10 CAN97-10-12 54 - 56				NONE 10 CAN97-10-13 59 - 61			
2,3,4,6-Tetrachlorophenol	ND	(720)	[	.036]	ND	(700)	[	.035]	ND	(700)	[	.035]	ND	(690)	[	.035]
2,4,5-Trichlorophenol	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(340)	[	.035]
2,4,6-Trichlorophenol	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(340)	[	.035]
2,4-Dichlorophenol	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(340)	[	.035]
2,4-Dimethylphenol	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(340)	[	.035]
2,4-Dinitrophenol	ND	(1800)	[	.036]	ND	(1700)	[	.035]	ND	(1700)	[	.035]	ND	(1700)	[	.035]
2,4-Dinitrotoluene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(340)	[	.035]
2,6-Dichlorophenol	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(340)	[	.035]
2,6-Dinitrotoluene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(340)	[	.035]
2-Chloronaphthalene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(340)	[	.035]
2-Chlorophenol	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(340)	[	.035]
2-Methylnaphthalene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(340)	[	.035]
2-Methylphenol(o-cresol)	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(340)	[	.035]
2-Naphthylamine	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(340)	[	.035]
2-Nitroaniline	ND	(1800)	[	.036]	ND	(1700)	[	.035]	ND	(1700)	[	.035]	ND	(1700)	[	.035]
2-Nitrophenol	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(340)	[	.035]
2-Picoline	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(340)	[	.035]
3,3'-Dichlorobenzidine	ND	(720)	[	.036]	ND	(700)	[	.035]	ND	(700)	[	.035]	ND	(690)	[	.035]
3-Methylcholanthrene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(340)	[	.035]
3-Nitroaniline	ND	(1800)	[	.036]	ND	(1700)	[	.035]	ND	(1700)	[	.035]	ND	(1700)	[	.035]
4,6-Dinitro-2-methylphenol	ND	(1800)	[	.036]	ND	(1700)	[	.035]	ND	(1700)	[	.035]	ND	(1700)	[	.035]
4-Aminobiphenyl	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(340)	[	.035]
4-Bromophenyl phenyl ether	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(340)	[	.035]
4-Chloro-3-methylphenol	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(340)	[	.035]
4-Chlorophenyl phenyl ether	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(340)	[	.035]
4-Methylphenol(p-cresol)	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(340)	[	.035]
4-Nitroaniline	ND	(1800)	[	.036]	ND	(1700)	[	.035]	ND	(1700)	[	.035]	ND	(1700)	[	.035]
4-Nitrophenol	ND	(1800)	[	.036]	ND	(1700)	[	.035]	ND	(1700)	[	.035]	ND	(1700)	[	.035]
7,12-Dimethylbenz(a)anthracene	ND	(910)	[	.036]	ND	(870)	[	.035]	ND	(870)	[	.035]	ND	(860)	[	.035]

Compiled: 8 Fe y 1994 () = Reporting Limit [] = Factor = Not Detected NA = Not Applicable

TABLE 81 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 10 CAN97-10-10 44 - 46			NONE 10 CAN97-10-11 49 - 51			NONE 10 CAN97-10-12 54 - 56			NONE 10 CAN97-10-13 59 - 61		
Acenaphthene	ND	(360)	[.036]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(340)	[.035]
Acenaphthylene	ND	(360)	[.036]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(340)	[.035]
Acetophenone	ND	(360)	[.036]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(340)	[.035]
Aniline	ND	(360)	[.036]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(340)	[.035]
Anthracene	ND	(360)	[.036]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(340)	[.035]
Benzidine	ND	(360)	[.036]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(340)	[.035]
Benzo(a)anthracene	ND	(360)	[.036]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(340)	[.035]
Benzo(a)pyrene	ND	(360)	[.036]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(340)	[.035]
Benzo(b)fluoranthene	ND	(360)	[.036]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(340)	[.035]
Benzo(g,h,i)perylene	ND	(360)	[.036]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(340)	[.035]
Benzo(k)fluoranthene	ND	(360)	[.036]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(340)	[.035]
Benzoic acid	ND	(1800)	[.036]	ND	(1700)	[.035]	ND	(1700)	[.035]	ND	(1700)	[.035]
Benzyl alcohol	ND	(360)	[.036]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(340)	[.035]
Butylbenzylphthalate	ND	(360)	[.036]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(340)	[.035]
Chrysene	ND	(360)	[.036]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(340)	[.035]
Cyclohexenone	NA			NA			170	(0)	[.035]	NA		
Di-n-octylphthalate	ND	(360)	[.036]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(340)	[.035]
Dibenz(a,h)anthracene	ND	(360)	[.036]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(340)	[.035]
Dibenz(a,j)acridine	ND	(360)	[.036]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(340)	[.035]
Dibenzofuran	ND	(360)	[.036]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(340)	[.035]
Dibutylphthalate	ND	(360)	[.036]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(340)	[.035]
Diethylphthalate	ND	(360)	[.036]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(340)	[.035]
Dimethylphenethylamine	ND	(360)	[.036]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(340)	[.035]
Dimethylphthalate	ND	(360)	[.036]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(340)	[.035]
Diphenylamine	ND	(360)	[.036]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(340)	[.035]
Ethyl methanesulfonate	ND	(360)	[.036]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(340)	[.035]
Fluoranthene	ND	(360)	[.036]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(340)	[.035]
Fluorene	ND	(360)	[.036]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(340)	[.035]
Hexachlorobenzene	ND	(360)	[.036]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(340)	[.035]

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)														
	NONE 10 CAN97-10-10 44 - 46				NONE 10 CAN97-10-11 49 - 51				NONE 10 CAN97-10-12 54 - 56				NONE 10 CAN97-10-13 59 - 61		
Hexachlorobutadiene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(340)	[.035]
Hexachlorocyclopentadiene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(340)	[.035]
Hexachloroethane	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(340)	[.035]
Indeno(1,2,3-cd)pyrene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(340)	[.035]
Isophorone	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(340)	[.035]
Methyl methanesulfonate	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(340)	[.035]
N-Nitroso-di-n-butylamine	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(340)	[.035]
N-Nitrosodimethylamine	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(340)	[.035]
N-Nitrosodiphenylamine	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(340)	[.035]
N-Nitrosodipropylamine	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(340)	[.035]
N-Nitrosopiperidine	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(340)	[.035]
Naphthalene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(340)	[.035]
Nitrobenzene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(340)	[.035]
Pentachlorobenzene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(340)	[.035]
Pentachloronitrobenzene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(340)	[.035]
Pentachlorophenol	ND	(1800)	[	.036]	ND	(1700)	[	.035]	ND	(1700)	[	.035]	ND	(1700)	[.035]
Phenacetin	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(340)	[.035]
Phenanthrene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(340)	[.035]
Phenol	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(340)	[.035]
Pronamide	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(340)	[.035]
Pyrene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(340)	[.035]
Pyridine	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(340)	[.035]
Unknown	NA				NA				280	(0)	[	.035]	450	(0)	[.035]
bis(2-Chloroethoxy)methane	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(340)	[.035]
bis(2-Chloroethyl)ether	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(340)	[.035]
bis(2-Chloroisopropyl)ether	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(340)	[.035]
bis(2-Ethylhexyl)phthalate	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(340)	[.035]
p-Chloroaniline	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(340)	[.035]
p-Dimethylaminoazobenzene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(340)	[.035]

Compiled: 8 F[illegible]y 1994 () = Reporting Limit [] = Factor[illegible] = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)															
	NONE 11 CAN97-11-01 0 - 2			NONE 11 CAN97-11-02 4 - 6			NONE 11 CAN97-11-03 9 - 11			NONE 11 CAN97-11-04 14 - 16		
EPA 418.1 - Total Recoverable Petroleum Hydrocarbons (mg/kg)												
Hydrocarbons	160	(28)	[5.618]	ND	(29)	[5.882]	ND	(28)	[5.682]	30 @	(29)	[5.814]
SW8015 - Total Petroleum Hydrocarbons (ug/kg)												
Benzene (2)	NA			ND	(34)	[114.000]	NA			ND	(35)	[116.000]
Diesel (2)	NA			12000 GB	(5900)	[117.647]	NA			13000 GB@	(5800)	[116.279]
Ethylbenzene (2)	NA			ND	(34)	[114.000]	NA			ND	(35)	[116.000]
Gasoline (2)	NA			ND	(5700)	[114.000]	NA			ND	(5800)	[116.000]
Jet fuel (2)	NA			ND	(12000)	[117.647]	NA			ND	(12000)	[116.279]
Kerosene (2)	NA			ND	(12000)	[117.647]	NA			ND	(12000)	[116.279]
Toluene (2)	NA			ND	(34)	[114.000]	NA			ND	(35)	[116.000]
Xylenes (total) (2)	NA			ND	(57)	[114.000]	NA			ND	(58)	[116.000]
SW8080 - Organochlorine Pesticides and PCBs (ug/kg)												
4,4'-DDD	ND	(3.7)	[372.024]	0.8 @	(0.39)	[39.185]	ND	(0.38)	[37.793]	ND	(0.39)	[38.850]
4,4'-DDE	15 @	(3.7)	[372.024]	ND	(0.39)	[39.185]	ND	(0.38)	[37.793]	ND	(0.39)	[38.850]
4,4'-DDT	13 @	(7.4)	[372.024]	ND	(0.78)	[39.185]	ND	(0.76)	[37.793]	0.95 @	(0.78)	[38.850]
Aldrin	ND	(3.7)	[372.024]	ND	(0.39)	[39.185]	ND	(0.38)	[37.793]	ND	(0.39)	[38.850]
Chlordane	ND	(19)	[372.024]	ND	(2)	[39.185]	ND	(1.9)	[37.793]	ND	(1.9)	[38.850]
Dieldrin	ND	(3.7)	[372.024]	ND	(0.39)	[39.185]	ND	(0.38)	[37.793]	ND	(0.39)	[38.850]
Endosulfan I	ND	(3.7)	[372.024]	ND	(0.39)	[39.185]	ND	(0.38)	[37.793]	ND	(0.39)	[38.850]
Endosulfan II	ND	(11)	[372.024]	ND	(1.2)	[39.185]	ND	(1.1)	[37.793]	ND	(1.2)	[38.850]
Endosulfan Sulfate	ND	(19)	[372.024]	ND	(2)	[39.185]	ND	(1.9)	[37.793]	ND	(1.9)	[38.850]
Endrin	ND	(3.7)	[372.024]	ND	(0.39)	[39.185]	ND	(0.38)	[37.793]	ND	(0.39)	[38.850]
Endrin Aldehyde	ND	(7.4)	[372.024]	ND	(0.78)	[39.185]	ND	(0.76)	[37.793]	ND	(0.78)	[38.850]
Endrin Ketone	3.2 J	(19)	[372.024]	ND	(2)	[39.185]	ND	(1.9)	[37.793]	ND	(1.9)	[38.850]
Heptachlor	ND	(3.7)	[372.024]	ND	(0.39)	[39.185]	0.25 J	(0.38)	[37.793]	ND	(0.39)	[38.850]
Heptachlor epoxide	ND	(3.7)	[372.024]	ND	(0.39)	[39.185]	ND	(0.38)	[37.793]	ND	(0.39)	[38.850]
Methoxychlor	ND	(19)	[372.024]	ND	(2)	[39.185]	ND	(1.9)	[37.793]	ND	(1.9)	[38.850]
PCB-1016	ND	(37)	[372.024]	ND	(3.9)	[39.185]	ND	(3.8)	[37.793]	ND	(3.9)	[38.850]
PCB-1221	ND	(74)	[372.024]	ND	(7.8)	[39.185]	ND	(7.6)	[37.793]	ND	(7.8)	[38.850]

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TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 11 CAN97-11-01 0 - 2			NONE 11 CAN97-11-02 4 - 6			NONE 11 CAN97-11-03 9 - 11			NONE 11 CAN97-11-04 14 - 16		
PCB-1232	ND	(74)	[372.024]	ND	(7.8)	[39.185]	ND	(7.6)	[37.793]	ND	(7.8)	[38.850]
PCB-1242	ND	(37)	[372.024]	ND	(3.9)	[39.185]	ND	(3.8)	[37.793]	ND	(3.9)	[38.850]
PCB-1248	ND	(37)	[372.024]	ND	(3.9)	[39.185]	ND	(3.8)	[37.793]	ND	(3.9)	[38.850]
PCB-1254	ND	(74)	[372.024]	ND	(7.8)	[39.185]	ND	(7.6)	[37.793]	ND	(7.8)	[38.850]
PCB-1260	ND	(74)	[372.024]	ND	(7.8)	[39.185]	ND	(7.6)	[37.793]	ND	(7.8)	[38.850]
Toxaphene	ND	(190)	[372.024]	ND	(20)	[39.185]	ND	(19)	[37.793]	ND	(19)	[38.850]
alpha-BHC	ND	(3.7)	[372.024]	ND	(0.39)	[39.185]	ND	(0.38)	[37.793]	ND	(0.39)	[38.850]
beta-BHC	2.8 J	(3.7)	[372.024]	ND	(0.39)	[39.185]	ND	(0.38)	[37.793]	ND	(0.39)	[38.850]
delta-BHC	ND	(3.7)	[372.024]	ND	(0.39)	[39.185]	ND	(0.38)	[37.793]	ND	(0.39)	[38.850]
gamma-BHC	ND	(3.7)	[372.024]	ND	(0.39)	[39.185]	ND	(0.38)	[37.793]	ND	(0.39)	[38.850]
SW8150 - Chlorinated Herbicides (ug/kg)												
2,4,5-T	NA			ND	(7.8)	[39.108]	NA			ND	(7.8)	[38.775]
2,4,5-TP (Silvex)	NA			ND	(6.6)	[39.108]	NA			ND	(6.6)	[38.775]
2,4-D	NA			ND	(47)	[39.108]	NA			ND	(47)	[38.775]
2,4-DB	NA			ND	(36)	[39.108]	NA			ND	(35)	[38.775]
Dalapon	NA			ND	(230)	[39.108]	NA			ND	(220)	[38.775]
Dicamba	NA			ND	(11)	[39.108]	NA			ND	(10)	[38.775]
Dichloroprop	NA			6.6 J	(25)	[39.108]	NA			3.7 J	(25)	[38.775]
Dinoseb	NA			ND	(5.9)	[39.108]	NA			ND	(5.8)	[38.775]
MCPA	NA			ND	(9700)	[39.108]	NA			ND	(9700)	[38.775]
MCPP	NA			ND	(7500)	[39.108]	NA			ND	(7400)	[38.775]
SW8240 - Volatile Organics (ug/kg)												
1,1,1-Trichloroethane	ND	(5.6)	[1.117]	ND	(5.9)	[1.177]	ND	(5.7)	[1.134]	ND	(5.8)	[1.166]
1,1,2,2-Tetrachloroethane	ND	(5.6)	[1.117]	ND	(5.9)	[1.177]	ND	(5.7)	[1.134]	ND	(5.8)	[1.166]
1,1,2-Trichloroethane	ND	(5.6)	[1.117]	ND	(5.9)	[1.177]	ND	(5.7)	[1.134]	ND	(5.8)	[1.166]
1,1-Dichloroethane	ND	(5.6)	[1.117]	ND	(5.9)	[1.177]	ND	(5.7)	[1.134]	ND	(5.8)	[1.166]
1,1-Dichloroethene	ND	(5.6)	[1.117]	ND	(5.9)	[1.177]	ND	(5.7)	[1.134]	ND	(5.8)	[1.166]
1,2,3-Trichloropropane	ND	(5.6)	[1.117]	ND	(5.9)	[1.177]	ND	(5.7)	[1.134]	ND	(5.8)	[1.166]
1,2-Dichloroethane	ND	(5.6)	[1.117]	ND	(5.9)	[1.177]	ND	(5.7)	[1.134]	ND	(5.8)	[1.166]

Compiled: 8 F(y 1994 () = Reporting Limit [] = Factor = Not Detected NA = Not Applicable

TABLE B1

RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID	LOCATION ID	SAMPLE ID	BEG. DEPTH - END DEPTH (FT.)												
	NONE	11	CAN97-11-01	0 - 2			NONE	11	CAN97-11-02	4 - 6			NONE	11	CAN97-11-03	9 - 11			NONE	11	CAN97-11-04	14 - 16		
1,2-Dichloropropane	ND		(5.6)	[1.117]	ND		(5.9)	[1.177]	ND		(5.7)	[1.134]	ND		(5.8)	[1.166]
2-Chloroethyl vinyl ether	ND		(11)	[1.117]	ND		(12)	[1.177]	ND		(11)	[1.134]	ND		(12)	[1.166]
2-Hexanone	ND		(56)	[1.117]	ND		(59)	[1.177]	ND		(57)	[1.134]	ND		(58)	[1.166]
4-Methyl-2-pentanone(MIBK)	ND		(56)	[1.117]	ND		(59)	[1.177]	ND		(57)	[1.134]	ND		(58)	[1.166]
Acetone	ND		(110)	[1.117]	ND		(120)	[1.177]	ND		(110)	[1.134]	ND		(120)	[1.166]
Acrolein	ND		(84)	[1.117]	ND		(88)	[1.177]	ND		(85)	[1.134]	ND		(87)	[1.166]
Acrylonitrile	ND		(56)	[1.117]	ND		(59)	[1.177]	ND		(57)	[1.134]	ND		(58)	[1.166]
Benzene	ND		(5.6)	[1.117]	ND		(5.9)	[1.177]	ND		(5.7)	[1.134]	ND		(5.8)	[1.166]
Bromodichloromethane	ND		(5.6)	[1.117]	ND		(5.9)	[1.177]	ND		(5.7)	[1.134]	ND		(5.8)	[1.166]
Bromomethane	ND		(11)	[1.117]	ND		(12)	[1.177]	ND		(11)	[1.134]	ND		(12)	[1.166]
Carbon disulfide	ND		(5.6)	[1.117]	ND		(5.9)	[1.177]	ND		(5.7)	[1.134]	ND		(5.8)	[1.166]
Carbon tetrachloride	ND		(5.6)	[1.117]	ND		(5.9)	[1.177]	ND		(5.7)	[1.134]	ND		(5.8)	[1.166]
Chlorobenzene	ND		(5.6)	[1.117]	ND		(5.9)	[1.177]	ND		(5.7)	[1.134]	ND		(5.8)	[1.166]
Chloroethane	ND		(11)	[1.117]	ND		(12)	[1.177]	ND		(11)	[1.134]	ND		(12)	[1.166]
Chloroform	ND		(5.6)	[1.117]	ND		(5.9)	[1.177]	ND		(5.7)	[1.134]	ND		(5.8)	[1.166]
Chloromethane	ND		(11)	[1.117]	ND		(12)	[1.177]	ND		(11)	[1.134]	ND		(12)	[1.166]
Dibromochloromethane	ND		(5.6)	[1.117]	ND		(5.9)	[1.177]	ND		(5.7)	[1.134]	ND		(5.8)	[1.166]
Dibromomethane	ND		(5.6)	[1.117]	ND		(5.9)	[1.177]	ND		(5.7)	[1.134]	ND		(5.8)	[1.166]
Dichlorodifluoromethane	ND		(22)	[1.117]	ND		(24)	[1.177]	ND		(23)	[1.134]	ND		(23)	[1.166]
Ethyl acetate		NA				NA				NA			35		()	[1.166]
Ethyl benzene	ND		(5.6)	[1.117]	ND		(5.9)	[1.177]	ND		(5.7)	[1.134]	ND		(5.8)	[1.166]
Ethyl methacrylate	ND		(17)	[1.117]	ND		(18)	[1.177]	ND		(17)	[1.134]	ND		(17)	[1.166]
Iodomethane	ND		(5.6)	[1.117]	ND		(5.9)	[1.177]	ND		(5.7)	[1.134]	ND		(5.8)	[1.166]
Methyl ethyl ketone	ND		(110)	[1.117]	9.5 J		(120)	[1.177]	ND		(110)	[1.134]	ND		(120)	[1.166]
Methylene chloride	ND		(5.6)	[1.117]	ND		(5.9)	[1.177]	ND		(5.7)	[1.134]	ND		(5.8)	[1.166]
Styrene	ND		(5.6)	[1.117]	ND		(5.9)	[1.177]	ND		(5.7)	[1.134]	ND		(5.8)	[1.166]
Tetrachloroethene	ND		(5.6)	[1.117]	ND		(5.9)	[1.177]	ND		(5.7)	[1.134]	ND		(5.8)	[1.166]
Toluene	3.6 J		(5.6)	[1.117]	5.2 J		(5.9)	[1.177]	ND		(5.7)	[1.134]	11	@	(5.8)	[1.166]
Tribromomethane(Bromoform)	ND		(5.6)	[1.117]	ND		(5.9)	[1.177]	ND		(5.7)	[1.134]	ND		(5.8)	[1.166]

Compiled: 8 February 1994

() = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID	LOCATION ID	SAMPLE ID	BEG. DEPTH - END DEPTH (FT.)										
	NONE	11	CAN97-11-01	0 - 2			NONE	11	CAN97-11-02	4 - 6			NONE	11	CAN97-11-03	9 - 11			NONE	11	CAN97-11-04	14 - 16		
Trichloroethene	ND	(5.6)	[1.117]				ND	(5.9)	[1.177]				ND	(5.7)	[1.134]				ND	(5.8)	[1.166]			
Trichlorofluoromethane	ND	(11)	[1.117]				ND	(12)	[1.177]				ND	(11)	[1.134]				ND	(12)	[1.166]			
Unknown hydrocarbon	NA						24	()	[1.177]				NA						21	()	[1.166]			
Vinyl acetate	ND	(5.6)	[1.117]				ND	(5.9)	[1.177]				ND	(5.7)	[1.134]				ND	(5.8)	[1.166]			
Vinyl chloride	ND	(11)	[1.117]				ND	(12)	[1.177]				ND	(11)	[1.134]				ND	(12)	[1.166]			
Xylenes	ND	(5.6)	[1.117]				ND	(5.9)	[1.177]				ND	(5.7)	[1.134]				ND	(5.8)	[1.166]			
cis-1,3-Dichloropropene	ND	(5.6)	[1.117]				ND	(5.9)	[1.177]				ND	(5.7)	[1.134]				ND	(5.8)	[1.166]			
trans-1,2-Dichloroethene	ND	(5.6)	[1.117]				ND	(5.9)	[1.177]				ND	(5.7)	[1.134]				ND	(5.8)	[1.166]			
trans-1,3-Dichloropropene	ND	(5.6)	[1.117]				ND	(5.9)	[1.177]				ND	(5.7)	[1.134]				ND	(5.8)	[1.166]			
trans-1,4-Dichloro-2-butene	ND	(11)	[1.117]				ND	(12)	[1.177]				ND	(11)	[1.134]				ND	(12)	[1.166]			
SW8270 - Semivolatile Organics (ug/kg)																								
1,2,4,5-Tetrachlorobenzene	ND	(370)	[.037]				ND	(390)	[.039]				ND	(380)	[.038]				ND	(390)	[.039]			
1,2,4-Trichlorobenzene	ND	(370)	[.037]				ND	(390)	[.039]				ND	(380)	[.038]				ND	(390)	[.039]			
1,2-Dichlorobenzene	ND	(370)	[.037]				ND	(390)	[.039]				ND	(380)	[.038]				ND	(390)	[.039]			
1,2-Diphenylhydrazine	ND	(370)	[.037]				ND	(390)	[.039]				ND	(380)	[.038]				ND	(390)	[.039]			
1,3-Dichlorobenzene	ND	(370)	[.037]				ND	(390)	[.039]				ND	(380)	[.038]				ND	(390)	[.039]			
1,4-Dichlorobenzene	ND	(370)	[.037]				ND	(390)	[.039]				ND	(380)	[.038]				ND	(390)	[.039]			
1-Chloronaphthalene	ND	(370)	[.037]				ND	(390)	[.039]				ND	(380)	[.038]				ND	(390)	[.039]			
1-Naphthylamine	ND	(370)	[.037]				ND	(390)	[.039]				ND	(380)	[.038]				ND	(390)	[.039]			
2,3,4,6-Tetrachlorophenol	ND	(740)	[.037]				ND	(780)	[.039]				ND	(760)	[.038]				ND	(780)	[.039]			
2,4,5-Trichlorophenol	ND	(370)	[.037]				ND	(390)	[.039]				ND	(380)	[.038]				ND	(390)	[.039]			
2,4,6-Trichlorophenol	ND	(370)	[.037]				ND	(390)	[.039]				ND	(380)	[.038]				ND	(390)	[.039]			
2,4-Dichlorophenol	ND	(370)	[.037]				ND	(390)	[.039]				ND	(380)	[.038]				ND	(390)	[.039]			
2,4-Dimethylphenol	ND	(370)	[.037]				ND	(390)	[.039]				ND	(380)	[.038]				ND	(390)	[.039]			
2,4-Dinitrophenol	ND	(1900)	[.037]				ND	(2000)	[.039]				ND	(1900)	[.038]				ND	(1900)	[.039]			
2,4-Dinitrotoluene	ND	(370)	[.037]				ND	(390)	[.039]				ND	(380)	[.038]				ND	(390)	[.039]			
2,6-Dichlorophenol	ND	(370)	[.037]				ND	(390)	[.039]				ND	(380)	[.038]				ND	(390)	[.039]			
2,6-Dinitrotoluene	ND	(370)	[.037]				ND	(390)	[.039]				ND	(380)	[.038]				ND	(390)	[.039]			
2-Chloronaphthalene	ND	(370)	[.037]				ND	(390)	[.039]				ND	(380)	[.038]				ND	(390)	[.039]			

Compiled: 8 Fe v 1994 () = Reporting Limit [] = Factor = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID	LOCATION ID	SAMPLE ID	BEG. DEPTH - END DEPTH (FT.)												
	NONE	11	CAN97-11-01	0 - 2			NONE	11	CAN97-11-02	4 - 6			NONE	11	CAN97-11-03	9 - 11			NONE	11	CAN97-11-04	14 - 16		
2-Chlorophenol	ND	(370)	[	.037]	ND	(390)	[	.039]	ND	(380)	[	.038]	ND	(390)	[	.039]
2-Methylnaphthalene	23 J	(370)	[	.037]	ND	(390)	[	.039]	ND	(380)	[	.038]	ND	(390)	[	.039]
2-Methylphenol(o-cresol)	ND	(370)	[	.037]	ND	(390)	[	.039]	ND	(380)	[	.038]	ND	(390)	[	.039]
2-Naphthylamine	ND	(370)	[	.037]	ND	(390)	[	.039]	ND	(380)	[	.038]	ND	(390)	[	.039]
2-Nitroaniline	ND	(1900)	[	.037]	ND	(2000)	[	.039]	ND	(1900)	[	.038]	ND	(1900)	[	.039]
2-Nitrophenol	ND	(370)	[	.037]	ND	(390)	[	.039]	ND	(380)	[	.038]	ND	(390)	[	.039]
2-Picoline	ND	(370)	[	.037]	ND	(390)	[	.039]	ND	(380)	[	.038]	ND	(390)	[	.039]
3,3'-Dichlorobenzidine	ND	(740)	[	.037]	ND	(780)	[	.039]	ND	(760)	[	.038]	ND	(780)	[	.039]
3-Methylcholanthrene	ND	(370)	[	.037]	ND	(390)	[	.039]	ND	(380)	[	.038]	ND	(390)	[	.039]
3-Nitroaniline	ND	(1900)	[	.037]	ND	(2000)	[	.039]	ND	(1900)	[	.038]	ND	(1900)	[	.039]
4,6-Dinitro-2-methylphenol	ND	(1900)	[	.037]	ND	(2000)	[	.039]	ND	(1900)	[	.038]	ND	(1900)	[	.039]
4-Aminobiphenyl	ND	(370)	[	.037]	ND	(390)	[	.039]	ND	(380)	[	.038]	ND	(390)	[	.039]
4-Bromophenyl phenyl ether	ND	(370)	[	.037]	ND	(390)	[	.039]	ND	(380)	[	.038]	ND	(390)	[	.039]
4-Chloro-3-methylphenol	ND	(370)	[	.037]	ND	(390)	[	.039]	ND	(380)	[	.038]	ND	(390)	[	.039]
4-Chlorophenyl phenyl ether	ND	(370)	[	.037]	ND	(390)	[	.039]	ND	(380)	[	.038]	ND	(390)	[	.039]
4-Methylphenol(p-cresol)	ND	(370)	[	.037]	ND	(390)	[	.039]	ND	(380)	[	.038]	ND	(390)	[	.039]
4-Nitroaniline	ND	(1900)	[	.037]	ND	(2000)	[	.039]	ND	(1900)	[	.038]	ND	(1900)	[	.039]
4-Nitrophenol	ND	(1900)	[	.037]	ND	(2000)	[	.039]	ND	(1900)	[	.038]	ND	(1900)	[	.039]
7,12-Dimethylbenz(a)anthracene	ND	(930)	[	.037]	ND	(980)	[	.039]	ND	(940)	[	.038]	ND	(970)	[	.039]
Acenaphthene	ND	(370)	[	.037]	ND	(390)	[	.039]	ND	(380)	[	.038]	ND	(390)	[	.039]
Acenaphthylene	ND	(370)	[	.037]	ND	(390)	[	.039]	ND	(380)	[	.038]	ND	(390)	[	.039]
Acetophenone	ND	(370)	[	.037]	ND	(390)	[	.039]	ND	(380)	[	.038]	ND	(390)	[	.039]
Aniline	ND	(370)	[	.037]	ND	(390)	[	.039]	ND	(380)	[	.038]	ND	(390)	[	.039]
Anthracene	4.4 J	(370)	[	.037]	ND	(390)	[	.039]	ND	(380)	[	.038]	ND	(390)	[	.039]
Benzidine	ND	(370)	[	.037]	ND	(390)	[	.039]	ND	(380)	[	.038]	ND	(390)	[	.039]
Benzo(a)anthracene	70 J	(370)	[	.037]	ND	(390)	[	.039]	ND	(380)	[	.038]	ND	(390)	[	.039]
Benzo(a)pyrene	86 J	(370)	[	.037]	ND	(390)	[	.039]	ND	(380)	[	.038]	ND	(390)	[	.039]
Benzo(b)fluoranthene	200 JX	(370)	[	.037]	ND	(390)	[	.039]	ND	(380)	[	.038]	ND	(390)	[	.039]
Benzo(g,h,i)perylene	58 J	(370)	[	.037]	ND	(390)	[	.039]	ND	(380)	[	.038]	ND	(390)	[	.039]

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TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID	LOCATION ID	SAMPLE ID	BEG. DEPTH - END DEPTH (FT.)																
	NONE	11	CAN97-11-01	0 - 2			NONE	11	CAN97-11-02	4 - 6			NONE	11	CAN97-11-03	9 - 11			NONE	11	CAN97-11-04	14 - 16		
Benzo(k)fluoranthene	200	JX	(370)	[	.037]	ND		(390)	[	.039]	ND		(380)	[	.038]	ND		(390)	[	.039]
Benzoic acid	ND		(1900)	[	.037]	ND		(2000)	[	.039]	ND		(1900)	[	.038]	45	J	(1900)	[	.039]
Benzyl alcohol	ND		(370)	[	.037]	ND		(390)	[	.039]	ND		(380)	[	.038]	ND		(390)	[	.039]
Butylbenzylphthalate	ND		(370)	[	.037]	ND		(390)	[	.039]	ND		(380)	[	.038]	ND		(390)	[	.039]
Chrysene	94	J	(370)	[	.037]	ND		(390)	[	.039]	ND		(380)	[	.038]	ND		(390)	[	.039]
Di-n-octylphthalate	ND		(370)	[	.037]	ND		(390)	[	.039]	ND		(380)	[	.038]	ND		(390)	[	.039]
Dibenz(a,h)anthracene	ND		(370)	[	.037]	ND		(390)	[	.039]	ND		(380)	[	.038]	ND		(390)	[	.039]
Dibenz(a,j)acridine	ND		(370)	[	.037]	ND		(390)	[	.039]	ND		(380)	[	.038]	ND		(390)	[	.039]
Dibenzofuran	ND		(370)	[	.037]	ND		(390)	[	.039]	ND		(380)	[	.038]	ND		(390)	[	.039]
Dibutylphthalate	ND		(370)	[	.037]	ND		(390)	[	.039]	ND		(380)	[	.038]	ND		(390)	[	.039]
Diethylphthalate	ND		(370)	[	.037]	ND		(390)	[	.039]	ND		(380)	[	.038]	ND		(390)	[	.039]
Dimethylisopropylnaphthalene	190		(0)	[	.037]	NA					NA					NA				
Dimethylphenethylamine	ND		(370)	[	.037]	ND		(390)	[	.039]	ND		(380)	[	.038]	ND		(390)	[	.039]
Dimethylphthalate	ND		(370)	[	.037]	ND		(390)	[	.039]	ND		(380)	[	.038]	ND		(390)	[	.039]
Diphenylamine	ND		(370)	[	.037]	ND		(390)	[	.039]	ND		(380)	[	.038]	ND		(390)	[	.039]
Ethyl methanesulfonate	ND		(370)	[	.037]	ND		(390)	[	.039]	ND		(380)	[	.038]	ND		(390)	[	.039]
Fluoranthene	79	J	(370)	[	.037]	ND		(390)	[	.039]	ND		(380)	[	.038]	ND		(390)	[	.039]
Fluorene	ND		(370)	[	.037]	ND		(390)	[	.039]	ND		(380)	[	.038]	ND		(390)	[	.039]
[illegible]chlorobenzene	ND		(370)	[	.037]	ND		(390)	[	.039]	ND		(380)	[	.038]	ND		(390)	[	.039]
Hexachlorobutadiene	ND		(370)	[	.037]	ND		(390)	[	.039]	ND		(380)	[	.038]	ND		(390)	[	.039]
Hexachlorocyclopentadiene	ND		(370)	[	.037]	ND		(390)	[	.039]	ND		(380)	[	.038]	ND		(390)	[	.039]
Hexachloroethane	ND		(370)	[	.037]	ND		(390)	[	.039]	ND		(380)	[	.038]	ND		(390)	[	.039]
Indeno(1,2,3-cd)pyrene	52	J	(370)	[	.037]	ND		(390)	[	.039]	ND		(380)	[	.038]	ND		(390)	[	.039]
Isophorone	ND		(370)	[	.037]	ND		(390)	[	.039]	ND		(380)	[	.038]	ND		(390)	[	.039]
Methyl methanesulfonate	ND		(370)	[	.037]	ND		(390)	[	.039]	ND		(380)	[	.038]	ND		(390)	[	.039]
N-Nitroso-di-n-butylamine	ND		(370)	[	.037]	ND		(390)	[	.039]	ND		(380)	[	.038]	ND		(390)	[	.039]
N-Nitrosodimethylamine	ND		(370)	[	.037]	ND		(390)	[	.039]	ND		(380)	[	.038]	ND		(390)	[	.039]
N-Nitrosodiphenylamine	ND		(370)	[	.037]	ND		(390)	[	.039]	ND		(380)	[	.038]	ND		(390)	[	.039]
N-Nitrosodipropylamine	ND		(370)	[	.037]	ND		(390)	[	.039]	ND		(380)	[	.038]	ND		(390)	[	.039]

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TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)																
	NONE 11 CAN97-11-01 0 - 2				NONE 11 CAN97-11-02 4 - 6				NONE 11 CAN97-11-03 9 - 11				NONE 11 CAN97-11-04 14 - 16			
N-Nitrosopiperidine	ND	(370)	[	.037]	ND	(390)	[	.039]	ND	(380)	[	.038]	ND	(390)	[	.039]
Naphthalene	13 J	(370)	[	.037]	ND	(390)	[	.039]	ND	(380)	[	.038]	ND	(390)	[	.039]
Nitrobenzene	ND	(370)	[	.037]	ND	(390)	[	.039]	ND	(380)	[	.038]	ND	(390)	[	.039]
Pentachlorobenzene	ND	(370)	[	.037]	ND	(390)	[	.039]	ND	(380)	[	.038]	ND	(390)	[	.039]
Pentachloronitrobenzene	ND	(370)	[	.037]	ND	(390)	[	.039]	ND	(380)	[	.038]	ND	(390)	[	.039]
Pentachlorophenol	ND	(1900)	[	.037]	ND	(2000)	[	.039]	ND	(1900)	[	.038]	ND	(1900)	[	.039]
Phenacetin	ND	(370)	[	.037]	ND	(390)	[	.039]	ND	(380)	[	.038]	ND	(390)	[	.039]
Phenanthrene	32 J	(370)	[	.037]	ND	(390)	[	.039]	ND	(380)	[	.038]	ND	(390)	[	.039]
Phenol	ND	(370)	[	.037]	ND	(390)	[	.039]	ND	(380)	[	.038]	ND	(390)	[	.039]
Pronamide	ND	(370)	[	.037]	ND	(390)	[	.039]	ND	(380)	[	.038]	ND	(390)	[	.039]
Pyrene	79 J	(370)	[	.037]	ND	(390)	[	.039]	ND	(380)	[	.038]	ND	(390)	[	.039]
Pyridine	ND	(370)	[	.037]	ND	(390)	[	.039]	ND	(380)	[	.038]	ND	(390)	[	.039]
Unknown	190	(0)	[	.037]	NA				NA				230	(0)	[	.039]
Unknown aldehyde	190	(0)	[	.037]	NA				NA				NA			
Unknown alkane	450	(0)	[	.037]	NA				NA				NA			
Unknown carboxylic acid	860	(0)	[	.037]	NA				NA				NA			
bis(2-Chloroethoxy)methane	ND	(370)	[	.037]	ND	(390)	[	.039]	ND	(380)	[	.038]	ND	(390)	[	.039]
bis(2-Chloroethyl)ether	ND	(370)	[	.037]	ND	(390)	[	.039]	ND	(380)	[	.038]	ND	(390)	[	.039]
bis(2-Chloroisopropyl)ether	ND	(370)	[	.037]	ND	(390)	[	.039]	ND	(380)	[	.038]	ND	(390)	[	.039]
bis(2-Ethylhexyl)phthalate	230 JB	(370)	[	.037]	530 BQ	(390)	[	.039]	150 JB	(380)	[	.038]	180 JB	(390)	[	.039]
p-Chloroaniline	ND	(370)	[	.037]	ND	(390)	[	.039]	ND	(380)	[	.038]	ND	(390)	[	.039]
p-Dimethylaminoazobenzene	ND	(370)	[	.037]	ND	(390)	[	.039]	ND	(380)	[	.038]	ND	(390)	[	.039]

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)												
	NONE 11 CAN97-11-05 19 - 21			NONE 11 CAN97-11-06 24 - 26			NONE 11 CAN97-11-07 29 - 31			NONE 11 CAN97-11-08 34 - 36		
EPA 418.1 - Total Recoverable Petroleum Hydrocarbons (mg/kg)												
Hydrocarbons	ND	(29)	[5.747]	ND	(28)	[5.618]	28 @	(27)	[5.429]	ND	(28)	[5.618]
SW8080 - Organochlorine Pesticides and PCBs (ug/kg)												
4,4'-DDD	ND	(0.38)	[38.373]	ND	(0.37)	[37.341]	0.8 @	(0.36)	[36.153]	ND	(0.37)	[37.216]
4,4'-DDE	ND	(0.38)	[38.373]	ND	(0.37)	[37.341]	0.51 @	(0.36)	[36.153]	ND	(0.37)	[37.216]
4,4'-DDT	ND	(0.77)	[38.373]	ND	(0.75)	[37.341]	0.92 @	(0.72)	[36.153]	0.69 J	(0.74)	[37.216]
Aldrin	ND	(0.38)	[38.373]	ND	(0.37)	[37.341]	ND	(0.36)	[36.153]	ND	(0.37)	[37.216]
Chlordane	ND	(1.9)	[38.373]	ND	(1.9)	[37.341]	ND	(1.8)	[36.153]	ND	(1.9)	[37.216]
Dieldrin	ND	(0.38)	[38.373]	ND	(0.37)	[37.341]	ND	(0.36)	[36.153]	ND	(0.37)	[37.216]
Endosulfan I	ND	(0.38)	[38.373]	ND	(0.37)	[37.341]	ND	(0.36)	[36.153]	ND	(0.37)	[37.216]
Endosulfan II	ND	(1.2)	[38.373]	ND	(1.1)	[37.341]	ND	(1.1)	[36.153]	ND	(1.1)	[37.216]
Endosulfan Sulfate	ND	(1.9)	[38.373]	ND	(1.9)	[37.341]	ND	(1.8)	[36.153]	ND	(1.9)	[37.216]
Endrin	ND	(0.38)	[38.373]	ND	(0.37)	[37.341]	ND	(0.36)	[36.153]	ND	(0.37)	[37.216]
Endrin Aldehyde	ND	(0.77)	[38.373]	ND	(0.75)	[37.341]	ND	(0.72)	[36.153]	ND	(0.74)	[37.216]
Endrin Ketone	ND	(1.9)	[38.373]	ND	(1.9)	[37.341]	ND	(1.8)	[36.153]	ND	(1.9)	[37.216]
Heptachlor	0.3 J	(0.38)	[38.373]	ND	(0.37)	[37.341]	0.26 J	(0.36)	[36.153]	ND	(0.37)	[37.216]
Heptachlor epoxide	ND	(0.38)	[38.373]	ND	(0.37)	[37.341]	ND	(0.36)	[36.153]	ND	(0.37)	[37.216]
Methoxychlor	ND	(1.9)	[38.373]	ND	(1.9)	[37.341]	ND	(1.8)	[36.153]	ND	(1.9)	[37.216]
PCB-1016	ND	(3.8)	[38.373]	ND	(3.7)	[37.341]	ND	(3.6)	[36.153]	ND	(3.7)	[37.216]
PCB-1221	ND	(7.7)	[38.373]	ND	(7.5)	[37.341]	ND	(7.2)	[36.153]	ND	(7.4)	[37.216]
PCB-1232	ND	(7.7)	[38.373]	ND	(7.5)	[37.341]	ND	(7.2)	[36.153]	ND	(7.4)	[37.216]
PCB-1242	ND	(3.8)	[38.373]	ND	(3.7)	[37.341]	ND	(3.6)	[36.153]	ND	(3.7)	[37.216]
PCB-1248	ND	(3.8)	[38.373]	ND	(3.7)	[37.341]	ND	(3.6)	[36.153]	ND	(3.7)	[37.216]
PCB-1254	ND	(7.7)	[38.373]	ND	(7.5)	[37.341]	ND	(7.2)	[36.153]	ND	(7.4)	[37.216]
PCB-1260	ND	(7.7)	[38.373]	ND	(7.5)	[37.341]	ND	(7.2)	[36.153]	ND	(7.4)	[37.216]
Toxaphene	ND	(19)	[38.373]	ND	(19)	[37.341]	ND	(18)	[36.153]	ND	(19)	[37.216]
alpha-BHC	ND	(0.38)	[38.373]	ND	(0.37)	[37.341]	ND	(0.36)	[36.153]	ND	(0.37)	[37.216]
beta-BHC	ND	(0.38)	[38.373]	ND	(0.37)	[37.341]	0.2 J	(0.36)	[36.153]	0.15 J	(0.37)	[37.216]
delta-BHC	ND	(0.38)	[38.373]	ND	(0.37)	[37.341]	ND	(0.36)	[36.153]	ND	(0.37)	[37.216]

Compiled: 8 Feb 1994 () = Reporting Limit [] = Factor - = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID	LOCATION ID	SAMPLE ID	BEG. DEPTH - END DEPTH (FT.)										
	NONE	11	CAN97-11-05	19 - 21			NONE	11	CAN97-11-06	24 - 26			NONE	11	CAN97-11-07	29 - 31			NONE	11	CAN97-11-08	34 - 36		
gamma-BHC	ND	(0.38)	[38.373]	ND	(0.37)	[37.341]	ND	(0.36)	[36.153]	ND	(0.37)	[37.216]
SW8240 - Volatile Organics (ug/kg)												
1,1,1-Trichloroethane	ND	(5.8)	[1.152]	ND	(5.6)	[1.121]	ND	(5.4)	[1.086]	ND	(5.6)	[1.117]
1,1,2,2-Tetrachloroethane	ND	(5.8)	[1.152]	ND	(5.6)	[1.121]	ND	(5.4)	[1.086]	ND	(5.6)	[1.117]
1,1,2-Trichloroethane	ND	(5.8)	[1.152]	ND	(5.6)	[1.121]	ND	(5.4)	[1.086]	ND	(5.6)	[1.117]
1,1-Dichloroethane	ND	(5.8)	[1.152]	ND	(5.6)	[1.121]	ND	(5.4)	[1.086]	ND	(5.6)	[1.117]
1,1-Dichloroethene	ND	(5.8)	[1.152]	ND	(5.6)	[1.121]	ND	(5.4)	[1.086]	ND	(5.6)	[1.117]
1,2,3-Trichloropropane	ND	(5.8)	[1.152]	ND	(5.6)	[1.121]	ND	(5.4)	[1.086]	ND	(5.6)	[1.117]
1,2-Dichloroethane	ND	(5.8)	[1.152]	ND	(5.6)	[1.121]	ND	(5.4)	[1.086]	ND	(5.6)	[1.117]
1,2-Dichloropropane	ND	(5.8)	[1.152]	ND	(5.6)	[1.121]	ND	(5.4)	[1.086]	ND	(5.6)	[1.117]
2-Chloroethyl vinyl ether	ND	(12)	[1.152]	ND	(11)	[1.121]	ND	(11)	[1.086]	ND	(11)	[1.117]
2-Hexanone	ND	(58)	[1.152]	ND	(56)	[1.121]	ND	(54)	[1.086]	ND	(56)	[1.117]
4-Methyl-2-pentanone(MIBK)	ND	(58)	[1.152]	ND	(56)	[1.121]	ND	(54)	[1.086]	ND	(56)	[1.117]
Acetone	ND	(120)	[1.152]	ND	(110)	[1.121]	ND	(110)	[1.086]	ND	(110)	[1.117]
Acrolein	ND	(86)	[1.152]	ND	(84)	[1.121]	ND	(81)	[1.086]	ND	(84)	[1.117]
Acrylonitrile	ND	(58)	[1.152]	ND	(56)	[1.121]	ND	(54)	[1.086]	ND	(56)	[1.117]
Benzene	ND	(5.8)	[1.152]	ND	(5.6)	[1.121]	ND	(5.4)	[1.086]	ND	(5.6)	[1.117]
Bromodichloromethane	ND	(5.8)	[1.152]	ND	(5.6)	[1.121]	ND	(5.4)	[1.086]	ND	(5.6)	[1.117]
Bromomethane	ND	(12)	[1.152]	ND	(11)	[1.121]	ND	(11)	[1.086]	ND	(11)	[1.117]
Carbon disulfide	ND	(5.8)	[1.152]	ND	(5.6)	[1.121]	ND	(5.4)	[1.086]	ND	(5.6)	[1.117]
Carbon tetrachloride	ND	(5.8)	[1.152]	ND	(5.6)	[1.121]	ND	(5.4)	[1.086]	ND	(5.6)	[1.117]
Chlorobenzene	ND	(5.8)	[1.152]	ND	(5.6)	[1.121]	ND	(5.4)	[1.086]	ND	(5.6)	[1.117]
Chloroethane	ND	(12)	[1.152]	ND	(11)	[1.121]	ND	(11)	[1.086]	ND	(11)	[1.117]
Chloroform	ND	(5.8)	[1.152]	ND	(5.6)	[1.121]	ND	(5.4)	[1.086]	ND	(5.6)	[1.117]
Chloromethane	ND	(12)	[1.152]	ND	(11)	[1.121]	ND	(11)	[1.086]	ND	(11)	[1.117]
Dibromochloromethane	ND	(5.8)	[1.152]	ND	(5.6)	[1.121]	ND	(5.4)	[1.086]	ND	(5.6)	[1.117]
Dibromomethane	ND	(5.8)	[1.152]	ND	(5.6)	[1.121]	ND	(5.4)	[1.086]	ND	(5.6)	[1.117]
Dichlorodifluoromethane	ND	(23)	[1.152]	ND	(22)	[1.121]	ND	(22)	[1.086]	ND	(22)	[1.117]
Ethyl acetate	18	()	[1.152]	14	()	[1.121]	NA			29	()	[1.117]

Compiled: 8 February 1994 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 11 CAN97-11-05 19 - 21			NONE 11 CAN97-11-06 24 - 26			NONE 11 CAN97-11-07 29 - 31			NONE 11 CAN97-11-08 34 - 36		
Ethyl benzene	ND	(5.8)	[1.152]	ND	(5.6)	[1.121]	ND	(5.4)	[1.086]	ND	(5.6)	[1.117]
Ethyl methacrylate	ND	(17)	[1.152]	ND	(17)	[1.121]	ND	(16)	[1.086]	ND	(17)	[1.117]
Iodomethane	ND	(5.8)	[1.152]	ND	(5.6)	[1.121]	ND	(5.4)	[1.086]	ND	(5.6)	[1.117]
Methyl acetate	NA			NA			NA			9.5	()	[1.117]
Methyl ethyl ketone	ND	(120)	[1.152]	6.3 J	(110)	[1.121]	ND	(110)	[1.086]	ND	(110)	[1.117]
Methylene chloride	ND	(5.8)	[1.152]	ND	(5.6)	[1.121]	ND	(5.4)	[1.086]	ND	(5.6)	[1.117]
Styrene	ND	(5.8)	[1.152]	ND	(5.6)	[1.121]	ND	(5.4)	[1.086]	ND	(5.6)	[1.117]
Tetrachloroethene	ND	(5.8)	[1.152]	ND	(5.6)	[1.121]	ND	(5.4)	[1.086]	ND	(5.6)	[1.117]
Toluene	1 J	(5.8)	[1.152]	0.97 J	(5.6)	[1.121]	1.1 J	(5.4)	[1.086]	5.9 @	(5.6)	[1.117]
Tribromomethane(Bromoform)	ND	(5.8)	[1.152]	ND	(5.6)	[1.121]	ND	(5.4)	[1.086]	ND	(5.6)	[1.117]
Trichloroethene	ND	(5.8)	[1.152]	ND	(5.6)	[1.121]	ND	(5.4)	[1.086]	ND	(5.6)	[1.117]
Trichlorofluoromethane	ND	(12)	[1.152]	ND	(11)	[1.121]	ND	(11)	[1.086]	ND	(11)	[1.117]
Unknown hydrocarbon	5.9	()	[1.152]	5.9	()	[1.121]	NA			NA		
Vinyl acetate	ND	(5.8)	[1.152]	ND	(5.6)	[1.121]	ND	(5.4)	[1.086]	ND	(5.6)	[1.117]
Vinyl chloride	ND	(12)	[1.152]	ND	(11)	[1.121]	ND	(11)	[1.086]	ND	(11)	[1.117]
Xylenes	ND	(5.8)	[1.152]	ND	(5.6)	[1.121]	ND	(5.4)	[1.086]	ND	(5.6)	[1.117]
cis-1,3-Dichloropropene	ND	(5.8)	[1.152]	ND	(5.6)	[1.121]	ND	(5.4)	[1.086]	ND	(5.6)	[1.117]
trans-1,2-Dichloroethene	ND	(5.8)	[1.152]	ND	(5.6)	[1.121]	ND	(5.4)	[1.086]	ND	(5.6)	[1.117]
trans-1,3-Dichloropropene	ND	(5.8)	[1.152]	ND	(5.6)	[1.121]	ND	(5.4)	[1.086]	ND	(5.6)	[1.117]
trans-1,4-Dichloro-2-butene	ND	(12)	[1.152]	ND	(11)	[1.121]	ND	(11)	[1.086]	ND	(11)	[1.117]
SW8270 - Semivolatile Organics (ug/kg)												
1,2,4,5-Tetrachlorobenzene	ND	(380)	[.038]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(370)	[.037]
1,2,4-Trichlorobenzene	ND	(380)	[.038]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(370)	[.037]
1,2-Dichlorobenzene	ND	(380)	[.038]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(370)	[.037]
1,2-Diphenylhydrazine	ND	(380)	[.038]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(370)	[.037]
1,3-Dichlorobenzene	ND	(380)	[.038]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(370)	[.037]
1,4-Dichlorobenzene	ND	(380)	[.038]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(370)	[.037]
1-Chloronaphthalene	ND	(380)	[.038]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(370)	[.037]
1-Naphthylamine	ND	(380)	[.038]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(370)	[.037]

Compiled: 8 Fe y 1994 () = Reporting Limit [] = Factor = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)														
	NONE 11 CAN97-11-05 19 - 21				NONE 11 CAN97-11-06 24 - 26				NONE 11 CAN97-11-07 29 - 31				NONE 11 CAN97-11-08 34 - 36		
2,3,4,6-Tetrachlorophenol	ND	(770)	[	.038]	ND	(750)	[	.037]	ND	(720)	[	.036]	ND	(740)	[.037]
2,4,5-Trichlorophenol	ND	(380)	[	.038]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(370)	[.037]
2,4,6-Trichlorophenol	ND	(380)	[	.038]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(370)	[.037]
2,4-Dichlorophenol	ND	(380)	[	.038]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(370)	[.037]
2,4-Dimethylphenol	ND	(380)	[	.038]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(370)	[.037]
2,4-Dinitrophenol	ND	(1900)	[	.038]	ND	(1900)	[	.037]	ND	(1800)	[	.036]	ND	(1900)	[.037]
2,4-Dinitrotoluene	ND	(380)	[	.038]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(370)	[.037]
2,6-Dichlorophenol	ND	(380)	[	.038]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(370)	[.037]
2,6-Dinitrotoluene	ND	(380)	[	.038]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(370)	[.037]
2-Chloronaphthalene	ND	(380)	[	.038]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(370)	[.037]
2-Chlorophenol	ND	(380)	[	.038]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(370)	[.037]
2-Methylnaphthalene	ND	(380)	[	.038]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(370)	[.037]
2-Methylphenol(o-cresol)	ND	(380)	[	.038]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(370)	[.037]
2-Naphthylamine	ND	(380)	[	.038]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(370)	[.037]
2-Nitroaniline	ND	(1900)	[	.038]	ND	(1900)	[	.037]	ND	(1800)	[	.036]	ND	(1900)	[.037]
2-Nitrophenol	ND	(380)	[	.038]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(370)	[.037]
2-Picoline	ND	(380)	[	.038]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(370)	[.037]
3,3'-Dichlorobenzidine	ND	(770)	[	.038]	ND	(750)	[	.037]	ND	(720)	[	.036]	ND	(740)	[.037]
3-Methylcholanthrene	ND	(380)	[	.038]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(370)	[.037]
3-Nitroaniline	ND	(1900)	[	.038]	ND	(1900)	[	.037]	ND	(1800)	[	.036]	ND	(1900)	[.037]
4,6-Dinitro-2-methylphenol	ND	(1900)	[	.038]	ND	(1900)	[	.037]	ND	(1800)	[	.036]	ND	(1900)	[.037]
4-Aminobiphenyl	ND	(380)	[	.038]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(370)	[.037]
4-Bromophenyl phenyl ether	ND	(380)	[	.038]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(370)	[.037]
4-Chloro-3-methylphenol	ND	(380)	[	.038]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(370)	[.037]
4-Chlorophenyl phenyl ether	ND	(380)	[	.038]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(370)	[.037]
4-Methylphenol(p-cresol)	ND	(380)	[	.038]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(370)	[.037]
4-Nitroaniline	ND	(1900)	[	.038]	ND	(1900)	[	.037]	ND	(1800)	[	.036]	ND	(1900)	[.037]
4-Nitrophenol	ND	(1900)	[	.038]	ND	(1900)	[	.037]	ND	(1800)	[	.036]	ND	(1900)	[.037]
7,12-Dimethylbenz(a)anthracene	ND	(960)	[	.038]	ND	(930)	[	.037]	ND	(900)	[	.036]	ND	(930)	[.037]

Compiled: 8 February 1994

() = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE 81 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

	SITE ID											
	LOCATION ID											
	SAMPLE ID											
	BEG. DEPTH - END DEPTH (FT.)											
PARAMETER	NONE 11 CAN97-11-05 19 - 21			NONE 11 CAN97-11-06 24 - 26			NONE 11 CAN97-11-07 29 - 31			NONE 11 CAN97-11-08 34 - 36		
Acenaphthene	ND	(380)	[.038]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(370)	[.037]
Acenaphthylene	ND	(380)	[.038]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(370)	[.037]
Acetophenone	ND	(380)	[.038]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(370)	[.037]
Aniline	ND	(380)	[.038]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(370)	[.037]
Anthracene	ND	(380)	[.038]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(370)	[.037]
Benzidine	ND	(380)	[.038]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(370)	[.037]
Benzo(a)anthracene	ND	(380)	[.038]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(370)	[.037]
Benzo(a)pyrene	ND	(380)	[.038]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(370)	[.037]
Benzo(b)fluoranthene	ND	(380)	[.038]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(370)	[.037]
Benzo(g,h,i)perylene	ND	(380)	[.038]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(370)	[.037]
Benzo(k)fluoranthene	ND	(380)	[.038]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(370)	[.037]
Benzoic acid	ND	(1900)	[.038]	ND	(1900)	[.037]	ND	(1800)	[.036]	ND	(1900)	[.037]
Benzyl alcohol	ND	(380)	[.038]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(370)	[.037]
Butylbenzylphthalate	ND	(380)	[.038]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(370)	[.037]
Chrysene	ND	(380)	[.038]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(370)	[.037]
Di-n-octylphthalate	ND	(380)	[.038]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(370)	[.037]
Dibenz(a,h)anthracene	ND	(380)	[.038]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(370)	[.037]
Dibenz(a,j)acridine	ND	(380)	[.038]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(370)	[.037]
Dibenzofuran	ND	(380)	[.038]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(370)	[.037]
Dibutylphthalate	ND	(380)	[.038]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(370)	[.037]
Diethylphthalate	ND	(380)	[.038]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(370)	[.037]
Dimethylphenethylamine	ND	(380)	[.038]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(370)	[.037]
Dimethylphthalate	ND	(380)	[.038]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(370)	[.037]
Diphenylamine	ND	(380)	[.038]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(370)	[.037]
Ethyl methanesulfonate	ND	(380)	[.038]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(370)	[.037]
Fluoranthene	ND	(380)	[.038]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(370)	[.037]
Fluorene	ND	(380)	[.038]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(370)	[.037]
Hexachlorobenzene	ND	(380)	[.038]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(370)	[.037]
Hexachlorobutadiene	ND	(380)	[.038]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(370)	[.037]

Compiled: 8 Feb[illegible]y 1994 () = Reporting Limit [] = Factor - Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID	LOCATION ID	SAMPLE ID	BEG. DEPTH - END DEPTH (FT.)												
	NONE	11	CAN97-11-05	19 - 21			NONE	11	CAN97-11-06	24 - 26			NONE	11	CAN97-11-07	29 - 31			NONE	11	CAN97-11-08	34 - 36		
Hexachlorocyclopentadiene	ND	(380)	[	.038]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(370)	[	.037]
Hexachloroethane	ND	(380)	[	.038]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(370)	[	.037]
Indeno(1,2,3-cd)pyrene	ND	(380)	[	.038]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(370)	[	.037]
Isophorone	ND	(380)	[	.038]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(370)	[	.037]
Methyl methanesulfonate	ND	(380)	[	.038]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(370)	[	.037]
N-Nitroso-di-n-butylamine	ND	(380)	[	.038]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(370)	[	.037]
N-Nitrosodimethylamine	ND	(380)	[	.038]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(370)	[	.037]
N-Nitrosodiphenylamine	ND	(380)	[	.038]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(370)	[	.037]
N-Nitrosodipropylamine	ND	(380)	[	.038]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(370)	[	.037]
N-Nitrosopiperidine	ND	(380)	[	.038]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(370)	[	.037]
Naphthalene	ND	(380)	[	.038]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(370)	[	.037]
Nitrobenzene	ND	(380)	[	.038]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(370)	[	.037]
Pentachlorobenzene	ND	(380)	[	.038]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(370)	[	.037]
Pentachloronitrobenzene	ND	(380)	[	.038]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(370)	[	.037]
Pentachlorophenol	ND	(1900)	[	.038]	ND	(1900)	[	.037]	ND	(1800)	[	.036]	ND	(1900)	[	.037]
Phenacetin	ND	(380)	[	.038]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(370)	[	.037]
Phenanthrene	ND	(380)	[	.038]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(370)	[	.037]
Phenol	ND	(380)	[	.038]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(370)	[	.037]
Pronamide	ND	(380)	[	.038]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(370)	[	.037]
Pyrene	ND	(380)	[	.038]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(370)	[	.037]
Pyridine	ND	(380)	[	.038]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(370)	[	.037]
Unknown	150	(0)	[	.038]	NA				NA				NA			
bis(2-Chloroethoxy)methane	ND	(380)	[	.038]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(370)	[	.037]
bis(2-Chloroethyl)ether	ND	(380)	[	.038]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(370)	[	.037]
bis(2-Chloroisopropyl)ether	ND	(380)	[	.038]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(370)	[	.037]
bis(2-Ethylhexyl)phthalate	180 JB	(380)	[	.038]	ND	(370)	[	.037]	170 JB	(360)	[	.036]	43 JB	(370)	[	.037]
p-Chloroaniline	ND	(380)	[	.038]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(370)	[	.037]
p-Dimethylaminoazobenzene	ND	(380)	[	.038]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(370)	[	.037]

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	NONE 11 CAN97-11-09 39 - 41			NONE 11 CAN97-11-99 Dup of CAN97-11-09 39 - 41			NONE 11 CAN97-11-10 46 - 48			NONE 11 CAN97-11-11 51 - 53		
EPA 418.1 - Total Recoverable Petroleum Hydrocarbons (mg/kg)												
Hydrocarbons	ND	(27)	[5.308]	ND	(27)	[5.319]	ND	(28)	[5.682]	ND	(27)	[5.348]
SW8015 - Total Petroleum Hydrocarbons (%recvry)												
Benzene (2)	ND	(31)	[104.000]	ND	(32)	[105.000]	NA			NA		
Diesel (2)	7600 GBQ	(5300)	[106.383]	6400 GBQ	(5300)	[106.383]	NA			NA		
Ethylbenzene (2)	ND	(31)	[104.000]	ND	(32)	[105.000]	NA			NA		
Gasoline (2)	ND N/A	(5200)	[104.000]	ND	(5200)	[105.000]	NA			NA		
Jet fuel (2)	ND	(11000)	[106.383]	ND	(11000)	[106.383]	NA			NA		
Kerosene (2)	ND	(11000)	[106.383]	ND	(11000)	[106.383]	NA			NA		
Toluene (2)	ND	(31)	[104.000]	ND	(32)	[105.000]	NA			NA		
Xylenes (total) (2)	ND	(52)	[104.000]	ND	(52)	[105.000]	NA			NA		
SW8080 - Organochlorine Pesticides and PCBs (ug/kg)												
4,4'-DDD	ND	(0.35)	[35.386]	0.74 Q	(0.35)	[35.423]	0.8 Q	(0.38)	[37.980]	ND	(0.36)	[35.625]
4,4'-DDE	ND	(0.35)	[35.386]	ND	(0.35)	[35.423]	ND	(0.38)	[37.980]	ND	(0.36)	[35.625]
4,4'-DDT	ND	(0.71)	[35.386]	ND	(0.71)	[35.423]	1 Q	(0.76)	[37.980]	0.82 Q	(0.71)	[35.625]
Aldrin	ND	(0.35)	[35.386]	ND	(0.35)	[35.423]	ND	(0.38)	[37.980]	ND	(0.36)	[35.625]
Chlordane	ND	(1.8)	[35.386]	ND	(1.8)	[35.423]	ND	(1.9)	[37.980]	ND	(1.8)	[35.625]
Dieldrin	ND	(0.35)	[35.386]	ND	(0.35)	[35.423]	ND	(0.38)	[37.980]	ND	(0.36)	[35.625]
Endosulfan I	ND	(0.35)	[35.386]	ND	(0.35)	[35.423]	ND	(0.38)	[37.980]	ND	(0.36)	[35.625]
Endosulfan II	ND	(1.1)	[35.386]	ND	(1.1)	[35.423]	ND	(1.1)	[37.980]	ND	(1.1)	[35.625]
Endosulfan Sulfate	ND	(1.8)	[35.386]	ND	(1.8)	[35.423]	ND	(1.9)	[37.980]	ND	(1.8)	[35.625]
Endrin	ND	(0.35)	[35.386]	ND	(0.35)	[35.423]	0.53 Q	(0.38)	[37.980]	ND	(0.36)	[35.625]
Endrin Aldehyde	ND	(0.71)	[35.386]	ND	(0.71)	[35.423]	ND	(0.76)	[37.980]	ND	(0.71)	[35.625]
Endrin Ketone	ND	(1.8)	[35.386]	ND	(1.8)	[35.423]	ND	(1.9)	[37.980]	ND	(1.8)	[35.625]
Heptachlor	ND	(0.35)	[35.386]	ND	(0.35)	[35.423]	0.31 J	(0.38)	[37.980]	0.31 J	(0.36)	[35.625]
Heptachlor epoxide	ND	(0.35)	[35.386]	ND	(0.35)	[35.423]	ND	(0.38)	[37.980]	ND	(0.36)	[35.625]
Methoxychlor	ND	(1.8)	[35.386]	ND	(1.8)	[35.423]	ND	(1.9)	[37.980]	ND	(1.8)	[35.625]
PCB-1016	ND	(3.5)	[35.386]	ND	(3.5)	[35.423]	ND	(3.8)	[37.980]	ND	(3.6)	[35.625]
PCB-1221	ND	(7.1)	[35.386]	ND	(7.1)	[35.423]	ND	(7.6)	[37.980]	ND	(7.1)	[35.625]

Compiled: 8 Fe y 1994 () = Reporting Limit [] = Factor = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)														
	NONE 11 CAN97-11-09 39 - 41			NONE 11 CAN97-11-99 Dup of CAN97-11-09 39 - 41			NONE 11 CAN97-11-10 46 - 48			NONE 11 CAN97-11-11 51 - 53		
PCB-1232	ND	(7.1)	[35.386]	ND	(7.1)	[35.423]	ND	(7.6)	[37.980]	ND	(7.1)	[35.625]
PCB-1242	ND	(3.5)	[35.386]	ND	(3.5)	[35.423]	ND	(3.8)	[37.980]	ND	(3.6)	[35.625]
PCB-1248	ND	(3.5)	[35.386]	ND	(3.5)	[35.423]	ND	(3.8)	[37.980]	ND	(3.6)	[35.625]
PCB-1254	ND	(7.1)	[35.386]	ND	(7.1)	[35.423]	ND	(7.6)	[37.980]	ND	(7.1)	[35.625]
PCB-1260	ND	(7.1)	[35.386]	ND	(7.1)	[35.423]	ND	(7.6)	[37.980]	ND	(7.1)	[35.625]
Toxaphene	ND	(18)	[35.386]	ND	(18)	[35.423]	ND	(19)	[37.980]	ND	(18)	[35.625]
alpha-BHC	ND	(0.35)	[35.386]	ND	(0.35)	[35.423]	ND	(0.38)	[37.980]	ND	(0.36)	[35.625]
beta-BHC	ND	(0.35)	[35.386]	ND	(0.35)	[35.423]	ND	(0.38)	[37.980]	ND	(0.36)	[35.625]
delta-BHC	ND	(0.35)	[35.386]	ND	(0.35)	[35.423]	ND	(0.38)	[37.980]	ND	(0.36)	[35.625]
gamma-BHC	ND	(0.35)	[35.386]	ND	(0.35)	[35.423]	ND	(0.38)	[37.980]	ND	(0.36)	[35.625]
SW8150 - Chlorinated Herbicides (ug/kg)												
2,4,5-T	ND	(7.1)	[35.323]	ND	(7.1)	[35.398]	NA			NA		
2,4,5-TP (Silvex)	ND	(6)	[35.323]	ND	(6)	[35.398]	NA			NA		
2,4-D	ND	(42)	[35.323]	ND	(42)	[35.398]	NA			NA		
2,4-DB	ND	(32)	[35.323]	ND	(32)	[35.398]	NA			NA		
Dalapon	ND	(200)	[35.323]	ND	(210)	[35.398]	NA			NA		
Dicamba	ND	(9.5)	[35.323]	ND	(9.6)	[35.398]	NA			NA		
Dichloroprop	3.3 J	(23)	[35.323]	4.2 J	(23)	[35.398]	NA			NA		
Dinoseb	ND	(5.3)	[35.323]	ND	(5.3)	[35.398]	NA			NA		
MCPA	ND	(8800)	[35.323]	ND	(8800)	[35.398]	NA			NA		
MCPP	ND	(6800)	[35.323]	ND	(6800)	[35.398]	NA			NA		
SW8240 - Volatile Organics (ug/kg)												
1,1,1-Trichloroethane	ND	(5.3)	[1.062]	ND	(5.3)	[1.064]	ND	(5.7)	[1.140]	ND	(5.3)	[1.069]
1,1,2,2-Tetrachloroethane	ND	(5.3)	[1.062]	ND	(5.3)	[1.064]	ND	(5.7)	[1.140]	ND	(5.3)	[1.069]
1,1,2-Trichloroethane	ND	(5.3)	[1.062]	ND	(5.3)	[1.064]	ND	(5.7)	[1.140]	ND	(5.3)	[1.069]
1,1-Dichloroethane	ND	(5.3)	[1.062]	ND	(5.3)	[1.064]	ND	(5.7)	[1.140]	ND	(5.3)	[1.069]
1,1-Dichloroethene	ND	(5.3)	[1.062]	ND	(5.3)	[1.064]	ND	(5.7)	[1.140]	ND	(5.3)	[1.069]
1,2,3-Trichloropropane	ND	(5.3)	[1.062]	ND	(5.3)	[1.064]	ND	(5.7)	[1.140]	ND	(5.3)	[1.069]
1,2-Dichloroethane	ND	(5.3)	[1.062]	ND	(5.3)	[1.064]	ND	(5.7)	[1.140]	ND	(5.3)	[1.069]

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 11 CAN97-11-09 39 - 41			NONE 11 CAN97-11-99 Dup of CAN97-11-09 39 - 41			NONE 11 CAN97-11-10 46 - 48			NONE 11 CAN97-11-11 51 - 53		
1,2-Dichloropropane	ND	(5.3)	[1.062]	ND	(5.3)	[1.064]	ND	(5.7)	[1.140]	ND	(5.3)	[1.069]
2-Chloroethyl vinyl ether	ND	(11)	[1.062]	ND	(11)	[1.064]	ND	(11)	[1.140]	ND	(11)	[1.069]
2-Hexanone	ND	(53)	[1.062]	ND	(53)	[1.064]	ND	(57)	[1.140]	ND	(53)	[1.069]
4-Methyl-2-pentanone(MIBK)	ND	(53)	[1.062]	ND	(53)	[1.064]	ND	(57)	[1.140]	ND	(53)	[1.069]
Acetone	ND	(110)	[1.062]	ND	(110)	[1.064]	ND	(110)	[1.140]	ND	(110)	[1.069]
Acrolein	ND	(80)	[1.062]	ND	(80)	[1.064]	ND	(86)	[1.140]	ND	(80)	[1.069]
Acrylonitrile	ND	(53)	[1.062]	ND	(53)	[1.064]	ND	(57)	[1.140]	ND	(53)	[1.069]
Benzene	ND	(5.3)	[1.062]	ND	(5.3)	[1.064]	ND	(5.7)	[1.140]	ND	(5.3)	[1.069]
Bromodichloromethane	ND	(5.3)	[1.062]	ND	(5.3)	[1.064]	ND	(5.7)	[1.140]	ND	(5.3)	[1.069]
Bromomethane	ND	(11)	[1.062]	ND	(11)	[1.064]	ND	(11)	[1.140]	ND	(11)	[1.069]
Carbon disulfide	ND	(5.3)	[1.062]	ND	(5.3)	[1.064]	ND	(5.7)	[1.140]	ND	(5.3)	[1.069]
Carbon tetrachloride	ND	(5.3)	[1.062]	ND	(5.3)	[1.064]	ND	(5.7)	[1.140]	ND	(5.3)	[1.069]
Chlorobenzene	ND	(5.3)	[1.062]	ND	(5.3)	[1.064]	ND	(5.7)	[1.140]	ND	(5.3)	[1.069]
Chloroethane	ND	(11)	[1.062]	ND	(11)	[1.064]	ND	(11)	[1.140]	ND	(11)	[1.069]
Chloroform	ND	(5.3)	[1.062]	ND	(5.3)	[1.064]	ND	(5.7)	[1.140]	ND	(5.3)	[1.069]
Chloromethane	ND	(11)	[1.062]	ND	(11)	[1.064]	ND	(11)	[1.140]	ND	(11)	[1.069]
Dibromochloromethane	ND	(5.3)	[1.062]	ND	(5.3)	[1.064]	ND	(5.7)	[1.140]	ND	(5.3)	[1.069]
Dibromomethane	ND	(5.3)	[1.062]	ND	(5.3)	[1.064]	ND	(5.7)	[1.140]	ND	(5.3)	[1.069]
Dichlorodifluoromethane	ND	(21)	[1.062]	ND	(21)	[1.064]	ND	(23)	[1.140]	ND	(21)	[1.069]
Ethyl acetate	21	()	[1.062]	38	()	[1.064]	48	()	[1.140]	11	()	[1.069]
Ethyl benzene	ND	(5.3)	[1.062]	ND	(5.3)	[1.064]	ND	(5.7)	[1.140]	ND	(5.3)	[1.069]
Ethyl methacrylate	ND	(16)	[1.062]	ND	(16)	[1.064]	ND	(17)	[1.140]	ND	(16)	[1.069]
Iodomethane	ND	(5.3)	[1.062]	ND	(5.3)	[1.064]	ND	(5.7)	[1.140]	ND	(5.3)	[1.069]
Methyl acetate	NA			8.1	()	[1.064]	NA			9.2	()	[1.069]
Methyl ethyl ketone	ND	(110)	[1.062]	ND	(110)	[1.064]	ND	(110)	[1.140]	ND	(110)	[1.069]
Methylene chloride	ND	(5.3)	[1.062]	ND	(5.3)	[1.064]	ND	(5.7)	[1.140]	ND	(5.3)	[1.069]
Styrene	ND	(5.3)	[1.062]	ND	(5.3)	[1.064]	ND	(5.7)	[1.140]	ND	(5.3)	[1.069]
Tetrachloroethene	ND	(5.3)	[1.062]	ND	(5.3)	[1.064]	ND	(5.7)	[1.140]	ND	(5.3)	[1.069]
Toluene	ND	(5.3)	[1.062]	1.6 J	(5.3)	[1.064]	ND @	(5.7)	[1.140]	0.98 J	(5.3)	[1.069]

Compiled: 8 Fe y 1994 () = Reporting Limit [] = Factor = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID	LOCATION ID	SAMPLE ID	BEG. DEPTH - END DEPTH (FT.)												
	NONE	11	CAN97-11-09	39 - 41			NONE	11	CAN97-11-99 Dup of CAN97-11-09	39 - 41			NONE	11	CAN97-11-10	46 - 48		
Tribromomethane(Bromoform)	ND	(5.3)	[1.062]				ND	(5.3)	[1.064]				ND	(5.7)	[1.140]			
Trichloroethene	ND	(5.3)	[1.062]				ND	(5.3)	[1.064]				ND	(5.7)	[1.140]			
Trichlorofluoromethane	ND	(11)	[1.062]				ND	(11)	[1.064]				ND	(11)	[1.140]			
Unknown hydrocarbon	NA						9.1	()	[1.064]				NA					
Vinyl acetate	ND	(5.3)	[1.062]				ND	(5.3)	[1.064]				ND	(5.7)	[1.140]			
Vinyl chloride	ND	(11)	[1.062]				ND	(11)	[1.064]				ND	(11)	[1.140]			
Xylenes	ND	(5.3)	[1.062]				ND	(5.3)	[1.064]				ND	(5.7)	[1.140]			
cis-1,3-Dichloropropene	ND	(5.3)	[1.062]				ND	(5.3)	[1.064]				ND	(5.7)	[1.140]			
trans-1,2-Dichloroethene	ND	(5.3)	[1.062]				ND	(5.3)	[1.064]				ND	(5.7)	[1.140]			
trans-1,3-Dichloropropene	ND	(5.3)	[1.062]				ND	(5.3)	[1.064]				ND	(5.7)	[1.140]			
trans-1,4-Dichloro-2-butene	ND	(11)	[1.062]				ND	(11)	[1.064]				ND	(11)	[1.140]			
SW8270 - Semivolatile Organics (ug/kg)																		
1,2,4,5-Tetrachlorobenzene	ND	(350)	[.035]				ND	(350)	[.036]				ND	(380)	[.038]			
1,2,4-Trichlorobenzene	ND	(350)	[.035]				ND	(350)	[.036]				ND	(380)	[.038]			
1,2-Dichlorobenzene	ND	(350)	[.035]				ND	(350)	[.036]				ND	(380)	[.038]			
1,2-Diphenylhydrazine	ND	(350)	[.035]				ND	(350)	[.036]				ND	(380)	[.038]			
1,3-Dichlorobenzene	ND	(350)	[.035]				ND	(350)	[.036]				ND	(380)	[.038]			
1,4-Dichlorobenzene	ND	(350)	[.035]				ND	(350)	[.036]				ND	(380)	[.038]			
1-Chloronaphthalene	ND	(350)	[.035]				ND	(350)	[.036]				ND	(380)	[.038]			
1-Naphthylamine	ND	(350)	[.035]				ND	(350)	[.036]				ND	(380)	[.038]			
2,3,4,6-Tetrachlorophenol	ND	(710)	[.035]				ND	(710)	[.036]				ND	(760)	[.038]			
2,4,5-Trichlorophenol	ND	(350)	[.035]				ND	(350)	[.036]				ND	(380)	[.038]			
2,4,6-Trichlorophenol	ND	(350)	[.035]				ND	(350)	[.036]				ND	(380)	[.038]			
2,4-Dichlorophenol	ND	(350)	[.035]				ND	(350)	[.036]				ND	(380)	[.038]			
2,4-Dimethylphenol	ND	(350)	[.035]				ND	(350)	[.036]				ND	(380)	[.038]			
2,4-Dinitrophenol	ND	(1800)	[.035]				ND	(1800)	[.036]				ND	(1900)	[.038]			
2,4-Dinitrotoluene	ND	(350)	[.035]				ND	(350)	[.036]				ND	(380)	[.038]			
2,6-Dichlorophenol	ND	(350)	[.035]				ND	(350)	[.036]				ND	(380)	[.038]			
2,6-Dinitrotoluene	ND	(350)	[.035]				ND	(350)	[.036]				ND	(380)	[.038]			

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)																
	NONE 11 CAN97-11-09 39 - 41				NONE 11 CAN97-11-99 Dup of CAN97-11-09 39 - 41				NONE 11 CAN97-11-10 46 - 48				NONE 11 CAN97-11-11 51 - 53			
2-Chloronaphthalene	ND	(350)	[	.035]	ND	(350)	[	.036]	ND	(380)	[	.038]	ND	(360)	[	.036]
2-Chlorophenol	ND	(350)	[	.035]	ND	(350)	[	.036]	ND	(380)	[	.038]	ND	(360)	[	.036]
2-Methylnaphthalene	ND	(350)	[	.035]	ND	(350)	[	.036]	ND	(380)	[	.038]	ND	(360)	[	.036]
2-Methylphenol(o-cresol)	ND	(350)	[	.035]	ND	(350)	[	.036]	ND	(380)	[	.038]	ND	(360)	[	.036]
2-Naphthylamine	ND	(350)	[	.035]	ND	(350)	[	.036]	ND	(380)	[	.038]	ND	(360)	[	.036]
2-Nitroaniline	ND	(1800)	[	.035]	ND	(1800)	[	.036]	ND	(1900)	[	.038]	ND	(1800)	[	.036]
2-Nitrophenol	ND	(350)	[	.035]	ND	(350)	[	.036]	ND	(380)	[	.038]	ND	(360)	[	.036]
2-Picoline	ND	(350)	[	.035]	ND	(350)	[	.036]	ND	(380)	[	.038]	ND	(360)	[	.036]
3,3'-Dichlorobenzidine	ND	(710)	[	.035]	ND	(710)	[	.036]	ND	(760)	[	.038]	ND	(710)	[	.036]
3-Methylcholanthrene	ND	(350)	[	.035]	ND	(350)	[	.036]	ND	(380)	[	.038]	ND	(360)	[	.036]
3-Nitroaniline	ND	(1800)	[	.035]	ND	(1800)	[	.036]	ND	(1900)	[	.038]	ND	(1800)	[	.036]
4,6-Dinitro-2-methylphenol	ND	(1800)	[	.035]	ND	(1800)	[	.036]	ND	(1900)	[	.038]	ND	(1800)	[	.036]
4-Aminobiphenyl	ND	(350)	[	.035]	ND	(350)	[	.036]	ND	(380)	[	.038]	ND	(360)	[	.036]
4-Bromophenyl phenyl ether	ND	(350)	[	.035]	ND	(350)	[	.036]	ND	(380)	[	.038]	ND	(360)	[	.036]
4-Chloro-3-methylphenol	ND	(350)	[	.035]	ND	(350)	[	.036]	ND	(380)	[	.038]	ND	(360)	[	.036]
4-Chlorophenyl phenyl ether	ND	(350)	[	.035]	ND	(350)	[	.036]	ND	(380)	[	.038]	ND	(360)	[	.036]
4-Methylphenol(p-cresol)	ND	(350)	[	.035]	ND	(350)	[	.036]	ND	(380)	[	.038]	ND	(360)	[	.036]
4-Nitroaniline	ND	(1800)	[	.035]	ND	(1800)	[	.036]	ND	(1900)	[	.038]	ND	(1800)	[	.036]
4-Nitrophenol	ND	(1800)	[	.035]	ND	(1800)	[	.036]	ND	(1900)	[	.038]	ND	(1800)	[	.036]
7,12-Dimethylbenz(a)anthracene	ND	(880)	[	.035]	ND	(890)	[	.036]	ND	(950)	[	.038]	ND	(890)	[	.036]
Acenaphthene	ND	(350)	[	.035]	ND	(350)	[	.036]	ND	(380)	[	.038]	ND	(360)	[	.036]
Acenaphthylene	ND	(350)	[	.035]	ND	(350)	[	.036]	ND	(380)	[	.038]	ND	(360)	[	.036]
Acetophenone	ND	(350)	[	.035]	ND	(350)	[	.036]	ND	(380)	[	.038]	ND	(360)	[	.036]
Aniline	ND	(350)	[	.035]	ND	(350)	[	.036]	ND	(380)	[	.038]	ND	(360)	[	.036]
Anthracene	ND	(350)	[	.035]	ND	(350)	[	.036]	ND	(380)	[	.038]	ND	(360)	[	.036]
Benzidine	ND	(350)	[	.035]	ND	(350)	[	.036]	ND	(380)	[	.038]	ND	(360)	[	.036]
Benzo(a)anthracene	ND	(350)	[	.035]	ND	(350)	[	.036]	ND	(380)	[	.038]	ND	(360)	[	.036]
Benzo(a)pyrene	ND	(350)	[	.035]	ND	(350)	[	.036]	ND	(380)	[	.038]	ND	(360)	[	.036]
Benzo(b)fluoranthene	ND	(350)	[	.035]	ND	(350)	[	.036]	ND	(380)	[	.038]	ND	(360)	[	.036]

Compiled: 8 Fe y 1994 () = Reporting Limit [] = Factor = Not Detected NA = Not Applicable

TABLE B1

RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 11 CAN97-11-09 39 - 41			NONE 11 CAN97-11-99 Dup of CAN97-11-09 39 - 41			NONE 11 CAN97-11-10 46 - 48			NONE 11 CAN97-11-11 51 - 53		
Benzo(g,h,i)perylene	ND	(350)	[.035]	ND	(350)	[.036]	ND	(380)	[.038]	ND	(360)	[.036]
Benzo(k)fluoranthene	ND	(350)	[.035]	ND	(350)	[.036]	ND	(380)	[.038]	ND	(360)	[.036]
Benzoic acid	ND	(1800)	[.035]	ND	(1800)	[.036]	ND	(1900)	[.038]	ND	(1800)	[.036]
Benzyl alcohol	ND	(350)	[.035]	ND	(350)	[.036]	ND	(380)	[.038]	ND	(360)	[.036]
Butylbenzylphthalate	ND	(350)	[.035]	ND	(350)	[.036]	ND	(380)	[.038]	ND	(360)	[.036]
Chrysene	ND	(350)	[.035]	ND	(350)	[.036]	ND	(380)	[.038]	ND	(360)	[.036]
Di-n-octylphthalate	ND	(350)	[.035]	ND	(350)	[.036]	ND	(380)	[.038]	ND	(360)	[.036]
Dibenz(a,h)anthracene	ND	(350)	[.035]	ND	(350)	[.036]	ND	(380)	[.038]	ND	(360)	[.036]
Dibenz(a,j)acridine	ND	(350)	[.035]	ND	(350)	[.036]	ND	(380)	[.038]	ND	(360)	[.036]
Dibenzofuran	ND	(350)	[.035]	ND	(350)	[.036]	ND	(380)	[.038]	ND	(360)	[.036]
Dibutylphthalate	ND	(350)	[.035]	ND	(350)	[.036]	ND	(380)	[.038]	ND	(360)	[.036]
Diethylphthalate	ND	(350)	[.035]	ND	(350)	[.036]	ND	(380)	[.038]	ND	(360)	[.036]
Dimethylphenethylamine	ND	(350)	[.035]	ND	(350)	[.036]	ND	(380)	[.038]	ND	(360)	[.036]
Dimethylphthalate	ND	(350)	[.035]	ND	(350)	[.036]	ND	(380)	[.038]	ND	(360)	[.036]
Diphenylamine	ND	(350)	[.035]	ND	(350)	[.036]	ND	(380)	[.038]	ND	(360)	[.036]
Ethyl methanesulfonate	ND	(350)	[.035]	ND	(350)	[.036]	ND	(380)	[.038]	ND	(360)	[.036]
Fluoranthene	ND	(350)	[.035]	ND	(350)	[.036]	ND	(380)	[.038]	ND	(360)	[.036]
Fluorene	ND	(350)	[.035]	ND	(350)	[.036]	ND	(380)	[.038]	ND	(360)	[.036]
Hexachlorobenzene	ND	(350)	[.035]	ND	(350)	[.036]	ND	(380)	[.038]	ND	(360)	[.036]
Hexachlorobutadiene	ND	(350)	[.035]	ND	(350)	[.036]	ND	(380)	[.038]	ND	(360)	[.036]
Hexachlorocyclopentadiene	ND	(350)	[.035]	ND	(350)	[.036]	ND	(380)	[.038]	ND	(360)	[.036]
Hexachloroethane	ND	(350)	[.035]	ND	(350)	[.036]	ND	(380)	[.038]	ND	(360)	[.036]
Indeno(1,2,3-cd)pyrene	ND	(350)	[.035]	ND	(350)	[.036]	ND	(380)	[.038]	ND	(360)	[.036]
Isophorone	ND	(350)	[.035]	ND	(350)	[.036]	ND	(380)	[.038]	ND	(360)	[.036]
Methyl methanesulfonate	ND	(350)	[.035]	ND	(350)	[.036]	ND	(380)	[.038]	ND	(360)	[.036]
N-Nitroso-di-n-butylamine	ND	(350)	[.035]	ND	(350)	[.036]	ND	(380)	[.038]	ND	(360)	[.036]
N-Nitrosodimethylamine	ND	(350)	[.035]	ND	(350)	[.036]	ND	(380)	[.038]	ND	(360)	[.036]
N-Nitrosodiphenylamine	ND	(350)	[.035]	ND	(350)	[.036]	ND	(380)	[.038]	ND	(360)	[.036]
N-Nitrosodipropylamine	ND	(350)	[.035]	ND	(350)	[.036]	ND	(380)	[.038]	ND	(360)	[.036]

Compiled: 8 February 1994

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TABLE B1

RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)																
	NONE 11 CAN97-11-09 39 - 41				NONE 11 CAN97-11-99 Dup of CAN97-11-09 39 - 41				NONE 11 CAN97-11-10 46 - 48				NONE 11 CAN97-11-11 51 - 53			
N-Nitrosopiperidine	ND	(350)	[	.035]	ND	(350)	[	.036]	ND	(380)	[	.038]	ND	(360)	[	.036]
Naphthalene	ND	(350)	[	.035]	ND	(350)	[	.036]	ND	(380)	[	.038]	ND	(360)	[	.036]
Nitrobenzene	ND	(350)	[	.035]	ND	(350)	[	.036]	ND	(380)	[	.038]	ND	(360)	[	.036]
Pentachlorobenzene	ND	(350)	[	.035]	ND	(350)	[	.036]	ND	(380)	[	.038]	ND	(360)	[	.036]
Pentachloronitrobenzene	ND	(350)	[	.035]	ND	(350)	[	.036]	ND	(380)	[	.038]	ND	(360)	[	.036]
Pentachlorophenol	ND	(1800)	[	.035]	ND	(1800)	[	.036]	ND	(1900)	[	.038]	ND	(1800)	[	.036]
Phenacetin	ND	(350)	[	.035]	ND	(350)	[	.036]	ND	(380)	[	.038]	ND	(360)	[	.036]
Phenanthrene	ND	(350)	[	.035]	ND	(350)	[	.036]	ND	(380)	[	.038]	ND	(360)	[	.036]
Phenol	ND	(350)	[	.035]	ND	(350)	[	.036]	ND	(380)	[	.038]	ND	(360)	[	.036]
Pronamide	ND	(350)	[	.035]	ND	(350)	[	.036]	ND	(380)	[	.038]	ND	(360)	[	.036]
Pyrene	ND	(350)	[	.035]	ND	(350)	[	.036]	ND	(380)	[	.038]	ND	(360)	[	.036]
Pyridine	ND	(350)	[	.035]	ND	(350)	[	.036]	ND	(380)	[	.038]	ND	(360)	[	.036]
Unknown	NA				NA				NA				140	(0)	[	.036]
bis(2-Chloroethoxy)methane	ND	(350)	[	.035]	ND	(350)	[	.036]	ND	(380)	[	.038]	ND	(360)	[	.036]
bis(2-Chloroethyl)ether	ND	(350)	[	.035]	ND	(350)	[	.036]	ND	(380)	[	.038]	ND	(360)	[	.036]
bis(2-Chloroisopropyl)ether	ND	(350)	[	.035]	ND	(350)	[	.036]	ND	(380)	[	.038]	ND	(360)	[	.036]
bis(2-Ethylhexyl)phthalate	ND	(350)	[	.035]	ND	(350)	[	.036]	ND	(380)	[	.038]	36 JB	(360)	[	.036]
p-Chloroaniline	ND	(350)	[	.035]	ND	(350)	[	.036]	ND	(380)	[	.038]	ND	(360)	[	.036]
p-Dimethylaminoazobenzene	ND	(350)	[	.035]	ND	(350)	[	.036]	ND	(380)	[	.038]	ND	(360)	[	.036]

TABLE B1

RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)														
	NONE 11 CAN97-11-12 54 - 56			NONE 11 CAN97-11-13 59 - 61			NONE 12 CAN97-12-06 5 - 7			NONE 12 CAN97-12-I 4 - 6		
EPA 418.1 - Total Recoverable Petroleum Hydrocarbons (mg/kg)												
Hydrocarbons	ND	(26)	[5.280]	ND	(26)	[5.219]	ND	(26)	[5.231]	35 @	(26)	[5.198]
SW8015 - Total Petroleum Hydrocarbons (ug/kg)												
Benzene (2)	NA			NA			ND	(32)	[106.000]	NA		
Diesel (2)	NA			NA			21000 GB@	(4900)	[98.039]	NA		
Ethylbenzene (2)	NA			NA			ND	(32)	[106.000]	NA		
Gasoline (2)	NA			NA			ND	(5300)	[106.000]	NA		
Jet fuel (2)	NA			NA			ND	(9800)	[98.039]	NA		
Kerosene (2)	NA			NA			ND	(9800)	[98.039]	NA		
Toluene (2)	NA			NA			ND	(32)	[106.000]	NA		
Xylenes (total) (2)	NA			NA			ND	(53)	[106.000]	NA		
SW8080 - Organochlorine Pesticides and PCBs (ug/kg)												
4,4'-DDD	ND	(0.35)	[35.211]	ND	(0.35)	[34.758]	ND	(0.35)	[35.236]	ND	(0.35)	[35.100]
4,4'-DDE	ND	(0.35)	[35.211]	ND	(0.35)	[34.758]	ND	(0.35)	[35.236]	ND	(0.35)	[35.100]
4,4'-DDT	ND	(0.7)	[35.211]	ND	(0.7)	[34.758]	ND	(0.7)	[35.236]	1.4 @	(0.7)	[35.100]
Aldrin	ND	(0.35)	[35.211]	ND	(0.35)	[34.758]	ND	(0.35)	[35.236]	ND	(0.35)	[35.100]
Chlordane	ND	(1.8)	[35.211]	ND	(1.7)	[34.758]	ND	(1.8)	[35.236]	ND	(1.8)	[35.100]
Dieldrin	ND	(0.35)	[35.211]	ND	(0.35)	[34.758]	ND	(0.35)	[35.236]	ND	(0.35)	[35.100]
Endosulfan I	ND	(0.35)	[35.211]	ND	(0.35)	[34.758]	ND	(0.35)	[35.236]	ND	(0.35)	[35.100]
Endosulfan II	ND	(1.1)	[35.211]	ND	(1)	[34.758]	ND	(1.1)	[35.236]	ND	(1.1)	[35.100]
Endosulfan Sulfate	ND	(1.8)	[35.211]	ND	(1.7)	[34.758]	ND	(1.8)	[35.236]	ND	(1.8)	[35.100]
Endrin	ND	(0.35)	[35.211]	ND	(0.35)	[34.758]	ND	(0.35)	[35.236]	ND	(0.35)	[35.100]
Endrin Aldehyde	ND	(0.7)	[35.211]	ND	(0.7)	[34.758]	ND	(0.7)	[35.236]	ND	(0.7)	[35.100]
Endrin Ketone	ND	(1.8)	[35.211]	ND	(1.7)	[34.758]	ND	(1.8)	[35.236]	ND	(1.8)	[35.100]
Heptachlor	ND	(0.35)	[35.211]	ND	(0.35)	[34.758]	ND	(0.35)	[35.236]	ND	(0.35)	[35.100]
Heptachlor epoxide	ND	(0.35)	[35.211]	ND	(0.35)	[34.758]	ND	(0.35)	[35.236]	0.11 J	(0.35)	[35.100]
Methoxychlor	ND	(1.8)	[35.211]	ND	(1.7)	[34.758]	ND	(1.8)	[35.236]	ND	(1.8)	[35.100]
PCB-1016	ND	(3.5)	[35.211]	ND	(3.5)	[34.758]	ND	(3.5)	[35.236]	ND	(3.5)	[35.100]
PCB-1221	ND	(7)	[35.211]	ND	(7)	[34.758]	ND	(7)	[35.236]	ND	(7)	[35.100]

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TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 11 CAN97-11-12 54 - 56			NONE 11 CAN97-11-13 59 - 61			NONE 12 CAN97-12-06 5 - 7			NONE 12 CAN97-12-1 4 - 6		
PCB-1232	ND	(7)	[35.211]	ND	(7)	[34.758]	ND	(7)	[35.236]	ND	(7)	[35.100]
PCB-1242	ND	(3.5)	[35.211]	ND	(3.5)	[34.758]	ND	(3.5)	[35.236]	ND	(3.5)	[35.100]
PCB-1248	ND	(3.5)	[35.211]	ND	(3.5)	[34.758]	ND	(3.5)	[35.236]	ND	(3.5)	[35.100]
PCB-1254	ND	(7)	[35.211]	ND	(7)	[34.758]	ND	(7)	[35.236]	ND	(7)	[35.100]
PCB-1260	ND	(7)	[35.211]	ND	(7)	[34.758]	ND	(7)	[35.236]	ND	(7)	[35.100]
Toxaphene	ND	(18)	[35.211]	ND	(17)	[34.758]	ND	(18)	[35.236]	ND	(18)	[35.100]
alpha-BHC	ND	(0.35)	[35.211]	ND	(0.35)	[34.758]	ND	(0.35)	[35.236]	ND	(0.35)	[35.100]
beta-BHC	ND	(0.35)	[35.211]	ND	(0.35)	[34.758]	ND	(0.35)	[35.236]	ND	(0.35)	[35.100]
delta-BHC	ND	(0.35)	[35.211]	ND	(0.35)	[34.758]	ND	(0.35)	[35.236]	ND	(0.35)	[35.100]
gamma-BHC	ND	(0.35)	[35.211]	ND	(0.35)	[34.758]	ND	(0.35)	[35.236]	ND	(0.35)	[35.100]
SW8150 - Chlorinated Herbicides (ug/kg)												
2,4,5-T	NA			NA			ND	(7.1)	[35.273]	NA		
2,4,5-TP (Silvex)	NA			NA			ND	(6)	[35.273]	NA		
2,4-D	NA			NA			ND	(42)	[35.273]	NA		
2,4-DB	NA			NA			ND	(32)	[35.273]	NA		
Dalapon	NA			NA			ND	(200)	[35.273]	NA		
Dicamba	NA			NA			ND	(9.5)	[35.273]	NA		
Dichloroprop	NA			NA			ND	(23)	[35.273]	NA		
Dinoseb	NA			NA			ND	(5.3)	[35.273]	NA		
MCPA	NA			NA			ND	(8800)	[35.273]	NA		
MCPP	NA			NA			ND	(8800)	[35.273]	NA		
SW8240 - Volatile Organics (ug/kg)												
1,1,1-Trichloroethane	ND	(5.3)	[1.056]	ND	(5.2)	[1.043]	ND	(5.3)	[1.059]	ND	(5.3)	[1.055]
1,1,2,2-Tetrachloroethane	ND	(5.3)	[1.056]	ND	(5.2)	[1.043]	ND	(5.3)	[1.059]	ND	(5.3)	[1.055]
1,1,2-Trichloroethane	ND	(5.3)	[1.056]	ND	(5.2)	[1.043]	ND	(5.3)	[1.059]	ND	(5.3)	[1.055]
1,1-Dichloroethane	ND	(5.3)	[1.056]	ND	(5.2)	[1.043]	ND	(5.3)	[1.059]	ND	(5.3)	[1.055]
1,1-Dichloroethene	ND	(5.3)	[1.056]	ND	(5.2)	[1.043]	ND	(5.3)	[1.059]	ND	(5.3)	[1.055]
1,2,3-Trichloropropane	ND	(5.3)	[1.056]	ND	(5.2)	[1.043]	ND	(5.3)	[1.059]	ND	(5.3)	[1.055]
1,2-Dichloroethane	ND	(5.3)	[1.056]	ND	(5.2)	[1.043]	ND	(5.3)	[1.059]	ND	(5.3)	[1.055]

Compiled: 8 F[illegible]ry 1994 () = Reporting Limit [ ] = Factor ND = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID: NONE LOCATION ID: 11 SAMPLE ID: CAN97-11-12 BEG. DEPTH - END DEPTH (FT.): 54 - 56			SITE ID: NONE LOCATION ID: 11 SAMPLE ID: CAN97-11-13 BEG. DEPTH - END DEPTH (FT.): 59 - 61			SITE ID: NONE LOCATION ID: 12 SAMPLE ID: CAN97-12-06 BEG. DEPTH - END DEPTH (FT.): 5 - 7			SITE ID: NONE LOCATION ID: 12 SAMPLE ID: CAN97-12-I BEG. DEPTH - END DEPTH (FT.): 4 - 6		
1,2-Dichloropropane	ND	(5.3)	[1.056]	ND	(5.2)	[1.043]	ND	(5.3)	[1.059]	ND	(5.3)	[1.055]
2-Chloroethyl vinyl ether	ND	(11)	[1.056]	ND	(10)	[1.043]	ND	(11)	[1.059]	ND	(11)	[1.055]
2-Hexanone	ND	(53)	[1.056]	ND	(52)	[1.043]	ND	(53)	[1.059]	ND	(53)	[1.055]
4-Methyl-2-pentanone(MIBK)	ND	(53)	[1.056]	ND	(52)	[1.043]	ND	(53)	[1.059]	ND	(53)	[1.055]
Acetone	ND	(110)	[1.056]	ND	(100)	[1.043]	ND	(110)	[1.059]	ND	(110)	[1.055]
Acrolein	ND	(79)	[1.056]	ND	(78)	[1.043]	ND	(79)	[1.059]	ND	(79)	[1.055]
Acrylonitrile	ND	(53)	[1.056]	ND	(52)	[1.043]	ND	(53)	[1.059]	ND	(53)	[1.055]
Benzene	ND	(5.3)	[1.056]	ND	(5.2)	[1.043]	ND	(5.3)	[1.059]	ND	(5.3)	[1.055]
Bromodichloromethane	ND	(5.3)	[1.056]	ND	(5.2)	[1.043]	ND	(5.3)	[1.059]	ND	(5.3)	[1.055]
Bromomethane	ND	(11)	[1.056]	ND	(10)	[1.043]	ND	(11)	[1.059]	ND	(11)	[1.055]
Carbon disulfide	ND	(5.3)	[1.056]	ND	(5.2)	[1.043]	ND	(5.3)	[1.059]	ND	(5.3)	[1.055]
Carbon tetrachloride	ND	(5.3)	[1.056]	ND	(5.2)	[1.043]	ND	(5.3)	[1.059]	ND	(5.3)	[1.055]
Chlorobenzene	ND	(5.3)	[1.056]	ND	(5.2)	[1.043]	ND	(5.3)	[1.059]	ND	(5.3)	[1.055]
Chloroethane	ND	(11)	[1.056]	ND	(10)	[1.043]	ND	(11)	[1.059]	ND	(11)	[1.055]
Chloroform	ND	(5.3)	[1.056]	ND	(5.2)	[1.043]	ND	(5.3)	[1.059]	ND	(5.3)	[1.055]
Chloromethane	ND	(11)	[1.056]	ND	(10)	[1.043]	ND	(11)	[1.059]	ND	(11)	[1.055]
Dibromochloromethane	ND	(5.3)	[1.056]	ND	(5.2)	[1.043]	ND	(5.3)	[1.059]	ND	(5.3)	[1.055]
Dibromomethane	ND	(5.3)	[1.056]	ND	(5.2)	[1.043]	ND	(5.3)	[1.059]	ND	(5.3)	[1.055]
Dichlorodifluoromethane	ND	(21)	[1.056]	ND	(21)	[1.043]	ND	(21)	[1.059]	ND	(21)	[1.055]
Ethyl acetate	110	()	[1.056]	5.9	()	[1.043]	NA			NA		
Ethyl benzene	ND	(5.3)	[1.056]	ND	(5.2)	[1.043]	ND	(5.3)	[1.059]	ND	(5.3)	[1.055]
Ethyl methacrylate	ND	(16)	[1.056]	ND	(16)	[1.043]	ND	(16)	[1.059]	ND	(16)	[1.055]
Iodomethane	ND	(5.3)	[1.056]	ND	(5.2)	[1.043]	ND	(5.3)	[1.059]	ND	(5.3)	[1.055]
Methyl acetate	8.4	()	[1.056]	7.4	()	[1.043]	NA			NA		
Methyl ethyl ketone	ND	(110)	[1.056]	ND	(100)	[1.043]	ND	(110)	[1.059]	ND	(110)	[1.055]
Methylene chloride	ND	(5.3)	[1.056]	ND	(5.2)	[1.043]	ND	(5.3)	[1.059]	ND	(5.3)	[1.055]
Styrene	ND	(5.3)	[1.056]	ND	(5.2)	[1.043]	ND	(5.3)	[1.059]	ND	(5.3)	[1.055]
Tetrachloroethene	ND	(5.3)	[1.056]	ND	(5.2)	[1.043]	ND	(5.3)	[1.059]	ND	(5.3)	[1.055]
Toluene	4.4 J	(5.3)	[1.056]	0.97 J	(5.2)	[1.043]	ND	(5.3)	[1.059]	ND	(5.3)	[1.055]

Compiled: 8 February 1994 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B1

RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)														
	NONE 11 CAN97-11-12 54 - 56			NONE 11 CAN97-11-13 59 - 61			NONE 12 CAN97-12-06 5 - 7			NONE 12 CAN97-12-I 4 - 6		
Tribromomethane(Bromoform)	ND	(5.3)	[1.056]	ND	(5.2)	[1.043]	ND	(5.3)	[1.059]	ND	(5.3)	[1.055]
Trichloroethene	ND	(5.3)	[1.056]	ND	(5.2)	[1.043]	ND	(5.3)	[1.059]	ND	(5.3)	[1.055]
Trichlorofluoromethane	ND	(11)	[1.056]	ND	(10)	[1.043]	ND	(11)	[1.059]	ND	(11)	[1.055]
Vinyl acetate	ND	(5.3)	[1.056]	ND	(5.2)	[1.043]	ND	(5.3)	[1.059]	ND	(5.3)	[1.055]
Vinyl chloride	ND	(11)	[1.056]	ND	(10)	[1.043]	ND	(11)	[1.059]	ND	(11)	[1.055]
Xylenes	ND	(5.3)	[1.056]	ND	(5.2)	[1.043]	ND	(5.3)	[1.059]	ND	(5.3)	[1.055]
cis-1,3-Dichloropropene	ND	(5.3)	[1.056]	ND	(5.2)	[1.043]	ND	(5.3)	[1.059]	ND	(5.3)	[1.055]
trans-1,2-Dichloroethene	ND	(5.3)	[1.056]	ND	(5.2)	[1.043]	ND	(5.3)	[1.059]	ND	(5.3)	[1.055]
trans-1,3-Dichloropropene	ND	(5.3)	[1.056]	ND	(5.2)	[1.043]	ND	(5.3)	[1.059]	ND	(5.3)	[1.055]
trans-1,4-Dichloro-2-butene	ND	(11)	[1.056]	ND	(10)	[1.043]	ND	(11)	[1.059]	ND	(11)	[1.055]
SW8270 - Semivolatile Organics (ug/kg)												
1,2,4,5-Tetrachlorobenzene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]
1,2,4-Trichlorobenzene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]
1,2-Dichlorobenzene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]
1,2-Diphenylhydrazine	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]
1,3-Dichlorobenzene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]
1,4-Dichlorobenzene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]
1-Chloronaphthalene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]
1-Naphthylamine	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]
2,3,4,6-Tetrachlorophenol	ND	(700)	[.035]	ND	(700)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]
2,4,5-Trichlorophenol	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]
2,4,6-Trichlorophenol	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]
2,4-Dichlorophenol	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]
2,4-Dimethylphenol	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]
2,4-Dinitrophenol	ND	(1800)	[.035]	ND	(1700)	[.035]	ND	(710)	[.035]	ND	(700)	[.035]
2,4-Dinitrotoluene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]
2,6-Dichlorophenol	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]
2,6-Dinitrotoluene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]
2-Chloronaphthalene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]

Compiled: 8 F[illegible]y 1994

() = Reporting Limit [] = Factor * Not Detected NA = Not Applicable

TABLE B1

RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)														
	NONE 11 CAN97-11-12 54 - 56			NONE 11 CAN97-11-13 59 - 61			NONE 12 CAN97-12-06 5 - 7			NONE 12 CAN97-12-1 4 - 6		
2-Chlorophenol	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]
2-Methylnaphthalene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]
2-Methylphenol(o-cresol)	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]
2-Naphthylamine	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]
2-Nitroaniline	ND	(1800)	[.035]	ND	(1700)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]
2-Nitrophenol	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]
2-Picoline	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]
3,3'-Dichlorobenzidine	ND	(700)	[.035]	ND	(700)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]
3-Methylcholanthrene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]
3-Nitroaniline	ND	(1800)	[.035]	ND	(1700)	[.035]	ND	(710)	[.035]	ND	(700)	[.035]
4,6-Dinitro-2-methylphenol	ND	(1800)	[.035]	ND	(1700)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]
4-Aminobiphenyl	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]
4-Bromophenyl phenyl ether	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]
4-Chloro-3-methylphenol	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]
4-Chlorophenyl phenyl ether	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]
4-Methylphenol(p-cresol)	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]
4-Nitroaniline	ND	(1800)	[.035]	ND	(1700)	[.035]	ND	(710)	[.035]	ND	(700)	[.035]
4-Nitrophenol	ND	(1800)	[.035]	ND	(1700)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]
7,12-Dimethylbenz(a)anthracene	ND	(880)	[.035]	ND	(870)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]
Acenaphthene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]
Acenaphthylene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]
Acetophenone	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]
Aniline	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]
Anthracene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]
Benzidine	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]
Benzo(a)anthracene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]
Benzo(a)pyrene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]
Benzo(b)fluoranthene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]
Benzo(g,h,i)perylene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]

Compiled: 8 February 1994

() = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)																
	NONE 11 CAN97-11-12 54 - 56				NONE 11 CAN97-11-13 59 - 61				NONE 12 CAN97-12-06 5 - 7				NONE 12 CAN97-12-I 4 - 6			
Benzo(k)fluoranthene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]
Benzoic acid	ND	(1800)	[	.035]	ND	(1700)	[	.035]	ND	(1800)	[	.035]	ND	(1800)	[	.035]
Benzyl alcohol	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]
Butylbenzylphthalate	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]
Chrysene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]
Di-n-octylphthalate	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]
Dibenz(a,h)anthracene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]
Dibenz(a,j)acridine	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]
Dibenzofuran	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]
Dibutylphthalate	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]
Diethylphthalate	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]
Dimethylphenethylamine	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(4200)	[	.035]	ND	(4200)	[	.035]
Dimethylphthalate	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]
Diphenylamine	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]
Ethyl methanesulfonate	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]
Fluoranthene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	18 J	(350)	[	.035]
Fluorene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]
Hexachlorobenzene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]
Hexachlorobutadiene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]
Hexachlorocyclopentadiene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]
Hexachloroethane	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]
Indeno(1,2,3-cd)pyrene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]
Isophorone	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]
Methyl methanesulfonate	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(1800)	[	.035]	ND	(1800)	[	.035]
N-Nitroso-di-n-butylamine	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]
N-Nitrosodimethylamine	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]
N-Nitrosodiphenylamine	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]
N-Nitrosodipropylamine	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]
N-Nitrosopiperidine	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID	LOCATION ID	SAMPLE ID	BEG. DEPTH - END DEPTH (FT.)																
	NONE	11	CAN97-11-12	54 - 56				NONE	11	CAN97-11-13	59 - 61			NONE	12	CAN97-12-06	5 - 7			NONE	12	CAN97-12-[	4 - 6		
Naphthalene	ND		(350)	[	.035]	ND		(350)	[	.035]	ND		(350)	[	.035]	ND		(350)	[	.035]
Nitrobenzene	ND		(350)	[	.035]	ND		(350)	[	.035]	ND		(350)	[	.035]	ND		(350)	[	.035]
Pentachlorobenzene	ND		(350)	[	.035]	ND		(350)	[	.035]	ND		(350)	[	.035]	ND		(350)	[	.035]
Pentachloronitrobenzene	ND		(350)	[	.035]	ND		(350)	[	.035]	ND		(350)	[	.035]	ND		(350)	[	.035]
Pentachlorophenol	ND		(1800)	[	.035]	ND		(1700)	[	.035]	ND		(350)	[	.035]	ND		(350)	[	.035]
Phenacetin	ND		(350)	[	.035]	ND		(350)	[	.035]	ND		(350)	[	.035]	ND		(350)	[	.035]
Phenanthrene	ND		(350)	[	.035]	ND		(350)	[	.035]	ND		(350)	[	.035]	16	J	(350)	[	.035]
Phenol	ND		(350)	[	.035]	ND		(350)	[	.035]	ND		(350)	[	.035]	ND		(350)	[	.035]
Pronamide	ND		(350)	[	.035]	ND		(350)	[	.035]	ND		(350)	[	.035]	ND		(350)	[	.035]
Pyrene	ND		(350)	[	.035]	ND		(350)	[	.035]	ND		(350)	[	.035]	14	J	(350)	[	.035]
Pyridine	ND		(350)	[	.035]	ND		(350)	[	.035]	ND		(350)	[	.035]	ND		(350)	[	.035]
Unknown	210		(0)	[	.035]	NA					250		(0)	[	.035]	460		(0)	[	.035]
Unknown aldehyde	NA					NA					NA					240		(0)	[	.035]
Unknown alkane	NA					NA					NA					350		(0)	[	.035]
Unknown carboxylic acid	NA					NA					NA					240		(0)	[	.035]
bis(2-Chloroethoxy)methane	ND		(350)	[	.035]	ND		(350)	[	.035]	ND		(350)	[	.035]	ND		(350)	[	.035]
bis(2-Chloroethyl)ether	ND		(350)	[	.035]	ND		(350)	[	.035]	ND		(350)	[	.035]	ND		(350)	[	.035]
bis(2-Chloroisopropyl)ether	ND		(350)	[	.035]	ND		(350)	[	.035]	ND		(350)	[	.035]	ND		(350)	[	.035]
bis(2-Ethylhexyl)phthalate	ND		(350)	[	.035]	ND		(350)	[	.035]	ND		(350)	[	.035]	11	J	(350)	[	.035]
p-Chloroaniline	ND		(350)	[	.035]	ND		(350)	[	.035]	ND		(350)	[	.035]	ND		(350)	[	.035]
p-Dimethylaminoazobenzene	ND		(350)	[	.035]	ND		(350)	[	.035]	ND		(350)	[	.035]	ND		(350)	[	.035]

Compiled: 8 February 1994 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID											
	LOCATION ID											
	SAMPLE ID											
	BEG. DEPTH - END DEPTH (FT.)											
	NONE			NONE			NONE			NONE		
	12			13			13			13		
	CAN97-12-S			CAN97-13-06			CAN97-13-I			CAN97-13-S		
	0 - 2			5 - 7			4 - 6			0 - 2		
EPA 418.1 - Total Recoverable Petroleum Hydrocarbons (mg/kg)												
Hydrocarbons	67 @	(25)	[5.007]	ND	(28)	[5.568]	12 @	(27)	[5.382]	62 @	(25)	[5.031]
SW8015 - Total Petroleum Hydrocarbons (ug/kg)												
Benzene (2)	NA			NA			ND	(32)	[107.000]	NA		
Diesel (2)	NA			NA			18000 GB@	(5400)	[107.527]	NA		
Ethylbenzene (2)	NA			NA			ND	(32)	[107.000]	NA		
Gasoline (2)	NA			NA			ND	(5400)	[107.000]	NA		
Jet fuel (2)	NA			NA			ND	(11000)	[107.527]	NA		
Kerosene (2)	NA			NA			ND	(11000)	[107.527]	NA		
Toluene (2)	NA			NA			ND	(32)	[107.000]	NA		
Xylenes (total) (2)	NA			NA			ND	(54)	[107.000]	NA		
SW8080 - Organochlorine Pesticides and PCBs (ug/kg)												
4,4'-DDD	ND	(3.4)	[336.247]	ND	(0.38)	[37.750]	ND	(0.36)	[36.088]	ND	(3.4)	[339.443]
4,4'-DDE	8.4 @	(3.4)	[336.247]	ND	(0.38)	[37.750]	ND	(0.36)	[36.088]	4.3 @	(3.4)	[339.443]
4,4'-DDT	3.8 J	(6.7)	[336.247]	ND	(0.76)	[37.750]	0.69 J	(0.72)	[36.088]	2.4 J	(6.8)	[339.443]
Aldrin	ND	(3.4)	[336.247]	ND	(0.38)	[37.750]	ND	(0.36)	[36.088]	1.9 J	(3.4)	[339.443]
Chlordane	ND	(17)	[336.247]	ND	(1.9)	[37.750]	ND	(1.8)	[36.088]	ND	(17)	[339.443]
Dieldrin	ND	(3.4)	[336.247]	ND	(0.38)	[37.750]	ND	(0.36)	[36.088]	ND	(3.4)	[339.443]
Endosulfan I	ND	(3.4)	[336.247]	ND	(0.38)	[37.750]	ND	(0.36)	[36.088]	ND	(3.4)	[339.443]
Endosulfan II	ND	(10)	[336.247]	ND	(1.1)	[37.750]	ND	(1.1)	[36.088]	ND	(10)	[339.443]
Endosulfan Sulfate	ND	(17)	[336.247]	ND	(1.9)	[37.750]	ND	(1.8)	[36.088]	ND	(17)	[339.443]
Endrin	ND	(3.4)	[336.247]	ND	(0.38)	[37.750]	ND	(0.36)	[36.088]	ND	(3.4)	[339.443]
Endrin Aldehyde	ND	(6.7)	[336.247]	ND	(0.76)	[37.750]	ND	(0.72)	[36.088]	ND	(6.8)	[339.443]
Endrin Ketone	ND	(17)	[336.247]	ND	(1.9)	[37.750]	ND	(1.8)	[36.088]	ND	(17)	[339.443]
Heptachlor	ND	(3.4)	[336.247]	ND	(0.38)	[37.750]	ND	(0.36)	[36.088]	ND	(3.4)	[339.443]
Heptachlor epoxide	ND	(3.4)	[336.247]	0.07 J	(0.38)	[37.750]	ND	(0.36)	[36.088]	ND	(3.4)	[339.443]
Methoxychlor	ND	(17)	[336.247]	ND	(1.9)	[37.750]	ND	(1.8)	[36.088]	ND	(17)	[339.443]
PCB-1016	ND	(34)	[336.247]	ND	(3.8)	[37.750]	ND	(3.6)	[36.088]	ND	(34)	[339.443]
PCB-1221	ND	(67)	[336.247]	ND	(7.6)	[37.750]	ND	(7.2)	[36.088]	ND	(68)	[339.443]

Compiled: 8 Fe y 1994 () = Reporting Limit [] = Factor = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID	LOCATION ID	SAMPLE ID	BEG. DEPTH - END DEPTH (FT.)										
	NONE	12	CAN97-12-S	0 - 2	NONE	13	CAN97-13-06	5 - 7	NONE	13	CAN97-13-I	4 - 6	NONE	13	CAN97-13-S	0 - 2
PCB-1232	ND	(67)	[336.247]		ND	(7.6)	[37.750]		ND	(7.2)	[36.088]		ND	(68)	[339.443]	
PCB-1242	ND	(34)	[336.247]		ND	(3.8)	[37.750]		ND	(3.6)	[36.088]		ND	(34)	[339.443]	
PCB-1248	ND	(34)	[336.247]		ND	(3.8)	[37.750]		ND	(3.6)	[36.088]		ND	(34)	[339.443]	
PCB-1254	ND	(67)	[336.247]		ND	(7.6)	[37.750]		ND	(7.2)	[36.088]		ND	(68)	[339.443]	
PCB-1260	ND	(67)	[336.247]		ND	(7.6)	[37.750]		ND	(7.2)	[36.088]		ND	(68)	[339.443]	
Toxaphene	ND	(170)	[336.247]		ND	(19)	[37.750]		ND	(18)	[36.088]		ND	(170)	[339.443]	
alpha-BHC	ND	(3.4)	[336.247]		ND	(0.38)	[37.750]		ND	(0.36)	[36.088]		ND	(3.4)	[339.443]	
beta-BHC	ND	(3.4)	[336.247]		ND	(0.38)	[37.750]		ND	(0.36)	[36.088]		ND	(3.4)	[339.443]	
delta-BHC	ND	(3.4)	[336.247]		ND	(0.38)	[37.750]		ND	(0.36)	[36.088]		ND	(3.4)	[339.443]	
gamma-BHC	ND	(3.4)	[336.247]		ND	(0.38)	[37.750]		ND	(0.36)	[36.088]		ND	(3.4)	[339.443]	
SW8150 - Chlorinated Herbicides (ug/kg)																
2,4,5-T	NA				NA				0.88 J	(7.2)	[36.206]		NA			
2,4,5-TP (Silvex)	NA				NA				2.9 J	(6.2)	[36.206]		NA			
2,4-D	NA				NA				ND	(43)	[36.206]		NA			
2,4-DB	NA				NA				ND	(33)	[36.206]		NA			
Dalapon	NA				NA				ND	(210)	[36.206]		NA			
Dicamba	NA				NA				ND	(9.8)	[36.206]		NA			
Dichloroprop	NA				NA				ND	(24)	[36.206]		NA			
Dinoseb	NA				NA				ND	(5.4)	[36.206]		NA			
MCPA	NA				NA				ND	(9000)	[36.206]		NA			
MCPP	NA				NA				2000 J	(7000)	[36.206]		NA			
SW8240 - Volatile Organics (ug/kg)																
1,1,1-Trichloroethane	ND	(5)	[1.010]		ND	(5.7)	[1.133]		ND	(5.4)	[1.086]		ND	(5.1)	[1.020]	
1,1,2,2-Tetrachloroethane	ND	(5)	[1.010]		ND	(5.7)	[1.133]		ND	(5.4)	[1.086]		ND	(5.1)	[1.020]	
1,1,2-Trichloroethane	ND	(5)	[1.010]		ND	(5.7)	[1.133]		ND	(5.4)	[1.086]		ND	(5.1)	[1.020]	
1,1-Dichloroethane	ND	(5)	[1.010]		ND	(5.7)	[1.133]		ND	(5.4)	[1.086]		ND	(5.1)	[1.020]	
1,1-Dichloroethene	ND	(5)	[1.010]		ND	(5.7)	[1.133]		ND	(5.4)	[1.086]		ND	(5.1)	[1.020]	
1,2,3-Trichloropropane	ND	(5)	[1.010]		ND	(5.7)	[1.133]		ND	(5.4)	[1.086]		ND	(5.1)	[1.020]	
1,2-Dichloroethane	ND	(5)	[1.010]		ND	(5.7)	[1.133]		ND	(5.4)	[1.086]		ND	(5.1)	[1.020]	

Compiled: 8 February 1994 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 12 CAN97-12-S 0 - 2			NONE 13 CAN97-13-06 5 - 7			NONE 13 CAN97-13-I 4 - 6			NONE 13 CAN97-13-S 0 - 2		
1,2-Dichloropropane	ND	(5)	[1.010]	ND	(5.7)	[1.133]	ND	(5.4)	[1.086]	ND	(5.1)	[1.020]
2-Chloroethyl vinyl ether	ND	(10)	[1.010]	ND	(11)	[1.133]	ND	(11)	[1.086]	ND	(10)	[1.020]
2-Hexanone	ND	(50)	[1.010]	ND	(57)	[1.133]	ND	(54)	[1.086]	ND	(51)	[1.020]
4-Methyl-2-pentanone(MIBK)	ND	(50)	[1.010]	ND	(57)	[1.133]	ND	(54)	[1.086]	ND	(51)	[1.020]
Acetone	ND	(100)	[1.010]	12 J	(110)	[1.133]	ND	(110)	[1.086]	ND	(100)	[1.020]
Acrolein	ND	(76)	[1.010]	ND	(85)	[1.133]	ND	(81)	[1.086]	ND	(77)	[1.020]
Acrylonitrile	ND	(50)	[1.010]	ND	(57)	[1.133]	ND	(54)	[1.086]	ND	(51)	[1.020]
Benzene	ND	(5)	[1.010]	ND	(5.7)	[1.133]	ND	(5.4)	[1.086]	2.7 J	(5.1)	[1.020]
Bromodichloromethane	ND	(5)	[1.010]	ND	(5.7)	[1.133]	ND	(5.4)	[1.086]	ND	(5.1)	[1.020]
Bromomethane	ND	(10)	[1.010]	ND	(11)	[1.133]	ND	(11)	[1.086]	ND	(10)	[1.020]
Carbon disulfide	ND	(5)	[1.010]	ND	(5.7)	[1.133]	ND	(5.4)	[1.086]	ND	(5.1)	[1.020]
Carbon tetrachloride	ND	(5)	[1.010]	ND	(5.7)	[1.133]	ND	(5.4)	[1.086]	ND	(5.1)	[1.020]
Chlorobenzene	ND	(5)	[1.010]	ND	(5.7)	[1.133]	ND	(5.4)	[1.086]	ND	(5.1)	[1.020]
Chloroethane	ND	(10)	[1.010]	ND	(11)	[1.133]	ND	(11)	[1.086]	ND	(10)	[1.020]
Chloroform	ND	(5)	[1.010]	ND	(5.7)	[1.133]	ND	(5.4)	[1.086]	ND	(5.1)	[1.020]
Chloromethane	ND	(10)	[1.010]	ND	(11)	[1.133]	ND	(11)	[1.086]	ND	(10)	[1.020]
Dibromochloromethane	ND	(5)	[1.010]	ND	(5.7)	[1.133]	ND	(5.4)	[1.086]	ND	(5.1)	[1.020]
Dibromomethane	ND	(5)	[1.010]	ND	(5.7)	[1.133]	ND	(5.4)	[1.086]	ND	(5.1)	[1.020]
Dichlorodifluoromethane	ND	(20)	[1.010]	ND	(23)	[1.133]	ND	(22)	[1.086]	ND	(20)	[1.020]
Ethyl benzene	ND	(5)	[1.010]	ND	(5.7)	[1.133]	ND	(5.4)	[1.086]	ND	(5.1)	[1.020]
Ethyl methacrylate	ND	(15)	[1.010]	ND	(17)	[1.133]	ND	(16)	[1.086]	ND	(15)	[1.020]
Iodomethane	ND	(5)	[1.010]	ND	(5.7)	[1.133]	ND	(5.4)	[1.086]	ND	(5.1)	[1.020]
Methyl ethyl ketone	ND	(100)	[1.010]	ND	(110)	[1.133]	ND	(110)	[1.086]	ND	(100)	[1.020]
Methylene chloride	32	(5)	[1.010]	ND	(5.7)	[1.133]	ND	(5.4)	[1.086]	11 @	(5.1)	[1.020]
Styrene	ND	(5)	[1.010]	ND	(5.7)	[1.133]	ND	(5.4)	[1.086]	ND	(5.1)	[1.020]
Tetrachloroethene	ND	(5)	[1.010]	ND	(5.7)	[1.133]	ND	(5.4)	[1.086]	ND	(5.1)	[1.020]
Toluene	2.4 J	(5)	[1.010]	1 J	(5.7)	[1.133]	ND	(5.4)	[1.086]	37	(5.1)	[1.020]
Tribromomethane(Bromoform)	ND	(5)	[1.010]	ND	(5.7)	[1.133]	ND	(5.4)	[1.086]	ND	(5.1)	[1.020]
Trichloroethene	ND	(5)	[1.010]	ND	(5.7)	[1.133]	ND	(5.4)	[1.086]	ND	(5.1)	[1.020]

Compiled: 8 F[illegible]y 1994 () = Reporting Limit [] = Factor[illegible] = Not Detected NA = Not Applicable

TABLE B1

RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)																
	NONE 12 CAN97-12-S 0 - 2				NONE 13 CAN97-13-06 5 - 7				NONE 13 CAN97-13-I 4 - 6				NONE 13 CAN97-13-S 0 - 2			
Trichlorofluoromethane	ND	(10)	[1.010]		ND	(11)	[1.133]		ND	(11)	[1.086]		ND	(10)	[1.020]	
Unknown	9.3	()	[1.010]		NA				NA				NA			
Unknown alkane	NA				NA				NA				8	()	[1.020]	
Vinyl acetate	ND	(5)	[1.010]		ND	(5.7)	[1.133]		ND	(5.4)	[1.086]		ND	(5.1)	[1.020]	
Vinyl chloride	ND	(10)	[1.010]		ND	(11)	[1.133]		ND	(11)	[1.086]		ND	(10)	[1.020]	
Xylenes	ND	(5)	[1.010]		ND	(5.7)	[1.133]		ND	(5.4)	[1.086]		2.6	J (5.1)	[1.020]	
cis-1,3-Dichloropropene	ND	(5)	[1.010]		ND	(5.7)	[1.133]		ND	(5.4)	[1.086]		ND	(5.1)	[1.020]	
trans-1,2-Dichloroethene	ND	(5)	[1.010]		ND	(5.7)	[1.133]		ND	(5.4)	[1.086]		ND	(5.1)	[1.020]	
trans-1,3-Dichloropropene	ND	(5)	[1.010]		ND	(5.7)	[1.133]		ND	(5.4)	[1.086]		ND	(5.1)	[1.020]	
trans-1,4-Dichloro-2-butene	ND	(10)	[1.010]		ND	(11)	[1.133]		ND	(11)	[1.086]		ND	(10)	[1.020]	
SW8270 - Semivolatile Organics (ug/kg)																
1,2,4,5-Tetrachlorobenzene	ND	(340)	[.034]		ND	(380)	[.038]		ND	(360)	[.036]		ND	(340)	[.034]	
1,2,4-Trichlorobenzene	ND	(340)	[.034]		ND	(380)	[.038]		ND	(360)	[.036]		ND	(340)	[.034]	
1,2-Dichlorobenzene	ND	(340)	[.034]		ND	(380)	[.038]		ND	(360)	[.036]		ND	(340)	[.034]	
1,2-Diphenylhydrazine	ND	(340)	[.034]		ND	(380)	[.038]		ND	(360)	[.036]		ND	(340)	[.034]	
1,3-Dichlorobenzene	ND	(340)	[.034]		ND	(380)	[.038]		ND	(360)	[.036]		ND	(340)	[.034]	
1,4-Dichlorobenzene	ND	(340)	[.034]		ND	(380)	[.038]		ND	(360)	[.036]		ND	(340)	[.034]	
1-Chloronaphthalene	ND	(340)	[.034]		ND	(380)	[.038]		ND	(360)	[.036]		ND	(340)	[.034]	
1-Naphthylamine	ND	(340)	[.034]		ND	(380)	[.038]		ND	(360)	[.036]		ND	(340)	[.034]	
2,3,4,6-Tetrachlorophenol	ND	(340)	[.034]		ND	(380)	[.038]		ND	(360)	[.036]		ND	(340)	[.034]	
2,4,5-Trichlorophenol	ND	(340)	[.034]		ND	(380)	[.038]		ND	(360)	[.036]		ND	(340)	[.034]	
2,4,6-Trichlorophenol	ND	(340)	[.034]		ND	(380)	[.038]		ND	(360)	[.036]		ND	(340)	[.034]	
2,4-Dichlorophenol	ND	(340)	[.034]		ND	(380)	[.038]		ND	(360)	[.036]		ND	(340)	[.034]	
2,4-Dimethylphenol	ND	(340)	[.034]		ND	(380)	[.038]		ND	(360)	[.036]		ND	(340)	[.034]	
2,4-Dinitrophenol	ND	(670)	[.034]		ND	(760)	[.038]		ND	(720)	[.036]		ND	(680)	[.034]	
2,4-Dinitrotoluene	ND	(340)	[.034]		ND	(380)	[.038]		ND	(360)	[.036]		ND	(340)	[.034]	
2,6-Dichlorophenol	ND	(340)	[.034]		ND	(380)	[.038]		ND	(360)	[.036]		ND	(340)	[.034]	
2,6-Dinitrotoluene	ND	(340)	[.034]		ND	(380)	[.038]		ND	(360)	[.036]		ND	(340)	[.034]	
2-Chloronaphthalene	ND	(340)	[.034]		ND	(380)	[.038]		ND	(360)	[.036]		ND	(340)	[.034]	

Compiled: 8 February 1994

() = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)																
	NONE 12 CAN97-12-S 0 - 2				NONE 13 CAN97-13-06 5 - 7				NONE 13 CAN97-13-I 4 - 6				NONE 13 CAN97-13-S 0 - 2				
2-Chlorophenol	ND	(340)	[	.034]	ND	(380)	[	.038]	ND	(360)	[	.036]	ND	(340)	[	.034]	
2-Methylnaphthalene	ND	(340)	[	.034]	ND	(380)	[	.038]	ND	(360)	[	.036]	56 J	(340)	[	.034]	
2-Methylphenol(o-cresol)	ND	(340)	[	.034]	ND	(380)	[	.038]	ND	(360)	[	.036]	ND	(340)	[	.034]	
2-Naphthylamine	ND	(340)	[	.034]	ND	(380)	[	.038]	ND	(360)	[	.036]	ND	(340)	[	.034]	
2-Nitroaniline	ND	(340)	[	.034]	ND	(380)	[	.038]	ND	(360)	[	.036]	ND	(340)	[	.034]	
2-Nitrophenol	ND	(340)	[	.034]	ND	(380)	[	.038]	ND	(360)	[	.036]	ND	(340)	[	.034]	
2-Picoline	ND	(340)	[	.034]	ND	(380)	[	.038]	ND	(360)	[	.036]	ND	(340)	[	.034]	
3,3'-Dichlorobenzidine	ND	(340)	[	.034]	ND	(380)	[	.038]	ND	(360)	[	.036]	ND	(340)	[	.034]	
3-Methylcholanthrene	ND	(340)	[	.034]	ND	(380)	[	.038]	ND	(360)	[	.036]	ND	(340)	[	.034]	
3-Nitroaniline	ND	(670)	[	.034]	ND	(760)	[	.038]	ND	(720)	[	.036]	ND	(680)	[	.034]	
4,6-Dinitro-2-methylphenol	ND	(340)	[	.034]	ND	(380)	[	.038]	ND	(360)	[	.036]	ND	(340)	[	.034]	
4-Aminobiphenyl	ND	(340)	[	.034]	ND	(380)	[	.038]	ND	(360)	[	.036]	ND	(340)	[	.034]	
4-Bromophenyl phenyl ether	ND	(340)	[	.034]	ND	(380)	[	.038]	ND	(360)	[	.036]	ND	(340)	[	.034]	
4-Chloro-3-methylphenol	ND	(340)	[	.034]	ND	(380)	[	.038]	ND	(360)	[	.036]	ND	(340)	[	.034]	
4-Chlorophenyl phenyl ether	ND	(340)	[	.034]	ND	(380)	[	.038]	ND	(360)	[	.036]	ND	(340)	[	.034]	
4-Methylphenol(p-cresol)	ND	(340)	[	.034]	ND	(380)	[	.038]	ND	(360)	[	.036]	ND	(340)	[	.034]	
4-Nitroaniline	ND	(670)	[	.034]	ND	(760)	[	.038]	ND	(720)	[	.036]	ND	(680)	[	.034]	
4-Nitrophenol	ND	(340)	[	.034]	ND	(380)	[	.038]	ND	(360)	[	.036]	ND	(340)	[	.034]	
7,12-Dimethylbenz(a)anthracene	ND	(340)	[	.034]	ND	(380)	[	.038]	ND	(360)	[	.036]	ND	(340)	[	.034]	
Acenaphthene	ND	(340)	[	.034]	ND	(380)	[	.038]	ND	(360)	[	.036]	ND	(340)	[	.034]	
Acenaphthylene	ND	(340)	[	.034]	ND	(380)	[	.038]	ND	(360)	[	.036]	ND	(340)	[	.034]	
Acetophenone	ND	(340)	[	.034]	ND	(380)	[	.038]	ND	(360)	[	.036]	ND	(340)	[	.034]	
Aniline	ND	(340)	[	.034]	ND	(380)	[	.038]	ND	(360)	[	.036]	ND	(340)	[	.034]	
Anthracene	ND	(340)	[	.034]	ND	(380)	[	.038]	ND	(360)	[	.036]	ND	(340)	[	.034]	
Benzidine	ND	(340)	[	.034]	ND	(380)	[	.038]	ND	(360)	[	.036]	ND	(340)	[	.034]	
Benzo(a)anthracene	ND	(340)	[	.034]	ND	(380)	[	.038]	ND	(360)	[	.036]	ND	(340)	[	.034]	
Benzo(a)pyrene	ND	(340)	[	.034]	ND	(380)	[	.038]	ND	(360)	[	.036]	ND	(340)	[	.034]	
Benzo(b)fluoranthene	ND	(340)	[	.034]	ND	(380)	[	.038]	ND	(360)	[	.036]	ND	(340)	[	.034]	
Benzo(g,h,i)perylene	ND	(340)	[	.034]	ND	(380)	[	.038]	ND	(360)	[	.036]	ND	(340)	[	.034]	

Compiled: 8 Fe y 1994 () = Reporting Limit [] = Factor = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID	LOCATION ID	SAMPLE ID	BEG. DEPTH - END DEPTH (FT.)												
	NONE	12	CAN97-12-S	0 - 2			NONE	13	CAN97-13-06	5 - 7			NONE	13	CAN97-13-I	4 - 6			NONE	13	CAN97-13-S	0 - 2		
Benzo(k)fluoranthene	ND		(340)	[	.034]		ND		(380)	[	.038]		ND		(360)	[	.036]		ND		(340)	[	.034]	
Benzoic acid	ND		(1700)	[	.034]		ND		(1900)	[	.038]		ND		(1800)	[	.036]		87	J8	(1700)	[	.034]	
Benzyl alcohol	ND		(340)	[	.034]		ND		(380)	[	.038]		ND		(360)	[	.036]		ND		(340)	[	.034]	
Butylbenzylphthalate	47	J	(340)	[	.034]		ND		(380)	[	.038]		ND		(360)	[	.036]		ND		(340)	[	.034]	
Chrysene	ND		(340)	[	.034]		ND		(380)	[	.038]		ND		(360)	[	.036]		ND		(340)	[	.034]	
Di-n-octylphthalate	ND		(340)	[	.034]		ND		(380)	[	.038]		ND		(360)	[	.036]		ND		(340)	[	.034]	
Dibenz(a,h)anthracene	ND		(340)	[	.034]		ND		(380)	[	.038]		ND		(360)	[	.036]		ND		(340)	[	.034]	
Dibenz(a,j)acridine	ND		(340)	[	.034]		ND		(380)	[	.038]		ND		(360)	[	.036]		ND		(340)	[	.034]	
Dibenzofuran	ND		(340)	[	.034]		ND		(380)	[	.038]		ND		(360)	[	.036]		12	J	(340)	[	.034]	
Dibutylphthalate	ND		(340)	[	.034]		ND		(380)	[	.038]		ND		(360)	[	.036]		16	J	(340)	[	.034]	
Diethylphthalate	ND		(340)	[	.034]		ND		(380)	[	.038]		ND		(360)	[	.036]		ND		(340)	[	.034]	
Dimethylphenethylamine	ND		(4000)	[	.034]		ND		(4500)	[	.038]		ND		(4300)	[	.036]		ND		(4100)	[	.034]	
Dimethylphthalate	ND		(340)	[	.034]		ND		(380)	[	.038]		ND		(360)	[	.036]		ND		(340)	[	.034]	
Diphenylamine	ND		(340)	[	.034]		ND		(380)	[	.038]		ND		(360)	[	.036]		ND		(340)	[	.034]	
Ethyl methanesulfonate	ND		(340)	[	.034]		ND		(380)	[	.038]		ND		(360)	[	.036]		ND		(340)	[	.034]	
Fluoranthene	ND		(340)	[	.034]		ND		(380)	[	.038]		ND		(360)	[	.036]		9.5	J	(340)	[	.034]	
Fluorene	ND		(340)	[	.034]		ND		(380)	[	.038]		ND		(360)	[	.036]		ND		(340)	[	.034]	
Hexachlorobenzene	ND		(340)	[	.034]		ND		(380)	[	.038]		ND		(360)	[	.036]		ND		(340)	[	.034]	
Hexachlorobutadiene	ND		(340)	[	.034]		ND		(380)	[	.038]		ND		(360)	[	.036]		ND		(340)	[	.034]	
Hexachlorocyclopentadiene	ND		(340)	[	.034]		ND		(380)	[	.038]		ND		(360)	[	.036]		ND		(340)	[	.034]	
Hexachloroethane	ND		(340)	[	.034]		ND		(380)	[	.038]		ND		(360)	[	.036]		ND		(340)	[	.034]	
Indeno(1,2,3-cd)pyrene	ND		(340)	[	.034]		ND		(380)	[	.038]		ND		(360)	[	.036]		ND		(340)	[	.034]	
Isophorone	ND		(340)	[	.034]		ND		(380)	[	.038]		ND		(360)	[	.036]		ND		(340)	[	.034]	
Methyl methanesulfonate	ND		(1700)	[	.034]		ND		(1900)	[	.038]		ND		(1800)	[	.036]		ND		(1700)	[	.034]	
N-Nitroso-di-n-butylamine	ND		(340)	[	.034]		ND		(380)	[	.038]		ND		(360)	[	.036]		ND		(340)	[	.034]	
N-Nitrosodimethylamine	ND		(340)	[	.034]		ND		(380)	[	.038]		ND		(360)	[	.036]		ND		(340)	[	.034]	
N-Nitrosodiphenylamine	ND		(340)	[	.034]		ND		(380)	[	.038]		ND		(360)	[	.036]		ND		(340)	[	.034]	
N-Nitrosodipropylamine	ND		(340)	[	.034]		ND		(380)	[	.038]		ND		(360)	[	.036]		ND		(340)	[	.034]	
N-Nitrosopiperidine	ND		(340)	[	.034]		ND		(380)	[	.038]		ND		(360)	[	.036]		ND		(340)	[	.034]	

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TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)																							
	NONE 12 CAN97-12-S 0 - 2						NONE 13 CAN97-13-06 5 - 7						NONE 13 CAN97-13-I 4 - 6						NONE 13 CAN97-13-S 0 - 2					
Naphthalene	ND		(340)	[	.034]		ND		(380)	[	.038]		ND		(360)	[	.036]		39	J	(340)	[	.034]	
Nitrobenzene	ND		(340)	[	.034]		ND		(380)	[	.038]		ND		(360)	[	.036]		ND		(340)	[	.034]	
Pentachlorobenzene	ND		(340)	[	.034]		ND		(380)	[	.038]		ND		(360)	[	.036]		ND		(340)	[	.034]	
Pentachloronitrobenzene	ND		(340)	[	.034]		ND		(380)	[	.038]		ND		(360)	[	.036]		ND		(340)	[	.034]	
Pentachlorophenol	ND		(340)	[	.034]		ND		(380)	[	.038]		ND		(360)	[	.036]		ND		(340)	[	.034]	
Phenacetin	ND		(340)	[	.034]		ND		(380)	[	.038]		ND		(360)	[	.036]		ND		(340)	[	.034]	
Phenanthrene	ND		(340)	[	.034]		ND		(380)	[	.038]		ND		(360)	[	.036]		15	J	(340)	[	.034]	
Phenol	ND		(340)	[	.034]		ND		(380)	[	.038]		ND		(360)	[	.036]		ND		(340)	[	.034]	
Pronamide	ND		(340)	[	.034]		ND		(380)	[	.038]		ND		(360)	[	.036]		ND		(340)	[	.034]	
Pyrene	ND		(340)	[	.034]		ND		(380)	[	.038]		ND		(360)	[	.036]		9.7	J	(340)	[	.034]	
Pyridine	ND		(340)	[	.034]		ND		(380)	[	.038]		ND		(360)	[	.036]		ND		(340)	[	.034]	
Unknown	340		(0)	[	.034]		NA						250		(0)	[	.036]		510		(0)	[	.034]	
Unknown B	540		(0)	[	.034]		NA						NA						850		(0)	[	.034]	
Unknown aldehyde	NA						NA						290		(0)	[	.036]		NA					
Unknown alkane	200		(0)	[	.034]		NA						360		(0)	[	.036]		200		(0)	[	.034]	
Unknown carboxylic acid	NA						NA						290		(0)	[	.036]		200		(0)	[	.034]	
Unknown naphthalene	NA						NA						NA						140		(0)	[	.034]	
Unknown oxirane	NA						NA						NA						480		(0)	[	.034]	
bis(2-Chloroethoxy)methane	ND		(340)	[	.034]		ND		(380)	[	.038]		ND		(360)	[	.036]		ND		(340)	[	.034]	
bis(2-Chloroethyl)ether	ND		(340)	[	.034]		ND		(380)	[	.038]		ND		(360)	[	.036]		ND		(340)	[	.034]	
bis(2-Chloroisopropyl)ether	ND		(340)	[	.034]		ND		(380)	[	.038]		ND		(360)	[	.036]		ND		(340)	[	.034]	
bis(2-Ethylhexyl)phthalate	ND		(340)	[	.034]		ND		(380)	[	.038]		ND		(360)	[	.036]		ND		(340)	[	.034]	
p-Chloroaniline	ND		(340)	[	.034]		ND		(380)	[	.038]		ND		(360)	[	.036]		ND		(340)	[	.034]	
p-Dimethylaminoazobenzene	ND		(340)	[	.034]		ND		(380)	[	.038]		ND		(360)	[	.036]		ND		(340)	[	.034]	

Compiled: 8 Fe[illegible]y 1994 () = Reporting Limit [] = Factor [illegible] = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 13 CAN97-13-99 Dup of CAN97-13-S 0 - 2			NONE 14 CAN97-14-01 0 - 2			NONE 14 CAN97-14-02 4 - 6			NONE 14 CAN97-14-99 Dup of CAN97-14-02 4 - 6		
EPA 418.1 - Total Recoverable Petroleum Hydrocarbons (mg/kg)												
Hydrocarbons	93 @	(25)	[5.077]	52 @	(27)	[5.336]	14 @	(27)	[5.365]	20 @	(27)	[5.353]
SW8015 - Total Petroleum Hydrocarbons (ug/kg)												
Benzene (2)	NA			NA			ND	(32)	[106.000]	ND	(31)	[104.000]
Diesel (2)	NA			NA			8700 GB@	(5400)	[108.000]	5800 GB@	(5400)	[108.000]
Ethylbenzene (2)	NA			NA			ND	(32)	[106.000]	ND	(31)	[104.000]
Gasoline (2)	NA			NA			ND	(5300)	[106.000]	ND	(5200)	[104.000]
Jet fuel (2)	NA			NA			ND	(11000)	[108.000]	ND	(11000)	[108.000]
Kerosene (2)	NA			NA			ND	(11000)	[108.000]	ND	(11000)	[108.000]
Toluene (2)	NA			NA			ND	(32)	[106.000]	ND	(31)	[104.000]
Xylenes (total) (2)	NA			NA			ND	(53)	[106.000]	ND	(52)	[104.000]
SW8080 - Organochlorine Pesticides and PCBs (ug/kg)												
4,4'-DDD	ND	(3.4)	[341.297]	ND	(3.6)	[355.745]	ND	(0.36)	[35.753]	ND	(0.36)	[35.676]
4,4'-DDE	4.4 @	(3.4)	[341.297]	8.8 @	(3.6)	[355.745]	ND	(0.36)	[35.753]	ND	(0.36)	[35.676]
4,4'-DDT	2.3 J	(6.8)	[341.297]	10 @	(7.1)	[355.745]	0.93 @	(0.72)	[35.753]	ND	(0.71)	[35.676]
Aldrin	ND	(3.4)	[341.297]	ND	(3.6)	[355.745]	0.44 @	(0.36)	[35.753]	ND	(0.36)	[35.676]
Chlordane	ND	(17)	[341.297]	ND	(18)	[355.745]	ND	(1.8)	[35.753]	ND	(1.8)	[35.676]
Dieldrin	ND	(3.4)	[341.297]	ND	(3.6)	[355.745]	ND	(0.36)	[35.753]	ND	(0.36)	[35.676]
Endosulfan I	ND	(3.4)	[341.297]	ND	(3.6)	[355.745]	ND	(0.36)	[35.753]	ND	(0.36)	[35.676]
Endosulfan II	ND	(10)	[341.297]	ND	(11)	[355.745]	ND	(1.1)	[35.753]	ND	(1.1)	[35.676]
Endosulfan Sulfate	ND	(17)	[341.297]	ND	(18)	[355.745]	ND	(1.8)	[35.753]	ND	(1.8)	[35.676]
Endrin	ND	(3.4)	[341.297]	ND	(3.6)	[355.745]	ND	(0.36)	[35.753]	ND	(0.36)	[35.676]
Endrin Aldehyde	ND	(6.8)	[341.297]	ND	(7.1)	[355.745]	ND	(0.72)	[35.753]	ND	(0.71)	[35.676]
Endrin Ketone	ND	(17)	[341.297]	ND	(18)	[355.745]	ND	(1.8)	[35.753]	ND	(1.8)	[35.676]
Heptachlor	ND	(3.4)	[341.297]	ND	(3.6)	[355.745]	ND	(0.36)	[35.753]	ND	(0.36)	[35.676]
Heptachlor epoxide	ND	(3.4)	[341.297]	ND	(3.6)	[355.745]	ND	(0.36)	[35.753]	ND	(0.36)	[35.676]
Methoxychlor	ND	(17)	[341.297]	ND	(18)	[355.745]	ND	(1.8)	[35.753]	ND	(1.8)	[35.676]
PCB-1016	ND	(34)	[341.297]	ND	(36)	[355.745]	ND	(3.6)	[35.753]	ND	(3.6)	[35.676]
PCB-1221	ND	(68)	[341.297]	ND	(71)	[355.745]	ND	(7.2)	[35.753]	ND	(7.1)	[35.676]

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TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID											
	LOCATION ID											
	SAMPLE ID											
	BEG. DEPTH - END DEPTH (FT.)											
	NONE			NONE			NONE			NONE		
	13			14			14			14		
	CAN97-13-99 Dup of CAN97-13-S			CAN97-14-01			CAN97-14-02			CAN97-14-99 Dup of CAN97-14-02		
	0 - 2			0 - 2			4 - 6			4 - 6		
PCB-1232	ND	(68)	[341.297]	ND	(71)	[355.745]	ND	(7.2)	[35.753]	ND	(7.1)	[35.676]
PCB-1242	ND	(34)	[341.297]	ND	(36)	[355.745]	ND	(3.6)	[35.753]	ND	(3.6)	[35.676]
PCB-1248	ND	(34)	[341.297]	ND	(36)	[355.745]	ND	(3.6)	[35.753]	ND	(3.6)	[35.676]
PCB-1254	ND	(68)	[341.297]	ND	(71)	[355.745]	ND	(7.2)	[35.753]	ND	(7.1)	[35.676]
PCB-1260	ND	(68)	[341.297]	ND	(71)	[355.745]	ND	(7.2)	[35.753]	ND	(7.1)	[35.676]
Toxaphene	ND	(170)	[341.297]	ND	(180)	[355.745]	ND	(18)	[35.753]	ND	(18)	[35.676]
alpha-BHC	ND	(3.4)	[341.297]	ND	(3.6)	[355.745]	ND	(0.36)	[35.753]	ND	(0.36)	[35.676]
beta-BHC	ND	(3.4)	[341.297]	ND	(3.6)	[355.745]	ND	(0.36)	[35.753]	ND	(0.36)	[35.676]
delta-BHC	ND	(3.4)	[341.297]	ND	(3.6)	[355.745]	ND	(0.36)	[35.753]	ND	(0.36)	[35.676]
gamma-BHC	1.6 J	(3.4)	[341.297]	ND	(3.6)	[355.745]	ND	(0.36)	[35.753]	ND	(0.36)	[35.676]
SW8150 - Chlorinated Herbicides (ug/kg)												
2,4,5-T	NA			NA			ND	(7.1)	[35.638]	ND	(7.1)	[35.549]
2,4,5-TP (Silvex)	NA			NA			ND	(6.1)	[35.638]	ND	(6)	[35.549]
2,4-D	NA			NA			ND	(43)	[35.638]	ND	(43)	[35.549]
2,4-DB	NA			NA			ND	(32)	[35.638]	ND	(32)	[35.549]
Dalapon	NA			NA			ND	(210)	[35.638]	ND	(210)	[35.549]
Dicamba	NA			NA			ND	(9.6)	[35.638]	ND	(9.6)	[35.549]
Dichloroprop	NA			NA			3.8 J	(23)	[35.638]	ND	(23)	[35.549]
Dinoseb	NA			NA			ND	(5.3)	[35.638]	ND	(5.3)	[35.549]
MCPA	NA			NA			ND	(8900)	[35.638]	ND	(8900)	[35.549]
MCPP	NA			NA			ND	(6800)	[35.638]	ND	(6800)	[35.549]
SW8240 - Volatile Organics (ug/kg)												
1,1,1-Trichloroethane	ND	(5.1)	[1.025]	ND	(5.3)	[1.067]	ND	(5.4)	[1.073]	ND	(5.3)	[1.069]
1,1,2,2-Tetrachloroethane	ND	(5.1)	[1.025]	ND	(5.3)	[1.067]	ND	(5.4)	[1.073]	ND	(5.3)	[1.069]
1,1,2-Trichloroethane	ND	(5.1)	[1.025]	ND	(5.3)	[1.067]	ND	(5.4)	[1.073]	ND	(5.3)	[1.069]
1,1-Dichloroethane	ND	(5.1)	[1.025]	ND	(5.3)	[1.067]	ND	(5.4)	[1.073]	ND	(5.3)	[1.069]
1,1-Dichloroethene	ND	(5.1)	[1.025]	ND	(5.3)	[1.067]	ND	(5.4)	[1.073]	ND	(5.3)	[1.069]
1,2,3-Trichloropropane	ND	(5.1)	[1.025]	ND	(5.3)	[1.067]	ND	(5.4)	[1.073]	ND	(5.3)	[1.069]
1,2-Dichloroethane	ND	(5.1)	[1.025]	ND	(5.3)	[1.067]	ND	(5.4)	[1.073]	ND	(5.3)	[1.069]

Compiled: 8 Fe 1994 () = Reporting Limit [] = Factor = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID											
	LOCATION ID											
	SAMPLE ID											
	BEG. DEPTH - END DEPTH (FT.)											
	NONE			NONE			NONE			NONE		
	13			14			14			14		
	CAN97-13-99 Dup of CAN97-13-S			CAN97-14-01			CAN97-14-02			CAN97-14-99 Dup of CAN97-14-02		
	0 - 2			0 - 2			4 - 6			4 - 6		
1,2-Dichloropropane	ND	(5.1)	[1.025]	ND	(5.3)	[1.067]	ND	(5.4)	[1.073]	ND	(5.3)	[1.069]
2-Chloroethyl vinyl ether	ND	(10)	[1.025]	ND	(11)	[1.067]	ND	(11)	[1.073]	ND	(11)	[1.069]
2-Hexanone	ND	(51)	[1.025]	ND	(53)	[1.067]	ND	(54)	[1.073]	ND	(53)	[1.069]
4-Methyl-2-pentanone(MIBK)	ND	(51)	[1.025]	ND	(53)	[1.067]	ND	(54)	[1.073]	ND	(53)	[1.069]
Acetone	34 J	(100)	[1.025]	ND	(110)	[1.067]	ND	(110)	[1.073]	ND	(110)	[1.069]
Acrolein	ND	(77)	[1.025]	ND	(80)	[1.067]	ND	(80)	[1.073]	ND	(80)	[1.069]
Acrylonitrile	ND	(51)	[1.025]	ND	(53)	[1.067]	ND	(54)	[1.073]	ND	(53)	[1.069]
Benzene	3.8 J	(5.1)	[1.025]	ND	(5.3)	[1.067]	ND	(5.4)	[1.073]	ND	(5.3)	[1.069]
Bromodichloromethane	ND	(5.1)	[1.025]	ND	(5.3)	[1.067]	ND	(5.4)	[1.073]	ND	(5.3)	[1.069]
Bromomethane	ND	(10)	[1.025]	ND	(11)	[1.067]	ND	(11)	[1.073]	ND	(11)	[1.069]
Carbon disulfide	ND	(5.1)	[1.025]	ND	(5.3)	[1.067]	ND	(5.4)	[1.073]	ND	(5.3)	[1.069]
Carbon tetrachloride	ND	(5.1)	[1.025]	ND	(5.3)	[1.067]	ND	(5.4)	[1.073]	ND	(5.3)	[1.069]
Chlorobenzene	ND	(5.1)	[1.025]	ND	(5.3)	[1.067]	ND	(5.4)	[1.073]	ND	(5.3)	[1.069]
Chloroethane	ND	(10)	[1.025]	ND	(11)	[1.067]	ND	(11)	[1.073]	ND	(11)	[1.069]
Chloroform	ND	(5.1)	[1.025]	ND	(5.3)	[1.067]	ND	(5.4)	[1.073]	ND	(5.3)	[1.069]
Chloromethane	ND	(10)	[1.025]	ND	(11)	[1.067]	ND	(11)	[1.073]	ND	(11)	[1.069]
Dibromochloromethane	ND	(5.1)	[1.025]	ND	(5.3)	[1.067]	ND	(5.4)	[1.073]	ND	(5.3)	[1.069]
Dibromomethane	ND	(5.1)	[1.025]	ND	(5.3)	[1.067]	ND	(5.4)	[1.073]	ND	(5.3)	[1.069]
Dichlorodifluoromethane	ND	(20)	[1.025]	ND	(21)	[1.067]	ND	(21)	[1.073]	ND	(21)	[1.069]
Ethyl benzene	ND	(5.1)	[1.025]	ND	(5.3)	[1.067]	ND	(5.4)	[1.073]	ND	(5.3)	[1.069]
Ethyl methacrylate	ND	(15)	[1.025]	ND	(16)	[1.067]	ND	(16)	[1.073]	ND	(16)	[1.069]
Iodomethane	ND	(5.1)	[1.025]	ND	(5.3)	[1.067]	ND	(5.4)	[1.073]	ND	(5.3)	[1.069]
Methyl ethyl ketone	ND	(100)	[1.025]	ND	(110)	[1.067]	ND	(110)	[1.073]	ND	(110)	[1.069]
Methylene chloride	7.1 B	(5.1)	[1.025]	ND	(5.3)	[1.067]	ND	(5.4)	[1.073]	ND	(5.3)	[1.069]
Styrene	ND	(5.1)	[1.025]	ND	(5.3)	[1.067]	ND	(5.4)	[1.073]	ND	(5.3)	[1.069]
Tetrachloroethene	ND	(5.1)	[1.025]	ND	(5.3)	[1.067]	ND	(5.4)	[1.073]	ND	(5.3)	[1.069]
Toluene	36	(5.1)	[1.025]	30	(5.3)	[1.067]	ND	(5.4)	[1.073]	ND	(5.3)	[1.069]
Tribromomethane(Bromoform)	ND	(5.1)	[1.025]	ND	(5.3)	[1.067]	ND	(5.4)	[1.073]	ND	(5.3)	[1.069]
Trichloroethene	ND	(5.1)	[1.025]	ND	(5.3)	[1.067]	ND	(5.4)	[1.073]	ND	(5.3)	[1.069]

Compiled: 8 February 1994 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID	LOCATION ID	SAMPLE ID	BEG. DEPTH - END DEPTH (FT.)												
	NONE	13	CAN97-13-99 Dup of CAN97-13-5	0 - 2			NONE	14	CAN97-14-01	0 - 2			NONE	14	CAN97-14-02	4 - 6			NONE	14	CAN97-14-99 Dup of CAN97-14-02	4 - 6		
Trichlorofluoromethane	ND	(10)	[1.025]				ND	(11)	[1.067]				ND	(11)	[1.073]				ND	(11)	[1.069]			
Vinyl acetate	ND	(5.1)	[1.025]				ND	(5.3)	[1.067]				ND	(5.4)	[1.073]				ND	(5.3)	[1.069]			
Vinyl chloride	ND	(10)	[1.025]				ND	(11)	[1.067]				ND	(11)	[1.073]				ND	(11)	[1.069]			
Xylenes	2.6 J	(5.1)	[1.025]				4.1 J	(5.3)	[1.067]				ND	(5.4)	[1.073]				ND	(5.3)	[1.069]			
cis-1,3-Dichloropropene	ND	(5.1)	[1.025]				ND	(5.3)	[1.067]				ND	(5.4)	[1.073]				ND	(5.3)	[1.069]			
trans-1,2-Dichloroethene	ND	(5.1)	[1.025]				ND	(5.3)	[1.067]				ND	(5.4)	[1.073]				ND	(5.3)	[1.069]			
trans-1,3-Dichloropropene	ND	(5.1)	[1.025]				ND	(5.3)	[1.067]				ND	(5.4)	[1.073]				ND	(5.3)	[1.069]			
trans-1,4-Dichloro-2-butene	ND	(10)	[1.025]				ND	(11)	[1.067]				ND	(11)	[1.073]				ND	(11)	[1.069]			
SW8270 - Semivolatile Organics (ug/kg)																								
1,2,4,5-Tetrachlorobenzene	ND	(340)	[.034]				ND	(360)	[.036]				ND	(360)	[.036]				ND	(360)	[.036]			
1,2,4-Trichlorobenzene	ND	(340)	[.034]				ND	(360)	[.036]				ND	(360)	[.036]				ND	(360)	[.036]			
1,2-Dichlorobenzene	ND	(340)	[.034]				ND	(360)	[.036]				ND	(360)	[.036]				ND	(360)	[.036]			
1,2-Diphenylhydrazine	ND	(340)	[.034]				ND	(360)	[.036]				ND	(360)	[.036]				ND	(360)	[.036]			
1,3-Dichlorobenzene	ND	(340)	[.034]				ND	(360)	[.036]				ND	(360)	[.036]				ND	(360)	[.036]			
1,4-Dichlorobenzene	ND	(340)	[.034]				ND	(360)	[.036]				ND	(360)	[.036]				ND	(360)	[.036]			
1-Chloronaphthalene	ND	(340)	[.034]				ND	(360)	[.036]				ND	(360)	[.036]				ND	(360)	[.036]			
1-Naphthylamine	ND	(340)	[.034]				ND	(360)	[.036]				ND	(360)	[.036]				ND	(360)	[.036]			
2,3,4,6-Tetrachlorophenol	ND	(340)	[.034]				ND	(710)	[.036]				ND	(710)	[.036]				ND	(710)	[.036]			
2,4,5-Trichlorophenol	ND	(340)	[.034]				ND	(360)	[.036]				ND	(360)	[.036]				ND	(360)	[.036]			
2,4,6-Trichlorophenol	ND	(340)	[.034]				ND	(360)	[.036]				ND	(360)	[.036]				ND	(360)	[.036]			
2,4-Dichlorophenol	ND	(340)	[.034]				ND	(360)	[.036]				ND	(360)	[.036]				ND	(360)	[.036]			
2,4-Dimethylphenol	ND	(340)	[.034]				ND	(360)	[.036]				ND	(360)	[.036]				ND	(360)	[.036]			
2,4-Dinitrophenol	ND	(680)	[.034]				ND	(1800)	[.036]				ND	(1800)	[.036]				ND	(1800)	[.036]			
2,4-Dinitrotoluene	ND	(340)	[.034]				ND	(360)	[.036]				ND	(360)	[.036]				ND	(360)	[.036]			
2,6-Dichlorophenol	ND	(340)	[.034]				ND	(360)	[.036]				ND	(360)	[.036]				ND	(360)	[.036]			
2,6-Dinitrotoluene	ND	(340)	[.034]				ND	(360)	[.036]				ND	(360)	[.036]				ND	(360)	[.036]			
2-Chloronaphthalene	ND	(340)	[.034]				ND	(360)	[.036]				ND	(360)	[.036]				ND	(360)	[.036]			
2-Chlorophenol	ND	(340)	[.034]				ND	(360)	[.036]				ND	(360)	[.036]				ND	(360)	[.036]			
2-Methylnaphthalene	27 J	(340)	[.034]				ND	(360)	[.036]				ND	(360)	[.036]				ND	(360)	[.036]			

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TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

	SITE ID											
	LOCATION ID											
	SAMPLE ID											
	BEG. DEPTH - END DEPTH (FT.)											
PARAMETER	NONE			NONE			NONE			NONE		
	13			14			14			14		
	CAN97-13-99 Dup of CAN97-13-S			CAN97-14-01			CAN97-14-02			CAN97-14-99 Dup of CAN97-14-02		
	0 - 2			0 - 2			4 - 6			4 - 6		
2-Methylphenol(o-cresol)	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.036]	ND	(360)	[.036]
2-Naphthylamine	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.036]	ND	(360)	[.036]
2-Nitroaniline	ND	(340)	[.034]	ND	(1800)	[.036]	ND	(1800)	[.036]	ND	(1800)	[.036]
2-Nitrophenol	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.036]	ND	(360)	[.036]
2-Picoline	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.036]	ND	(360)	[.036]
3,3'-Dichlorobenzidine	ND	(340)	[.034]	ND	(710)	[.036]	ND	(710)	[.036]	ND	(710)	[.036]
3-Methylcholanthrene	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.036]	ND	(360)	[.036]
3-Nitroaniline	ND	(680)	[.034]	ND	(1800)	[.036]	ND	(1800)	[.036]	ND	(1800)	[.036]
4,6-Dinitro-2-methylphenol	ND	(340)	[.034]	ND	(1800)	[.036]	ND	(1800)	[.036]	ND	(1800)	[.036]
4-Aminobiphenyl	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.036]	ND	(360)	[.036]
4-Bromophenyl phenyl ether	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.036]	ND	(360)	[.036]
4-Chloro-3-methylphenol	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.036]	ND	(360)	[.036]
4-Chlorophenyl phenyl ether	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.036]	ND	(360)	[.036]
4-Methylphenol(p-cresol)	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.036]	ND	(360)	[.036]
4-Nitroaniline	ND	(680)	[.034]	ND	(1800)	[.036]	ND	(1800)	[.036]	ND	(1800)	[.036]
4-Nitrophenol	ND	(340)	[.034]	ND	(1800)	[.036]	ND	(1800)	[.036]	ND	(1800)	[.036]
7,12-Dimethylbenz(a)anthracene	ND	(340)	[.034]	ND	(890)	[.036]	ND	(890)	[.036]	ND	(890)	[.036]
Acenaphthene	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.036]	ND	(360)	[.036]
Acenaphthylene	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.036]	ND	(360)	[.036]
Acetophenone	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.036]	ND	(360)	[.036]
Aniline	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.036]	ND	(360)	[.036]
Anthracene	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.036]	ND	(360)	[.036]
Benzidine	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.036]	ND	(360)	[.036]
Benzo(a)anthracene	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.036]	ND	(360)	[.036]
Benzo(a)pyrene	4.1 J	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.036]	ND	(360)	[.036]
Benzo(b)fluoranthene	11 JX	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.036]	ND	(360)	[.036]
Benzo(g,h,i)perylene	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.036]	ND	(360)	[.036]
Benzo(k)fluoranthene	11 JX	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.036]	ND	(360)	[.036]
Benzoic acid	ND	(1700)	[.034]	ND	(1800)	[.036]	ND	(1800)	[.036]	ND	(1800)	[.036]

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TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

	SITE ID											
	LOCATION ID											
	SAMPLE ID											
	BEG. DEPTH - END DEPTH (FT.)											
	NONE			NONE			NONE			NONE		
	13			14			14			14		
	CAN97-13-99 Dup of CAN97-13-S			CAN97-14-01			CAN97-14-02			CAN97-14-99 Dup of CAN97-14-02		
PARAMETER	0 - 2			0 - 2			4 - 6			4 - 6		
Benzyl alcohol	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.036]	ND	(360)	[.036]
Butylbenzylphthalate	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.036]	ND	(360)	[.036]
Chrysene	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.036]	ND	(360)	[.036]
Cyclohexenol	380	(0)	[.034]	NA			NA			NA		
Di-n-octylphthalate	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.036]	ND	(360)	[.036]
Dibenz(a,h)anthracene	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.036]	ND	(360)	[.036]
Dibenz(a,j)acridine	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.036]	ND	(360)	[.036]
Dibenzofuran	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.036]	ND	(360)	[.036]
Dibutylphthalate	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.036]	ND	(360)	[.036]
Diethylphthalate	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.036]	ND	(360)	[.036]
Dimethylphenethylamine	ND	(4100)	[.034]	ND	(360)	[.036]	ND	(360)	[.036]	ND	(360)	[.036]
Dimethylphthalate	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.036]	ND	(360)	[.036]
Diphenylamine	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.036]	ND	(360)	[.036]
Ethyl methanesulfonate	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.036]	ND	(360)	[.036]
Fluoranthene	8.4 J	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.036]	ND	(360)	[.036]
Fluorene	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.036]	ND	(360)	[.036]
Hexachlorobenzene	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.036]	ND	(360)	[.036]
Hexachlorobutadiene	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.036]	ND	(360)	[.036]
Hexachlorocyclopentadiene	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.036]	ND	(360)	[.036]
Hexachloroethane	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.036]	ND	(360)	[.036]
Indeno(1,2,3-cd)pyrene	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.036]	ND	(360)	[.036]
Isophorone	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.036]	ND	(360)	[.036]
Methyl methanesulfonate	ND	(1700)	[.034]	ND	(360)	[.036]	ND	(360)	[.036]	ND	(360)	[.036]
N-Nitroso-di-n-butylamine	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.036]	ND	(360)	[.036]
N-Nitrosodimethylamine	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.036]	ND	(360)	[.036]
N-Nitrosodiphenylamine	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.036]	ND	(360)	[.036]
N-Nitrosodipropylamine	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.036]	ND	(360)	[.036]
N-Nitrosopiperidine	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.036]	ND	(360)	[.036]
Naphthalene	20 J	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.036]	ND	(360)	[.036]

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TABLE B1

RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID	LOCATION ID	SAMPLE ID	BEG. DEPTH - END DEPTH (FT.)												
	NONE	13	CAN97-13-99 Dup of CAN97-13-S	0 - 2			NONE	14	CAN97-14-01	0 - 2			NONE	14	CAN97-14-02	4 - 6			NONE	14	CAN97-14-99 Dup of CAN97-14-02	4 - 6		
Nitrobenzene	ND	(340)	[.034]				ND	(360)	[.036]				ND	(360)	[.036]				ND	(360)	[.036]			
Pentachlorobenzene	ND	(340)	[.034]				ND	(360)	[.036]				ND	(360)	[.036]				ND	(360)	[.036]			
Pentachloronitrobenzene	ND	(340)	[.034]				ND	(360)	[.036]				ND	(360)	[.036]				ND	(360)	[.036]			
Pentachlorophenol	ND	(340)	[.034]				ND	(1800)	[.036]				ND	(1800)	[.036]				ND	(1800)	[.036]			
Phenacetin	ND	(340)	[.034]				ND	(360)	[.036]				ND	(360)	[.036]				ND	(360)	[.036]			
Phenanthrene	9.4 J	(340)	[.034]				ND	(360)	[.036]				ND	(360)	[.036]				ND	(360)	[.036]			
Phenol	ND	(340)	[.034]				ND	(360)	[.036]				ND	(360)	[.036]				ND	(360)	[.036]			
Pronamide	ND	(340)	[.034]				ND	(360)	[.036]				ND	(360)	[.036]				ND	(360)	[.036]			
Pyrene	7.9 J	(340)	[.034]				ND	(360)	[.036]				ND	(360)	[.036]				ND	(360)	[.036]			
Pyridine	ND	(340)	[.034]				ND	(360)	[.036]				ND	(360)	[.036]				ND	(360)	[.036]			
Unknown	1200	(0)	[.034]				460	(0)	[.036]				570	(0)	[.036]				140	(0)	[.036]			
Unknown B	820	(0)	[.034]				NA						NA						NA					
Unknown aldehyde	NA						210	(0)	[.036]				NA						NA					
Unknown alkane	170	(0)	[.034]				140	(0)	[.036]				NA						NA					
Unknown carboxylic acid	650	(0)	[.034]				250	(0)	[.036]				NA						NA					
Unknown cyclic ether	NA						NA						NA						250	(0)	[.036]			
bis(2-Chloroethoxy)methane	ND	(340)	[.034]				ND	(360)	[.036]				ND	(360)	[.036]				ND	(360)	[.036]			
bis(2-Chloroethyl)ether	ND	(340)	[.034]				ND	(360)	[.036]				ND	(360)	[.036]				ND	(360)	[.036]			
bis(2-Chloroisopropyl)ether	ND	(340)	[.034]				ND	(360)	[.036]				ND	(360)	[.036]				ND	(360)	[.036]			
bis(2-Ethylhexyl)phthalate	ND	(340)	[.034]				42 JB	(360)	[.036]				ND	(360)	[.036]				ND	(360)	[.036]			
p-Chloroaniline	ND	(340)	[.034]				ND	(360)	[.036]				ND	(360)	[.036]				ND	(360)	[.036]			
p-Dimethylaminoazobenzene	ND	(340)	[.034]				ND	(360)	[.036]				ND	(360)	[.036]				ND	(360)	[.036]			

Compiled: 8 February 1994

() = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B1

RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 14 CAN97-14-03 9 - 11			NONE 14 CAN97-14-04 14 - 16			NONE 14 CAN97-14-05 19 - 21			NONE 14 CAN97-14-06 24 - 26		
EPA 418.1 - Total Recoverable Petroleum Hydrocarbons (mg/kg)												
Hydrocarbons	17 @	(27)	[5.314]	21 @	(28)	[5.519]	9.1 @	(28)	[5.682]	11 @	(26)	[5.280]
SW8015 - Total Petroleum Hydrocarbons (ug/kg)												
Benzene (2)	NA			NA			NA			ND	(32)	[108.000]
Diesel (2)	NA			NA			NA			9400 GB@	(5200)	[105.000]
Ethylbenzene (2)	NA			NA			NA			ND	(32)	[105.000]
Gasoline (2)	NA			NA			NA			ND	(5400)	[108.000]
Jet fuel (2)	NA			NA			NA			ND	(10000)	[105.000]
Kerosene (2)	NA			NA			NA			ND	(10000)	[105.000]
Toluene (2)	NA			NA			NA			ND	(32)	[108.000]
Xylenes (total) (2)	NA			NA			NA			ND	(54)	[108.000]
SW8080 - Organochlorine Pesticides and PCBs (ug/kg)												
4,4'-DDD	0.76 @	(0.35)	[35.423]	ND	(0.37)	[36.792]	ND	(0.38)	[37.922]	ND	(0.35)	[35.199]
4,4'-DDE	ND	(0.35)	[35.423]	ND	(0.37)	[36.792]	ND	(0.38)	[37.922]	ND	(0.35)	[35.199]
4,4'-DDT	ND	(0.71)	[35.423]	ND	(0.74)	[36.792]	ND	(0.76)	[37.922]	ND	(0.7)	[35.199]
Aldrin	ND	(0.35)	[35.423]	ND	(0.37)	[36.792]	ND	(0.38)	[37.922]	ND	(0.35)	[35.199]
Chlordane	ND	(1.8)	[35.423]	ND	(1.8)	[36.792]	ND	(1.9)	[37.922]	ND	(1.8)	[35.199]
Dieldrin	ND	(0.35)	[35.423]	ND	(0.37)	[36.792]	ND	(0.38)	[37.922]	ND	(0.35)	[35.199]
Endosulfan I	ND	(0.35)	[35.423]	ND	(0.37)	[36.792]	ND	(0.38)	[37.922]	ND	(0.35)	[35.199]
Endosulfan II	ND	(1.1)	[35.423]	ND	(1.1)	[36.792]	ND	(1.1)	[37.922]	ND	(1.1)	[35.199]
Endosulfan Sulfate	ND	(1.8)	[35.423]	ND	(1.8)	[36.792]	ND	(1.9)	[37.922]	ND	(1.8)	[35.199]
Endrin	0.54 @	(0.35)	[35.423]	ND	(0.37)	[36.792]	ND	(0.38)	[37.922]	ND	(0.35)	[35.199]
Endrin Aldehyde	ND	(0.71)	[35.423]	ND	(0.74)	[36.792]	ND	(0.76)	[37.922]	ND	(0.7)	[35.199]
Endrin Ketone	ND	(1.8)	[35.423]	ND	(1.8)	[36.792]	ND	(1.9)	[37.922]	ND	(1.8)	[35.199]
Heptachlor	0.45 @	(0.35)	[35.423]	ND	(0.37)	[36.792]	ND	(0.38)	[37.922]	ND	(0.35)	[35.199]
Heptachlor epoxide	ND	(0.35)	[35.423]	ND	(0.37)	[36.792]	ND	(0.38)	[37.922]	ND	(0.35)	[35.199]
Methoxychlor	ND	(1.8)	[35.423]	ND	(1.8)	[36.792]	ND	(1.9)	[37.922]	ND	(1.8)	[35.199]
PCB-1016	ND	(3.5)	[35.423]	ND	(3.7)	[36.792]	ND	(3.8)	[37.922]	ND	(3.5)	[35.199]
PCB-1221	ND	(7.1)	[35.423]	ND	(7.4)	[36.792]	ND	(7.6)	[37.922]	ND	(7)	[35.199]

Compiled: 8 Fe y 1994 () = Reporting Limit [] = Factor = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID	LOCATION ID	SAMPLE ID	BEG. DEPTH - END DEPTH (FT.)										
	NONE	14	CAN97-14-03	9 - 11			NONE	14	CAN97-14-04	14 - 16			NONE	14	CAN97-14-05	19 - 21			NONE	14	CAN97-14-06	24 - 26		
PCB-1232	ND		(7.1)	[35.423]	ND		(7.4)	[36.792]	ND		(7.6)	[37.922]	ND		(7)	[35.199]
PCB-1242	ND		(3.5)	[35.423]	ND		(3.7)	[36.792]	ND		(3.8)	[37.922]	ND		(3.5)	[35.199]
PCB-1248	ND		(3.5)	[35.423]	ND		(3.7)	[36.792]	ND		(3.8)	[37.922]	ND		(3.5)	[35.199]
PCB-1254	ND		(7.1)	[35.423]	ND		(7.4)	[36.792]	ND		(7.6)	[37.922]	ND		(7)	[35.199]
PCB-1260	ND		(7.1)	[35.423]	ND		(7.4)	[36.792]	ND		(7.6)	[37.922]	ND		(7)	[35.199]
Toxaphene	ND		(18)	[35.423]	ND		(18)	[36.792]	ND		(19)	[37.922]	ND		(18)	[35.199]
alpha-BHC	ND		(0.35)	[35.423]	ND		(0.37)	[36.792]	ND		(0.38)	[37.922]	ND		(0.35)	[35.199]
beta-BHC	ND		(0.35)	[35.423]	ND		(0.37)	[36.792]	ND		(0.38)	[37.922]	ND		(0.35)	[35.199]
delta-BHC	0.82	B	(0.35)	[35.423]	ND		(0.37)	[36.792]	ND		(0.38)	[37.922]	ND		(0.35)	[35.199]
gamma-BHC	ND		(0.35)	[35.423]	ND		(0.37)	[36.792]	ND		(0.38)	[37.922]	ND		(0.35)	[35.199]
SW8150 - Chlorinated Herbicides (ug/kg)																
2,4,5-T	NA				NA				NA				ND		(7)	[35.149]
2,4,5-TP (Silvex)	NA				NA				NA				ND		(6)	[35.149]
2,4-D	NA				NA				NA				ND		(42)	[35.149]
2,4-DB	NA				NA				NA				ND		(32)	[35.149]
Dalapon	NA				NA				NA				ND		(200)	[35.149]
Dicamba	NA				NA				NA				ND		(9.5)	[35.149]
Dichloroprop	NA				NA				NA				4.2	J	(23)	[35.149]
Dinoseb	NA				NA				NA				ND		(5.3)	[35.149]
MCPA	NA				NA				NA				ND		(8800)	[35.149]
MCPP	NA				NA				NA				ND		(6700)	[35.149]
SW8240 - Volatile Organics (ug/kg)																
1,1,1-Trichloroethane	ND		(5.3)	[1.063]	ND		(5.5)	[1.104]	ND		(5.7)	[1.138]	ND		(5.3)	[1.056]
1,1,2,2-Tetrachloroethane	ND		(5.3)	[1.063]	ND		(5.5)	[1.104]	ND		(5.7)	[1.138]	ND		(5.3)	[1.056]
1,1,2-Trichloroethane	ND		(5.3)	[1.063]	ND		(5.5)	[1.104]	ND		(5.7)	[1.138]	ND		(5.3)	[1.056]
1,1-Dichloroethane	ND		(5.3)	[1.063]	ND		(5.5)	[1.104]	ND		(5.7)	[1.138]	ND		(5.3)	[1.056]
1,1-Dichloroethene	ND		(5.3)	[1.063]	ND		(5.5)	[1.104]	ND		(5.7)	[1.138]	ND		(5.3)	[1.056]
1,2,3-Trichloropropane	ND		(5.3)	[1.063]	ND		(5.5)	[1.104]	ND		(5.7)	[1.138]	ND		(5.3)	[1.056]
1,2-Dichloroethane	ND		(5.3)	[1.063]	ND		(5.5)	[1.104]	ND		(5.7)	[1.138]	ND		(5.3)	[1.056]

Compiled: 8 February 1994 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B1 RE... GANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	NONE 14 CAN97-14-03 9 - 11			NONE 14 CAN97-14-04 14 - 16			NONE 14 CAN97-14-05 19 - 21			NONE 14 CAN97-14-06 24 - 26		
1,2-Dichloropropane	ND	(5.3)	[1.063]	ND	(5.5)	[1.104]	ND	(5.7)	[1.138]	ND	(5.3)	[1.056]
2-Chloroethyl vinyl ether	ND	(11)	[1.063]	ND	(11)	[1.104]	ND	(11)	[1.138]	ND	(11)	[1.056]
2-Hexanone	ND	(53)	[1.063]	ND	(55)	[1.104]	ND	(57)	[1.138]	ND	(53)	[1.056]
4-Methyl-2-pentanone(MIBK)	ND	(53)	[1.063]	ND	(55)	[1.104]	ND	(57)	[1.138]	ND	(53)	[1.056]
Acetone	ND	(110)	[1.063]	ND	(110)	[1.104]	ND	(110)	[1.138]	26 J	(110)	[1.056]
Acrolein	ND	(80)	[1.063]	ND	(83)	[1.104]	ND	(85)	[1.138]	ND	(79)	[1.056]
Acrylonitrile	ND	(53)	[1.063]	ND	(55)	[1.104]	ND	(57)	[1.138]	ND	(53)	[1.056]
Benzene	ND	(5.3)	[1.063]	ND	(5.5)	[1.104]	ND	(5.7)	[1.138]	ND	(5.3)	[1.056]
Bromodichloromethane	ND	(5.3)	[1.063]	ND	(5.5)	[1.104]	ND	(5.7)	[1.138]	ND	(5.3)	[1.056]
Bromomethane	ND	(11)	[1.063]	ND	(11)	[1.104]	ND	(11)	[1.138]	ND	(11)	[1.056]
Carbon disulfide	ND	(5.3)	[1.063]	ND	(5.5)	[1.104]	ND	(5.7)	[1.138]	ND	(5.3)	[1.056]
Carbon tetrachloride	ND	(5.3)	[1.063]	ND	(5.5)	[1.104]	ND	(5.7)	[1.138]	ND	(5.3)	[1.056]
Chlorobenzene	ND	(5.3)	[1.063]	ND	(5.5)	[1.104]	ND	(5.7)	[1.138]	ND	(5.3)	[1.056]
Chloroethane	ND	(11)	[1.063]	ND	(11)	[1.104]	ND	(11)	[1.138]	ND	(11)	[1.056]
Chloroform	ND	(5.3)	[1.063]	ND	(5.5)	[1.104]	ND	(5.7)	[1.138]	ND	(5.3)	[1.056]
Chloromethane	ND	(11)	[1.063]	ND	(11)	[1.104]	ND	(11)	[1.138]	ND	(11)	[1.056]
Dibromochloromethane	ND	(5.3)	[1.063]	ND	(5.5)	[1.104]	ND	(5.7)	[1.138]	ND	(5.3)	[1.056]
Dibromomethane	ND	(5.3)	[1.063]	ND	(5.5)	[1.104]	ND	(5.7)	[1.138]	ND	(5.3)	[1.056]
Dichlorodifluoromethane	ND	(21)	[1.063]	ND	(22)	[1.104]	ND	(23)	[1.138]	ND	(21)	[1.056]
Ethyl acetate	NA			7.8	()	[1.104]	NA			8.6	()	[1.056]
Ethyl benzene	ND	(5.3)	[1.063]	ND	(5.5)	[1.104]	ND	(5.7)	[1.138]	ND	(5.3)	[1.056]
Ethyl methacrylate	ND	(16)	[1.063]	ND	(17)	[1.104]	ND	(17)	[1.138]	ND	(16)	[1.056]
Iodomethane	ND	(5.3)	[1.063]	ND	(5.5)	[1.104]	ND	(5.7)	[1.138]	ND	(5.3)	[1.056]
Methyl ethyl ketone	ND	(110)	[1.063]	ND	(110)	[1.104]	ND	(110)	[1.138]	ND	(110)	[1.056]
Methylene chloride	ND	(5.3)	[1.063]	ND	(5.5)	[1.104]	ND	(5.7)	[1.138]	ND	(5.3)	[1.056]
Styrene	ND	(5.3)	[1.063]	ND	(5.5)	[1.104]	ND	(5.7)	[1.138]	ND	(5.3)	[1.056]
Tetrachloroethene	ND	(5.3)	[1.063]	ND	(5.5)	[1.104]	ND	(5.7)	[1.138]	ND	(5.3)	[1.056]
Toluene	2.8 J	(5.3)	[1.063]	ND	(5.5)	[1.104]	ND	(5.7)	[1.138]	ND	(5.3)	[1.056]
Tribromomethane(Bromoform)	ND	(5.3)	[1.063]	ND	(5.5)	[1.104]	ND	(5.7)	[1.138]	ND	(5.3)	[1.056]

Compiled: 8 Fe... y 1994 () = Reporting Limit [] = Factor = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID				LOCATION ID				SAMPLE ID				BEG. DEPTH - END DEPTH (FT.)			
	NONE				NONE				NONE				NONE			
	14				14				14				14			
	CAN97-14-03				CAN97-14-04				CAN97-14-05				CAN97-14-06			
	9 - 11				14 - 16				19 - 21				24 - 26			
Trichloroethene	ND	(5.3)	[	1.063]	ND	(5.5)	[	1.104]	ND	(5.7)	[	1.138]	ND	(5.3)	[	1.056]
Trichlorofluoromethane	ND	(11)	[	1.063]	ND	(11)	[	1.104]	ND	(11)	[	1.138]	ND	(11)	[	1.056]
Vinyl acetate	ND	(5.3)	[	1.063]	ND	(5.5)	[	1.104]	ND	(5.7)	[	1.138]	ND	(5.3)	[	1.056]
Vinyl chloride	ND	(11)	[	1.063]	ND	(11)	[	1.104]	ND	(11)	[	1.138]	ND	(11)	[	1.056]
Xylenes	ND	(5.3)	[	1.063]	ND	(5.5)	[	1.104]	ND	(5.7)	[	1.138]	ND	(5.3)	[	1.056]
cis-1,3-Dichloropropene	ND	(5.3)	[	1.063]	ND	(5.5)	[	1.104]	ND	(5.7)	[	1.138]	ND	(5.3)	[	1.056]
trans-1,2-Dichloroethene	ND	(5.3)	[	1.063]	ND	(5.5)	[	1.104]	ND	(5.7)	[	1.138]	ND	(5.3)	[	1.056]
trans-1,3-Dichloropropene	ND	(5.3)	[	1.063]	ND	(5.5)	[	1.104]	ND	(5.7)	[	1.138]	ND	(5.3)	[	1.056]
trans-1,4-Dichloro-2-butene	ND	(11)	[	1.063]	ND	(11)	[	1.104]	ND	(11)	[	1.138]	ND	(11)	[	1.056]
SW8270 - Semivolatile Organics (ug/kg)																
1,2,4,5-Tetrachlorobenzene	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(350)	[	.035]
1,2,4-Trichlorobenzene	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(350)	[	.035]
1,2-Dichlorobenzene	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(350)	[	.035]
1,2-Diphenylhydrazine	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(350)	[	.035]
1,3-Dichlorobenzene	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(350)	[	.035]
1,4-Dichlorobenzene	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(350)	[	.035]
1-Chloronaphthalene	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(350)	[	.035]
1-Naphthylamine	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(350)	[	.035]
2,3,4,6-Tetrachlorophenol	ND	(710)	[	.035]	ND	(730)	[	.037]	ND	(760)	[	.038]	ND	(700)	[	.035]
2,4,5-Trichlorophenol	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(350)	[	.035]
2,4,6-Trichlorophenol	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(350)	[	.035]
2,4-Dichlorophenol	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(350)	[	.035]
2,4-Dimethylphenol	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(350)	[	.035]
2,4-Dinitrophenol	ND	(1800)	[	.035]	ND	(1800)	[	.037]	ND	(1900)	[	.038]	ND	(1800)	[	.035]
2,4-Dinitrotoluene	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(350)	[	.035]
2,6-Dichlorophenol	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(350)	[	.035]
2,6-Dinitrotoluene	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(350)	[	.035]
2-Chloronaphthalene	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(350)	[	.035]
2-Chlorophenol	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(350)	[	.035]

TABLE B1

RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

	SITE ID											
	LOCATION ID											
	SAMPLE ID											
	BEG. DEPTH - END DEPTH (FT.)											
PARAMETER	NONE 14 CAN97-14-03 9 - 11			NONE 14 CAN97-14-04 14 - 16			NONE 14 CAN97-14-05 19 - 21			NONE 14 CAN97-14-06 24 - 26		
2-Methylnaphthalene	ND	(350)	[.035]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(350)	[.035]
2-Methylphenol(o-cresol)	ND	(350)	[.035]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(350)	[.035]
2-Naphthylamine	ND	(350)	[.035]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(350)	[.035]
2-Nitroaniline	ND	(1800)	[.035]	ND	(1800)	[.037]	ND	(1900)	[.038]	ND	(1800)	[.035]
2-Nitrophenol	ND	(350)	[.035]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(350)	[.035]
2-Picoline	ND	(350)	[.035]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(350)	[.035]
3,3'-Dichlorobenzidine	ND	(710)	[.035]	ND	(730)	[.037]	ND	(760)	[.038]	ND	(700)	[.035]
3-Methylcholanthrene	ND	(350)	[.035]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(350)	[.035]
3-Nitroaniline	ND	(1800)	[.035]	ND	(1800)	[.037]	ND	(1900)	[.038]	ND	(1800)	[.035]
4,6-Dinitro-2-methylphenol	ND	(1800)	[.035]	ND	(1800)	[.037]	ND	(1900)	[.038]	ND	(1800)	[.035]
4-Aminobiphenyl	ND	(350)	[.035]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(350)	[.035]
4-Bromophenyl phenyl ether	ND	(350)	[.035]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(350)	[.035]
4-Chloro-3-methylphenol	ND	(350)	[.035]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(350)	[.035]
4-Chlorophenyl phenyl ether	ND	(350)	[.035]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(350)	[.035]
4-Methylphenol(p-cresol)	ND	(350)	[.035]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(350)	[.035]
4-Nitroaniline	ND	(1800)	[.035]	ND	(1800)	[.037]	ND	(1900)	[.038]	ND	(1800)	[.035]
4-Nitrophenol	ND	(1800)	[.035]	ND	(1800)	[.037]	ND	(1900)	[.038]	ND	(1800)	[.035]
7,12-Dimethylbenz(a)anthracene	ND	(880)	[.035]	ND	(920)	[.037]	ND	(950)	[.038]	ND	(880)	[.035]
Acenaphthene	ND	(350)	[.035]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(350)	[.035]
Acenaphthylene	ND	(350)	[.035]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(350)	[.035]
Acetophenone	ND	(350)	[.035]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(350)	[.035]
Aniline	ND	(350)	[.035]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(350)	[.035]
Anthracene	ND	(350)	[.035]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(350)	[.035]
Benzidine	ND	(350)	[.035]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(350)	[.035]
Benzo(a)anthracene	ND	(350)	[.035]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(350)	[.035]
Benzo(a)pyrene	ND	(350)	[.035]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(350)	[.035]
Benzo(b)fluoranthene	ND	(350)	[.035]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(350)	[.035]
Benzo(g,h,i)perylene	ND	(350)	[.035]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(350)	[.035]
Benzo(k)fluoranthene	ND	(350)	[.035]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(350)	[.035]

Compiled: 8 Feb , 1994

() = Reporting Limit [] = Factor = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)																
	NONE 14 CAN97-14-03 9 - 11				NONE 14 CAN97-14-04 14 - 16				NONE 14 CAN97-14-05 19 - 21				NONE 14 CAN97-14-06 24 - 26			
Benzoic acid	ND	(1800)	[	.035]	ND	(1800)	[	.037]	ND	(1900)	[	.038]	ND	(1800)	[	.035]
Benzyl alcohol	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(350)	[	.035]
Butylbenzylphthalate	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(350)	[	.035]
Chrysene	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(350)	[	.035]
Di-n-octylphthalate	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(350)	[	.035]
Dibenz(a,h)anthracene	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(350)	[	.035]
Dibenz(a,j)acridine	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(350)	[	.035]
Dibenzofuran	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(350)	[	.035]
Dibutylphthalate	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(350)	[	.035]
Diethylphthalate	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(350)	[	.035]
Dimethylphenethylamine	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(350)	[	.035]
Dimethylphthalate	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(350)	[	.035]
Diphenylamine	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(350)	[	.035]
Ethyl methanesulfonate	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(350)	[	.035]
Fluoranthene	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(350)	[	.035]
Fluorene	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(350)	[	.035]
Hexachlorobenzene	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(350)	[	.035]
Hexachlorobutadiene	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(350)	[	.035]
Hexachlorocyclopentadiene	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(350)	[	.035]
Hexachloroethane	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(350)	[	.035]
Indeno(1,2,3-cd)pyrene	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(350)	[	.035]
Isophorone	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(350)	[	.035]
Methyl methanesulfonate	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(350)	[	.035]
N-Nitroso-di-n-butylamine	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(350)	[	.035]
N-Nitrosodimethylamine	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(350)	[	.035]
N-Nitrosodiphenylamine	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(350)	[	.035]
N-Nitrosodipropylamine	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(350)	[	.035]
N-Nitrosopiperidine	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(350)	[	.035]
Naphthalene	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(350)	[	.035]

TABLE B1

RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 14 CAN97-14-03 9 - 11			NONE 14 CAN97-14-04 14 - 16			NONE 14 CAN97-14-05 19 - 21			NONE 14 CAN97-14-06 24 - 26		
Nitrobenzene	ND	(350)	[.035]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(350)	[.035]
Pentachlorobenzene	ND	(350)	[.035]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(350)	[.035]
Pentachloronitrobenzene	ND	(350)	[.035]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(350)	[.035]
Pentachlorophenol	ND	(1800)	[.035]	ND	(1800)	[.037]	ND	(1900)	[.038]	ND	(1800)	[.035]
Phenacetin	ND	(350)	[.035]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(350)	[.035]
Phenanthrene	ND	(350)	[.035]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(350)	[.035]
Phenol	ND	(350)	[.035]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(350)	[.035]
Pronamide	ND	(350)	[.035]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(350)	[.035]
Pyrene	ND	(350)	[.035]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(350)	[.035]
Pyridine	ND	(350)	[.035]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(350)	[.035]
Unknown	NA			NA			260	(0)	[.038]	140	(0)	[.035]
Unknown cyclic ether	NA			220	(0)	[.037]	260	(0)	[.038]	NA		
bis(2-Chloroethoxy)methane	ND	(350)	[.035]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(350)	[.035]
bis(2-Chloroethyl)ether	ND	(350)	[.035]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(350)	[.035]
bis(2-Chloroisopropyl)ether	ND	(350)	[.035]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(350)	[.035]
bis(2-Ethylhexyl)phthalate	ND	(350)	[.035]	ND	(370)	[.037]	75 JB	(380)	[.038]	ND	(350)	[.035]
p-Chloroaniline	ND	(350)	[.035]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(350)	[.035]
p-Dimethylaminoazobenzene	ND	(350)	[.035]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(350)	[.035]

Compiled: 8 Feb 1994

() = Reporting Limit [] = Factor = Not Detected NA = Not Applicable

TABLE B1

RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 14 CAN97-14-07 29 - 31			NONE 14 CAN97-14-08 34 - 36			NONE 14 CAN97-14-09 39 - 41			NONE 14 CAN97-14-10 44 - 46		
EPA 418.1 - Total Recoverable Petroleum Hydrocarbons (mg/kg)												
Hydrocarbons	14 @	(27)	[5.382]	17 @	(26)	[5.203]	14 @	(26)	[5.263]	14 @	(27)	[5.331]
SW8015 - Total Petroleum Hydrocarbons (ug/kg)												
Benzene (2)	NA			ND	(31)	[104.000]	NA			NA		
Diesel (2)	NA			6900 GB@	(5200)	[104.000]	NA			NA		
Ethylbenzene (2)	NA			ND	(31)	[104.000]	NA			NA		
Gasoline (2)	NA			ND	(5200)	[104.000]	NA			NA		
Jet fuel (2)	NA			ND	(10000)	[104.000]	NA			NA		
Kerosene (2)	NA			ND	(10000)	[104.000]	NA			NA		
Toluene (2)	NA			ND	(31)	[104.000]	NA			NA		
Xylenes (total) (2)	NA			ND	(52)	[104.000]	NA			NA		
SW8080 - Organochlorine Pesticides and PCBs (ug/kg)												
4,4'-DDD	ND	(0.36)	[35.881]	ND	(0.35)	[34.698]	ND	(0.35)	[35.075]	ND	(0.36)	[35.537]
4,4'-DDE	ND	(0.36)	[35.881]	ND	(0.35)	[34.698]	ND	(0.35)	[35.075]	ND	(0.36)	[35.537]
4,4'-DDT	ND	(0.72)	[35.881]	ND	(0.69)	[34.698]	1.2 @	(0.7)	[35.075]	0.91 @	(0.71)	[35.537]
Aldrin	ND	(0.36)	[35.881]	ND	(0.35)	[34.698]	ND	(0.35)	[35.075]	0.47 @	(0.36)	[35.537]
Chlordane	ND	(1.8)	[35.881]	ND	(1.7)	[34.698]	ND	(1.8)	[35.075]	ND	(1.8)	[35.537]
Dieldrin	ND	(0.36)	[35.881]	ND	(0.35)	[34.698]	ND	(0.35)	[35.075]	ND	(0.36)	[35.537]
Endosulfan I	ND	(0.36)	[35.881]	ND	(0.35)	[34.698]	ND	(0.35)	[35.075]	ND	(0.36)	[35.537]
Endosulfan II	ND	(1.1)	[35.881]	ND	(1)	[34.698]	ND	(1.1)	[35.075]	ND	(1.1)	[35.537]
Endosulfan Sulfate	ND	(1.8)	[35.881]	ND	(1.7)	[34.698]	ND	(1.8)	[35.075]	ND	(1.8)	[35.537]
Endrin	ND	(0.36)	[35.881]	ND	(0.35)	[34.698]	ND	(0.35)	[35.075]	ND	(0.36)	[35.537]
Endrin Aldehyde	ND	(0.72)	[35.881]	ND	(0.69)	[34.698]	ND	(0.7)	[35.075]	ND	(0.71)	[35.537]
Endrin Ketone	ND	(1.8)	[35.881]	ND	(1.7)	[34.698]	ND	(1.8)	[35.075]	ND	(1.8)	[35.537]
Heptachlor	ND	(0.36)	[35.881]	ND	(0.35)	[34.698]	ND	(0.35)	[35.075]	ND	(0.36)	[35.537]
Heptachlor epoxide	ND	(0.36)	[35.881]	ND	(0.35)	[34.698]	ND	(0.35)	[35.075]	ND	(0.36)	[35.537]
Methoxychlor	ND	(1.8)	[35.881]	ND	(1.7)	[34.698]	ND	(1.8)	[35.075]	ND	(1.8)	[35.537]
PCB-1016	ND	(3.6)	[35.881]	ND	(3.5)	[34.698]	ND	(3.5)	[35.075]	ND	(3.6)	[35.537]
PCB-1221	ND	(7.2)	[35.881]	ND	(6.9)	[34.698]	ND	(7)	[35.075]	ND	(7.1)	[35.537]

Compiled: 8 February 1994

() = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)														
	NONE 14 CAN97-14-07 29 - 31			NONE 14 CAN97-14-08 34 - 36			NONE 14 CAN97-14-09 39 - 41			NONE 14 CAN97-14-10 44 - 46					
PCB-1232	ND	(7.2)	[35.881]	ND	(6.9)	[34.698]	ND	(7)	[35.075]	ND	(7.1)	[35.537]			
PCB-1242	ND	(3.6)	[35.881]	ND	(3.5)	[34.698]	ND	(3.5)	[35.075]	ND	(3.6)	[35.537]			
PCB-1248	ND	(3.6)	[35.881]	ND	(3.5)	[34.698]	ND	(3.5)	[35.075]	ND	(3.6)	[35.537]			
PCB-1254	ND	(7.2)	[35.881]	ND	(6.9)	[34.698]	ND	(7)	[35.075]	ND	(7.1)	[35.537]			
PCB-1260	ND	(7.2)	[35.881]	ND	(6.9)	[34.698]	ND	(7)	[35.075]	ND	(7.1)	[35.537]			
Toxaphene	ND	(18)	[35.881]	ND	(17)	[34.698]	ND	(18)	[35.075]	ND	(18)	[35.537]			
alpha-BHC	ND	(0.36)	[35.881]	ND	(0.35)	[34.698]	ND	(0.35)	[35.075]	ND	(0.36)	[35.537]			
beta-BHC	ND	(0.36)	[35.881]	ND	(0.35)	[34.698]	ND	(0.35)	[35.075]	0.22 J	(0.36)	[35.537]			
delta-BHC	ND	(0.36)	[35.881]	ND	(0.35)	[34.698]	ND	(0.35)	[35.075]	ND	(0.36)	[35.537]			
gamma-BHC	ND	(0.36)	[35.881]	ND	(0.35)	[34.698]	ND	(0.35)	[35.075]	ND	(0.36)	[35.537]			
SW8150 - Chlorinated Herbicides (ug/kg)															
2,4,5-T	NA			ND	(6.9)	[34.590]	NA			NA					
2,4,5-TP (Silvex)	NA			ND	(5.9)	[34.590]	NA			NA					
2,4-D	NA			ND	(42)	[34.590]	NA			NA					
2,4-DB	NA			ND	(31)	[34.590]	NA			NA					
Dalapon	NA			ND	(200)	[34.590]	NA			NA					
Dicamba	NA			ND	(9.3)	[34.590]	NA			NA					
Dichloroprop	NA			3.9 J	(22)	[34.590]	NA			NA					
Dinoseb	NA			ND	(5.2)	[34.590]	NA			NA					
MCPA	NA			ND	(8600)	[34.590]	NA			NA					
MCPP	NA			ND	(6600)	[34.590]	NA			NA					
SW8240 - Volatile Organics (ug/kg)															
1,1,1-Trichloroethane	ND	(5.4)	[1.076]	ND	(5.2)	[1.041]	ND	(5.3)	[1.052]	ND	(5.3)	[1.066]			
1,1,2,2-Tetrachloroethane	ND	(5.4)	[1.076]	ND	(5.2)	[1.041]	ND	(5.3)	[1.052]	ND	(5.3)	[1.066]			
1,1,2-Trichloroethane	ND	(5.4)	[1.076]	ND	(5.2)	[1.041]	ND	(5.3)	[1.052]	ND	(5.3)	[1.066]			
1,1-Dichloroethane	ND	(5.4)	[1.076]	ND	(5.2)	[1.041]	ND	(5.3)	[1.052]	ND	(5.3)	[1.066]			
1,1-Dichloroethene	ND	(5.4)	[1.076]	ND	(5.2)	[1.041]	ND	(5.3)	[1.052]	ND	(5.3)	[1.066]			
1,2,3-Trichloropropane	ND	(5.4)	[1.076]	ND	(5.2)	[1.041]	ND	(5.3)	[1.052]	ND	(5.3)	[1.066]			
1,2-Dichloroethane	ND	(5.4)	[1.076]	ND	(5.2)	[1.041]	ND	(5.3)	[1.052]	ND	(5.3)	[1.066]			

Compiled: 8 Fe / 1994 () = Reporting Limit [] = Factor = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 14 CAN97-14-07 29 - 31			NONE 14 CAN97-14-08 34 - 36			NONE 14 CAN97-14-09 39 - 41			NONE 14 CAN97-14-10 44 - 46		
1,2-Dichloropropane	ND	(5.4)	[1.076]	ND	(5.2)	[1.041]	ND	(5.3)	[1.052]	ND	(5.3)	[1.066]
2-Chloroethyl vinyl ether	ND	(11)	[1.076]	ND	(10)	[1.041]	ND	(11)	[1.052]	ND	(11)	[1.066]
2-Hexanone	ND	(54)	[1.076]	ND	(52)	[1.041]	ND	(53)	[1.052]	ND	(53)	[1.066]
4-Methyl-2-pentanone(MIBK)	ND	(54)	[1.076]	ND	(52)	[1.041]	ND	(53)	[1.052]	ND	(53)	[1.066]
Acetone	25 J	(110)	[1.076]	ND	(100)	[1.041]	ND	(110)	[1.052]	ND	(110)	[1.066]
Acrolein	ND	(81)	[1.076]	ND	(78)	[1.041]	ND	(79)	[1.052]	ND	(80)	[1.066]
Acrylonitrile	ND	(54)	[1.076]	ND	(52)	[1.041]	ND	(53)	[1.052]	ND	(53)	[1.066]
Benzene	ND	(5.4)	[1.076]	ND	(5.2)	[1.041]	ND	(5.3)	[1.052]	ND	(5.3)	[1.066]
Bromodichloromethane	ND	(5.4)	[1.076]	ND	(5.2)	[1.041]	ND	(5.3)	[1.052]	ND	(5.3)	[1.066]
Bromomethane	ND	(11)	[1.076]	ND	(10)	[1.041]	ND	(11)	[1.052]	ND	(11)	[1.066]
Carbon disulfide	ND	(5.4)	[1.076]	ND	(5.2)	[1.041]	ND	(5.3)	[1.052]	ND	(5.3)	[1.066]
Carbon tetrachloride	ND	(5.4)	[1.076]	ND	(5.2)	[1.041]	ND	(5.3)	[1.052]	ND	(5.3)	[1.066]
Chlorobenzene	ND	(5.4)	[1.076]	ND	(5.2)	[1.041]	ND	(5.3)	[1.052]	ND	(5.3)	[1.066]
Chloroethane	ND	(11)	[1.076]	ND	(10)	[1.041]	ND	(11)	[1.052]	ND	(11)	[1.066]
Chloroform	ND	(5.4)	[1.076]	ND	(5.2)	[1.041]	ND	(5.3)	[1.052]	ND	(5.3)	[1.066]
Chloromethane	ND	(11)	[1.076]	ND	(10)	[1.041]	ND	(11)	[1.052]	ND	(11)	[1.066]
Dibromochloromethane	ND	(5.4)	[1.076]	ND	(5.2)	[1.041]	ND	(5.3)	[1.052]	ND	(5.3)	[1.066]
Dibromomethane	ND	(5.4)	[1.076]	ND	(5.2)	[1.041]	ND	(5.3)	[1.052]	ND	(5.3)	[1.066]
Dichlorodifluoromethane	ND	(22)	[1.076]	ND	(21)	[1.041]	ND	(21)	[1.052]	ND	(21)	[1.066]
Ethyl acetate	5.2	()	[1.076]	16	()	[1.041]	5.9	()	[1.052]	5.7	()	[1.066]
Ethyl benzene	ND	(5.4)	[1.076]	ND	(5.2)	[1.041]	ND	(5.3)	[1.052]	ND	(5.3)	[1.066]
Ethyl methacrylate	ND	(16)	[1.076]	ND	(16)	[1.041]	ND	(16)	[1.052]	ND	(16)	[1.066]
Iodomethane	ND	(5.4)	[1.076]	ND	(5.2)	[1.041]	ND	(5.3)	[1.052]	ND	(5.3)	[1.066]
Methyl ethyl ketone	ND	(110)	[1.076]	ND	(100)	[1.041]	ND	(110)	[1.052]	ND	(110)	[1.066]
Methylene chloride	ND	(5.4)	[1.076]	ND	(5.2)	[1.041]	ND	(5.3)	[1.052]	ND	(5.3)	[1.066]
Styrene	ND	(5.4)	[1.076]	ND	(5.2)	[1.041]	ND	(5.3)	[1.052]	ND	(5.3)	[1.066]
Tetrachloroethene	ND	(5.4)	[1.076]	ND	(5.2)	[1.041]	ND	(5.3)	[1.052]	ND	(5.3)	[1.066]
Toluene	ND	(5.4)	[1.076]	ND	(5.2)	[1.041]	ND	(5.3)	[1.052]	ND	(5.3)	[1.066]
Tribromomethane(Bromoform)	ND	(5.4)	[1.076]	ND	(5.2)	[1.041]	ND	(5.3)	[1.052]	ND	(5.3)	[1.066]

Compiled: 8 February 1994 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE 81 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)										
	NONE 14 CAN97-14-07 29 - 31			NONE 14 CAN97-14-08 34 - 36			NONE 14 CAN97-14-09 39 - 41			NONE 14 CAN97-14-10 44 - 46		
Trichloroethene	ND	(5.4)	[1.076]	ND	(5.2)	[1.041]	ND	(5.3)	[1.052]	ND	(5.3)	[1.066]
Trichlorofluoromethane	ND	(11)	[1.076]	ND	(10)	[1.041]	ND	(11)	[1.052]	ND	(11)	[1.066]
Vinyl acetate	ND	(5.4)	[1.076]	ND	(5.2)	[1.041]	ND	(5.3)	[1.052]	ND	(5.3)	[1.066]
Vinyl chloride	ND	(11)	[1.076]	ND	(10)	[1.041]	ND	(11)	[1.052]	ND	(11)	[1.066]
Xylenes	ND	(5.4)	[1.076]	ND	(5.2)	[1.041]	ND	(5.3)	[1.052]	ND	(5.3)	[1.066]
cis-1,3-Dichloropropene	ND	(5.4)	[1.076]	ND	(5.2)	[1.041]	ND	(5.3)	[1.052]	ND	(5.3)	[1.066]
trans-1,2-Dichloroethene	ND	(5.4)	[1.076]	ND	(5.2)	[1.041]	ND	(5.3)	[1.052]	ND	(5.3)	[1.066]
trans-1,3-Dichloropropene	ND	(5.4)	[1.076]	ND	(5.2)	[1.041]	ND	(5.3)	[1.052]	ND	(5.3)	[1.066]
trans-1,4-Dichloro-2-butene	ND	(11)	[1.076]	ND	(10)	[1.041]	ND	(11)	[1.052]	ND	(11)	[1.066]
SW8270 - Semivolatile Organics (ug/kg)												
1,2,4,5-Tetrachlorobenzene	ND	(360)	[.036]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.036]
1,2,4-Trichlorobenzene	ND	(360)	[.036]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.036]
1,2-Dichlorobenzene	ND	(360)	[.036]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.036]
1,2-Diphenylhydrazine	ND	(360)	[.036]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.036]
1,3-Dichlorobenzene	ND	(360)	[.036]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.036]
1,4-Dichlorobenzene	ND	(360)	[.036]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.036]
1-Chloronaphthalene	ND	(360)	[.036]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.036]
1-Naphthylamine	ND	(360)	[.036]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.036]
2,3,4,6-Tetrachlorophenol	ND	(720)	[.036]	ND	(690)	[.035]	ND	(700)	[.035]	ND	(710)	[.036]
2,4,5-Trichlorophenol	ND	(360)	[.036]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.036]
2,4,6-Trichlorophenol	ND	(360)	[.036]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.036]
2,4-Dichlorophenol	ND	(360)	[.036]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.036]
2,4-Dimethylphenol	ND	(360)	[.036]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.036]
2,4-Dinitrophenol	ND	(1800)	[.036]	ND	(1700)	[.035]	ND	(1800)	[.035]	ND	(1800)	[.036]
2,4-Dinitrotoluene	ND	(360)	[.036]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.036]
2,6-Dichlorophenol	ND	(360)	[.036]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.036]
2,6-Dinitrotoluene	ND	(360)	[.036]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.036]
2-Chloronaphthalene	ND	(360)	[.036]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.036]
2-Chlorophenol	ND	(360)	[.036]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.036]

Compiled: 8 Fe y 1994 () = Reporting Limit [] = Factor = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID				LOCATION ID				SAMPLE ID				BEG. DEPTH - END DEPTH (FT.)			
	NONE				14				CAN97-14-07				29 - 31			
	NONE				14				CAN97-14-08				34 - 36			
	NONE				14				CAN97-14-09				39 - 41			
	NONE				14				CAN97-14-10				44 - 46			
2-Methylnaphthalene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.036]
2-Methylphenol(o-cresol)	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.036]
2-Naphthylamine	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.036]
2-Nitroaniline	ND	(1800)	[	.036]	ND	(1700)	[	.035]	ND	(1800)	[	.035]	ND	(1800)	[	.036]
2-Nitrophenol	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.036]
2-Picoline	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.036]
3,3'-Dichlorobenzidine	ND	(720)	[	.036]	ND	(690)	[	.035]	ND	(700)	[	.035]	ND	(710)	[	.036]
3-Methylcholanthrene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.036]
3-Nitroaniline	ND	(1800)	[	.036]	ND	(1700)	[	.035]	ND	(1800)	[	.035]	ND	(1800)	[	.036]
4,6-Dinitro-2-methylphenol	ND	(1800)	[	.036]	ND	(1700)	[	.035]	ND	(1800)	[	.035]	ND	(1800)	[	.036]
4-Aminobiphenyl	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.036]
4-Bromophenyl phenyl ether	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.036]
4-Chloro-3-methylphenol	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.036]
4-Chlorophenyl phenyl ether	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.036]
4-Methylphenol(p-cresol)	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.036]
4-Nitroaniline	ND	(1800)	[	.036]	ND	(1700)	[	.035]	ND	(1800)	[	.035]	ND	(1800)	[	.036]
4-Nitrophenol	ND	(1800)	[	.036]	ND	(1700)	[	.035]	ND	(1800)	[	.035]	ND	(1800)	[	.036]
7,12-Dimethylbenz(a)anthracene	ND	(900)	[	.036]	ND	(870)	[	.035]	ND	(880)	[	.035]	ND	(890)	[	.036]
Acenaphthene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.036]
Acenaphthylene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.036]
Acetophenone	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.036]
Aniline	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.036]
Anthracene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.036]
Benzidine	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.036]
Benzo(a)anthracene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.036]
Benzo(a)pyrene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.036]
Benzo(b)fluoranthene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.036]
Benzo(g,h,i)perylene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.036]
Benzo(k)fluoranthene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.036]

Compiled: 8 February 1994 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B1

RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

SITE ID	NONE				NONE				NONE				NONE			
LOCATION ID	14				14				14				14			
SAMPLE ID	CAN97-14-07				CAN97-14-08				CAN97-14-09				CAN97-14-10			
BEG. DEPTH - END DEPTH (FT.)	29 - 31				34 - 36				39 - 41				44 - 46			
PARAMETER																
Benzoic acid	ND	(1800)	[	.036]	ND	(1700)	[	.035]	ND	(1800)	[	.035]	ND	(1800)	[	.036]
Benzyl alcohol	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.036]
Butylbenzylphthalate	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.036]
Chrysene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.036]
Di-n-octylphthalate	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.036]
Dibenz(a,h)anthracene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.036]
Dibenz(a,j)acridine	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.036]
Dibenzofuran	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.036]
Dibutylphthalate	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.036]
Diethylphthalate	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.036]
Dimethylphenethylamine	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.036]
Dimethylphthalate	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.036]
Diphenylamine	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.036]
Ethyl methanesulfonate	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.036]
Fluoranthene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.036]
Fluorene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.036]
Hexachlorobenzene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.036]
Hexachlorobutadiene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.036]
Hexachlorocyclopentadiene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.036]
Hexachloroethane	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.036]
Indeno(1,2,3-cd)pyrene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.036]
Isophorone	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.036]
Methyl methanesulfonate	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.036]
N-Nitroso-di-n-butylamine	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.036]
N-Nitrosodimethylamine	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.036]
N-Nitrosodiphenylamine	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.036]
N-Nitrosodipropylamine	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.036]
N-Nitrosopiperidine	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.036]
Naphthalene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.036]

Compiled: 8 Fe' ry 1994

() = Reporting Limit [] = Factor) = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)				SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)				SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)				SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)			
	NONE 14 CAN97-14-07 29 - 31				NONE 14 CAN97-14-08 34 - 36				NONE 14 CAN97-14-09 39 - 41				NONE 14 CAN97-14-10 44 - 46			
Nitrobenzene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.036]
Pentachlorobenzene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.036]
Pentachloronitrobenzene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.036]
Pentachlorophenol	ND	(1800)	[	.036]	ND	(1700)	[	.035]	ND	(1800)	[	.035]	ND	(1800)	[	.036]
Phenacetin	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.036]
Phenanthrene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.036]
Phenol	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.036]
Pronamide	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.036]
Pyrene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.036]
Pyridine	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.036]
Unknown	180	(0)	[	.036]	240	(0)	[	.035]	240	(0)	[	.035]	NA			
Unknown cyclic ether	290	(0)	[	.036]	NA				350	(0)	[	.035]	NA			
bis(2-Chloroethoxy)methane	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.036]
bis(2-Chloroethyl)ether	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.036]
bis(2-Chloroisopropyl)ether	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.036]
bis(2-Ethylhexyl)phthalate	35 JB	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.036]
p-Chloroaniline	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.036]
p-Dimethylaminoazobenzene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.036]

TABLE B1

RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 2S.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)												
	NONE 14 CAN97-14-11 49 - 51			NONE 14 CAN97-14-12 54 - 56			NONE 14 CAN97-14-13 59 - 61			NONE 15 CAN97-15-06 6 - 8		
EPA 418.1 - Total Recoverable Petroleum Hydrocarbons (mg/kg)												
Hydrocarbons	14 @	(26)	[5.248]	11 @	(26)	[5.258]	37 @	(26)	[5.247]	8.5 @	(27)	[5.419]
SW8080 - Organochlorine Pesticides and PCBs (ug/kg)												
4,4'-DDD	ND	(0.35)	[34.990]	ND	(0.35)	[35.051]	ND	(0.35)	[34.990]	ND	(0.36)	[36.126]
4,4'-DDE	ND	(0.35)	[34.990]	ND	(0.35)	[35.051]	ND	(0.35)	[34.990]	ND	(0.36)	[36.126]
4,4'-DDT	ND	(0.7)	[34.990]	ND	(0.7)	[35.051]	1 @	(0.7)	[34.990]	ND	(0.72)	[36.126]
Aldrin	ND	(0.35)	[34.990]	ND	(0.35)	[35.051]	ND	(0.35)	[34.990]	ND	(0.36)	[36.126]
Chlordane	ND	(1.7)	[34.990]	ND	(1.8)	[35.051]	ND	(1.7)	[34.990]	ND	(1.8)	[36.126]
Dieldrin	ND	(0.35)	[34.990]	ND	(0.35)	[35.051]	ND	(0.35)	[34.990]	ND	(0.36)	[36.126]
Endosulfan I	ND	(0.35)	[34.990]	ND	(0.35)	[35.051]	ND	(0.35)	[34.990]	ND	(0.36)	[36.126]
Endosulfan II	ND	(1)	[34.990]	ND	(1.1)	[35.051]	ND	(1)	[34.990]	ND	(1.1)	[36.126]
Endosulfan Sulfate	ND	(1.7)	[34.990]	ND	(1.8)	[35.051]	ND	(1.7)	[34.990]	ND	(1.8)	[36.126]
Endrin	ND	(0.35)	[34.990]	ND	(0.35)	[35.051]	ND	(0.35)	[34.990]	ND	(0.36)	[36.126]
Endrin Aldehyde	ND	(0.7)	[34.990]	ND	(0.7)	[35.051]	ND	(0.7)	[34.990]	ND	(0.72)	[36.126]
Endrin Ketone	ND	(1.7)	[34.990]	ND	(1.8)	[35.051]	ND	(1.7)	[34.990]	ND	(1.8)	[36.126]
Heptachlor	ND	(0.35)	[34.990]	ND	(0.35)	[35.051]	ND	(0.35)	[34.990]	ND	(0.36)	[36.126]
Heptachlor epoxide	ND	(0.35)	[34.990]	ND	(0.35)	[35.051]	ND	(0.35)	[34.990]	ND	(0.36)	[36.126]
Methoxychlor	ND	(1.7)	[34.990]	ND	(1.8)	[35.051]	ND	(1.7)	[34.990]	ND	(1.8)	[36.126]
PCB-1016	ND	(3.5)	[34.990]	ND	(3.5)	[35.051]	ND	(3.5)	[34.990]	ND	(3.6)	[36.126]
PCB-1221	ND	(7)	[34.990]	ND	(7)	[35.051]	ND	(7)	[34.990]	ND	(7.2)	[36.126]
PCB-1232	ND	(7)	[34.990]	ND	(7)	[35.051]	ND	(7)	[34.990]	ND	(7.2)	[36.126]
PCB-1242	ND	(3.5)	[34.990]	ND	(3.5)	[35.051]	ND	(3.5)	[34.990]	ND	(3.6)	[36.126]
PCB-1248	ND	(3.5)	[34.990]	ND	(3.5)	[35.051]	ND	(3.5)	[34.990]	ND	(3.6)	[36.126]
PCB-1254	ND	(7)	[34.990]	ND	(7)	[35.051]	ND	(7)	[34.990]	ND	(7.2)	[36.126]
PCB-1260	ND	(7)	[34.990]	ND	(7)	[35.051]	ND	(7)	[34.990]	ND	(7.2)	[36.126]
Toxaphene	ND	(17)	[34.990]	ND	(18)	[35.051]	ND	(17)	[34.990]	ND	(18)	[36.126]
alpha-BHC	ND	(0.35)	[34.990]	ND	(0.35)	[35.051]	ND	(0.35)	[34.990]	ND	(0.36)	[36.126]
beta-BHC	ND	(0.35)	[34.990]	ND	(0.35)	[35.051]	ND	(0.35)	[34.990]	ND	(0.36)	[36.126]
delta-BHC	ND	(0.35)	[34.990]	ND	(0.35)	[35.051]	ND	(0.35)	[34.990]	ND	(0.36)	[36.126]

Compiled: 8 F[illegible]y 1994 () = Reporting Limit [] = Factor = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID	LOCATION ID	SAMPLE ID	BEG. DEPTH - END DEPTH (FT.)										
	NONE	14	CAN97-14-11	49 - 51	NONE	14	CAN97-14-12	54 - 56	NONE	14	CAN97-14-13	59 - 61	NONE	15	CAN97-15-06	6 - 8
gamma-BHC	ND	(0.35)	[34.990]		ND	(0.35)	[35.051]		ND	(0.35)	[34.990]		ND	(0.36)	[36.126]	
SW8240 - Volatile Organics (ug/kg)																
1,1,1-Trichloroethane	ND	(5.2)	[1.050]		ND	(5.3)	[1.052]		ND	(5.2)	[1.050]		ND	(5.4)	[1.084]	
1,1,2,2-Tetrachloroethane	ND	(5.2)	[1.050]		ND	(5.3)	[1.052]		ND	(5.2)	[1.050]		ND	(5.4)	[1.084]	
1,1,2-Trichloroethane	ND	(5.2)	[1.050]		ND	(5.3)	[1.052]		ND	(5.2)	[1.050]		ND	(5.4)	[1.084]	
1,1-Dichloroethane	ND	(5.2)	[1.050]		ND	(5.3)	[1.052]		ND	(5.2)	[1.050]		ND	(5.4)	[1.084]	
1,1-Dichloroethene	ND	(5.2)	[1.050]		ND	(5.3)	[1.052]		ND	(5.2)	[1.050]		ND	(5.4)	[1.084]	
1,2,3-Trichloropropane	ND	(5.2)	[1.050]		ND	(5.3)	[1.052]		ND	(5.2)	[1.050]		ND	(5.4)	[1.084]	
1,2-Dichloroethane	ND	(5.2)	[1.050]		ND	(5.3)	[1.052]		ND	(5.2)	[1.050]		ND	(5.4)	[1.084]	
1,2-Dichloropropane	ND	(5.2)	[1.050]		ND	(5.3)	[1.052]		ND	(5.2)	[1.050]		ND	(5.4)	[1.084]	
2-Chloroethyl vinyl ether	ND	(10)	[1.050]		ND	(11)	[1.052]		ND	(10)	[1.050]		ND	(11)	[1.084]	
2-Hexanone	ND	(52)	[1.050]		ND	(53)	[1.052]		ND	(52)	[1.050]		ND	(54)	[1.084]	
4-Methyl-2-pentanone(MIBK)	ND	(52)	[1.050]		ND	(53)	[1.052]		ND	(52)	[1.050]		ND	(54)	[1.084]	
Acetone	ND	(100)	[1.050]		ND	(110)	[1.052]		ND	(100)	[1.050]		ND	(110)	[1.084]	
Acrolein	ND	(79)	[1.050]		ND	(79)	[1.052]		ND	(79)	[1.050]		ND	(81)	[1.084]	
Acrylonitrile	ND	(52)	[1.050]		ND	(53)	[1.052]		ND	(52)	[1.050]		ND	(54)	[1.084]	
Benzene	ND	(5.2)	[1.050]		ND	(5.3)	[1.052]		ND	(5.2)	[1.050]		ND	(5.4)	[1.084]	
Bromodichloromethane	ND	(5.2)	[1.050]		ND	(5.3)	[1.052]		ND	(5.2)	[1.050]		ND	(5.4)	[1.084]	
Bromomethane	ND	(10)	[1.050]		ND	(11)	[1.052]		ND	(10)	[1.050]		ND	(11)	[1.084]	
Carbon disulfide	ND	(5.2)	[1.050]		ND	(5.3)	[1.052]		ND	(5.2)	[1.050]		ND	(5.4)	[1.084]	
Carbon tetrachloride	ND	(5.2)	[1.050]		ND	(5.3)	[1.052]		ND	(5.2)	[1.050]		ND	(5.4)	[1.084]	
Chlorobenzene	ND	(5.2)	[1.050]		ND	(5.3)	[1.052]		ND	(5.2)	[1.050]		ND	(5.4)	[1.084]	
Chloroethane	ND	(10)	[1.050]		ND	(11)	[1.052]		ND	(10)	[1.050]		ND	(11)	[1.084]	
Chloroform	ND	(5.2)	[1.050]		ND	(5.3)	[1.052]		ND	(5.2)	[1.050]		ND	(5.4)	[1.084]	
Chloromethane	ND	(10)	[1.050]		ND	(11)	[1.052]		ND	(10)	[1.050]		ND	(11)	[1.084]	
Dibromochloromethane	ND	(5.2)	[1.050]		ND	(5.3)	[1.052]		ND	(5.2)	[1.050]		ND	(5.4)	[1.084]	
Dibromomethane	ND	(5.2)	[1.050]		ND	(5.3)	[1.052]		ND	(5.2)	[1.050]		ND	(5.4)	[1.084]	
Dichlorodifluoromethane	ND	(21)	[1.050]		ND	(21)	[1.052]		ND	(21)	[1.050]		ND	(22)	[1.084]	
Ethyl acetate	66	()	[1.050]		58	()	[1.052]		23	()	[1.050]		NA			

Compiled: 8 February 1994 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B1

RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 14 CAN97-14-11 49 - 51			NONE 14 CAN97-14-12 54 - 56			NONE 14 CAN97-14-13 59 - 61			NONE 15 CAN97-15-06 6 - 8		
Ethyl benzene	ND	(5.2)	[1.050]	ND	(5.3)	[1.052]	ND	(5.2)	[1.050]	ND	(5.4)	[1.084]
Ethyl methacrylate	ND	(16)	[1.050]	ND	(16)	[1.052]	ND	(16)	[1.050]	ND	(16)	[1.084]
Iodomethane	ND	(5.2)	[1.050]	ND	(5.3)	[1.052]	ND	(5.2)	[1.050]	ND	(5.4)	[1.084]
Methyl ethyl ketone	ND	(100)	[1.050]	ND	(110)	[1.052]	ND	(100)	[1.050]	ND	(110)	[1.084]
Methylene chloride	ND	(5.2)	[1.050]	ND	(5.3)	[1.052]	ND	(5.2)	[1.050]	ND	(5.4)	[1.084]
Styrene	ND	(5.2)	[1.050]	ND	(5.3)	[1.052]	ND	(5.2)	[1.050]	ND	(5.4)	[1.084]
Tetrachloroethene	ND	(5.2)	[1.050]	ND	(5.3)	[1.052]	ND	(5.2)	[1.050]	ND	(5.4)	[1.084]
Toluene	0.97 J	(5.2)	[1.050]	2.4 J	(5.3)	[1.052]	4.5 J	(5.2)	[1.050]	ND	(5.4)	[1.084]
Tribromomethane(Bromoform)	ND	(5.2)	[1.050]	ND	(5.3)	[1.052]	ND	(5.2)	[1.050]	ND	(5.4)	[1.084]
Trichloroethene	ND	(5.2)	[1.050]	ND	(5.3)	[1.052]	ND	(5.2)	[1.050]	ND	(5.4)	[1.084]
Trichlorofluoromethane	ND	(10)	[1.050]	ND	(11)	[1.052]	ND	(10)	[1.050]	ND	(11)	[1.084]
Unknown hydrocarbon	NA			7.3	()	[1.052]	NA			NA		
Vinyl acetate	ND	(5.2)	[1.050]	ND	(5.3)	[1.052]	ND	(5.2)	[1.050]	ND	(5.4)	[1.084]
Vinyl chloride	ND	(10)	[1.050]	ND	(11)	[1.052]	ND	(10)	[1.050]	ND	(11)	[1.084]
Xylenes	ND	(5.2)	[1.050]	ND	(5.3)	[1.052]	ND	(5.2)	[1.050]	ND	(5.4)	[1.084]
cis-1,3-Dichloropropene	ND	(5.2)	[1.050]	ND	(5.3)	[1.052]	ND	(5.2)	[1.050]	ND	(5.4)	[1.084]
trans-1,2-Dichloroethene	ND	(5.2)	[1.050]	ND	(5.3)	[1.052]	ND	(5.2)	[1.050]	ND	(5.4)	[1.084]
trans-1,3-Dichloropropene	ND	(5.2)	[1.050]	ND	(5.3)	[1.052]	ND	(5.2)	[1.050]	ND	(5.4)	[1.084]
trans-1,4-Dichloro-2-butene	ND	(10)	[1.050]	ND	(11)	[1.052]	ND	(10)	[1.050]	ND	(11)	[1.084]
SW8270 - Semivolatile Organics (ug/kg)												
1,2,4,5-Tetrachlorobenzene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
1,2,4-Trichlorobenzene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
1,2-Dichlorobenzene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
1,2-Diphenylhydrazine	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
1,3-Dichlorobenzene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
1,4-Dichlorobenzene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
1-Chloronaphthalene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
1-Naphthylamine	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
2,3,4,6-Tetrachlorophenol	ND	(700)	[.035]	ND	(700)	[.035]	ND	(700)	[.035]	ND	(360)	[.036]

Compiled: 8 Fe y 1994

() = Reporting Limit [] = Factor = Not Detected NA = Not Applicable

TABLE B1

RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID: NONE LOCATION ID: 14 SAMPLE ID: CAN97-14-11 BEG. DEPTH - END DEPTH (FT.): 49 - 51			SITE ID: NONE LOCATION ID: 14 SAMPLE ID: CAN97-14-12 BEG. DEPTH - END DEPTH (FT.): 54 - 56			SITE ID: NONE LOCATION ID: 14 SAMPLE ID: CAN97-14-13 BEG. DEPTH - END DEPTH (FT.): 59 - 61			SITE ID: NONE LOCATION ID: 15 SAMPLE ID: CAN97-15-06 BEG. DEPTH - END DEPTH (FT.): 6 - 8		
2,4,5-Trichlorophenol	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
2,4,6-Trichlorophenol	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
2,4-Dichlorophenol	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
2,4-Dimethylphenol	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
2,4-Dinitrophenol	ND	(1700)	[.035]	ND	(1800)	[.035]	ND	(1700)	[.035]	ND	(720)	[.036]
2,4-Dinitrotoluene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
2,6-Dichlorophenol	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
2,6-Dinitrotoluene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
2-Chloronaphthalene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
2-Chlorophenol	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
2-Methylnaphthalene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
2-Methylphenol(o-cresol)	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
2-Naphthylamine	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
2-Nitroaniline	ND	(1700)	[.035]	ND	(1800)	[.035]	ND	(1700)	[.035]	ND	(360)	[.036]
2-Nitrophenol	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
2-Picoline	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
3,3'-Dichlorobenzidine	ND	(700)	[.035]	ND	(700)	[.035]	ND	(700)	[.035]	ND	(360)	[.036]
3-Methylcholanthrene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
3-Nitroaniline	ND	(1700)	[.035]	ND	(1800)	[.035]	ND	(1700)	[.035]	ND	(720)	[.036]
4,6-Dinitro-2-methylphenol	ND	(1700)	[.035]	ND	(1800)	[.035]	ND	(1700)	[.035]	ND	(360)	[.036]
4-Aminobiphenyl	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
4-Bromophenyl phenyl ether	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
4-Chloro-3-methylphenol	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
4-Chlorophenyl phenyl ether	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
4-Methylphenol(p-cresol)	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
4-Nitroaniline	ND	(1700)	[.035]	ND	(1800)	[.035]	ND	(1700)	[.035]	ND	(720)	[.036]
4-Nitrophenol	ND	(1700)	[.035]	ND	(1800)	[.035]	ND	(1700)	[.035]	ND	(360)	[.036]
7,12-Dimethylbenz(a)anthracene	ND	(870)	[.035]	ND	(880)	[.035]	ND	(870)	[.035]	ND	(360)	[.036]
Acenaphthene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]

Compiled: 8 February 1994

() = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID	LOCATION ID	SAMPLE ID	BEG. DEPTH - END DEPTH (FT.)												
	NONE	14	CAN97-14-11	49 - 51			NONE	14	CAN97-14-12	54 - 56			NONE	14	CAN97-14-13	59 - 61		
	NONE	15	CAN97-15-06	6 - 8														
Acenaphthylene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]						
Acetophenone	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]						
Aniline	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]						
Anthracene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]						
Benzidine	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]						
Benzo(a)anthracene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]						
Benzo(a)pyrene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]						
Benzo(b)fluoranthene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]						
Benzo(g,h,i)perylene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]						
Benzo(k)fluoranthene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]						
Benzoic acid	ND	(1700)	[.035]	ND	(1800)	[.035]	ND	(1700)	[.035]	ND	(1800)	[.036]						
Benzyl alcohol	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]						
Butylbenzylphthalate	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]						
Chrysene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]						
Di-n-octylphthalate	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]						
Dibenz(a,h)anthracene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]						
Dibenz(a,j)acridine	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]						
Dibenzofuran	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]						
Dibutylphthalate	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]						
Diethylphthalate	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]						
Dimethylphenethylamine	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(4300)	[.036]						
Dimethylphthalate	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]						
Diphenylamine	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]						
Ethyl methanesulfonate	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]						
Fluoranthene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]						
Fluorene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]						
Hexachlorobenzene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]						
Hexachlorobutadiene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]						
Hexachlorocyclopentadiene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]						

Compiled: 8 F[illegible]y 1994 () = Reporting Limit [] = Factor[illegible] = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)																
	NONE 14 CAN97-14-11 49 - 51				NONE 14 CAN97-14-12 54 - 56				NONE 14 CAN97-14-13 59 - 61				NONE 15 CAN97-15-06 6 - 8			
Hexachloroethane	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Indeno(1,2,3-cd)pyrene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Isophorone	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Methyl methanesulfonate	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(1800)	[	.036]
N-Nitroso-di-n-butylamine	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
N-Nitrosodimethylamine	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
N-Nitrosodiphenylamine	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
N-Nitrosodipropylamine	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
N-Nitrosopiperidine	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Naphthalene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Nitrobenzene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Pentachlorobenzene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Pentachloronitrobenzene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Pentachlorophenol	ND	(1700)	[	.035]	ND	(1800)	[	.035]	ND	(1700)	[	.035]	ND	(360)	[	.036]
Phenacetin	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Phenanthrene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Phenol	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Pronamide	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Pyrene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Pyridine	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Trichloropropene(s)	NA				240	(0)	[	.035]	NA				NA			
Unknown	170	(0)	[	.035]	420	(0)	[	.035]	NA				NA			
Unknown cyclic ether	280	(0)	[	.035]	380	(0)	[	.035]	170	(0)	[	.035]	NA			
bis(2-Chloroethoxy)methane	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
bis(2-Chloroethyl)ether	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
bis(2-Chloroisopropyl)ether	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
bis(2-Ethylhexyl)phthalate	ND	(350)	[	.035]	ND	(350)	[	.035]	78 J8	(350)	[	.035]	ND	(360)	[	.036]
p-Chloroaniline	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
p-Dimethylaminoazobenzene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]

Compiled: 8 February 1994 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID	LOCATION ID	SAMPLE ID	BEG. DEPTH - END DEPTH (FT.)										
	NONE	15	CAN97-15-I	4 - 6			NONE	15	CAN97-15-S	0 - 2			NONE	16	CAN97-16-06	5 - 7			NONE	16	CAN97-16-I	4 - 6		
EPA 418.1 - Total Recoverable Petroleum Hydrocarbons (mg/kg)																								
Hydrocarbons	8.6 @	(27)	[5.478]				1600	(25)	[5.061]				6.3 @	(26)	[5.287]				32 @	(26)	[5.152]			
SW8015 - Total Petroleum Hydrocarbons (ug/kg)																								
Benzene (2)	NA						28 J	(30)	[101.000]				ND	(32)	[107.000]				NA					
Diesel (2)	NA						120000 G@	(51000)	[020.408]				15000 GB@	(5400)	[107.527]				NA					
Ethylbenzene (2)	NA						ND	(30)	[101.000]				ND	(32)	[107.000]				NA					
Gasoline (2)	NA						ND G@	(5000)	[101.000]				ND	(5400)	[107.000]				NA					
Jet fuel (2)	NA						ND	(100000)	[020.408]				ND	(11000)	[107.527]				NA					
Kerosene (2)	NA						ND	(100000)	[020.408]				ND	(11000)	[107.527]				NA					
Toluene (2)	NA						330 C	(30)	[101.000]				ND	(32)	[107.000]				NA					
Xylenes (total) (2)	NA						14 J	(50)	[101.000]				ND	(54)	[107.000]				NA					
SW8080 - Organochlorine Pesticides and PCBs (ug/kg)																								
4,4'-DDD	ND	(0.37)	[36.522]				ND	(17)	[703.577]				ND	(0.36)	[35.894]				ND	(0.35)	[34.710]			
4,4'-DDE	ND	(0.37)	[36.522]				ND @	(17)	[703.577]				ND	(0.36)	[35.894]				12	(0.35)	[34.710]			
4,4'-DDT	ND	(0.73)	[36.522]				27 J	(34)	[703.577]				0.34 J	(0.72)	[35.894]				6.1	(0.69)	[34.710]			
Aldrin	ND	(0.37)	[36.522]				ND	(17)	[703.577]				ND	(0.36)	[35.894]				ND	(0.35)	[34.710]			
Chlordane	ND	(1.8)	[36.522]				ND	(85)	[703.577]				ND	(1.8)	[35.894]				ND	(1.7)	[34.710]			
Dieldrin	ND	(0.37)	[36.522]				ND	(17)	[703.577]				ND	(0.36)	[35.894]				ND	(0.35)	[34.710]			
Endosulfan I	ND	(0.37)	[36.522]				ND	(17)	[703.577]				ND	(0.36)	[35.894]				ND	(0.35)	[34.710]			
Endosulfan II	ND	(1.1)	[36.522]				ND	(51)	[703.577]				ND	(1.1)	[35.894]				ND	(1)	[34.710]			
Endosulfan Sulfate	ND	(1.8)	[36.522]				ND	(85)	[703.577]				ND	(1.8)	[35.894]				ND	(1.7)	[34.710]			
Endrin	ND	(0.37)	[36.522]				ND	(17)	[703.577]				ND	(0.36)	[35.894]				ND	(0.35)	[34.710]			
Endrin Aldehyde	ND	(0.73)	[36.522]				ND	(34)	[703.577]				ND	(0.72)	[35.894]				ND	(0.69)	[34.710]			
Endrin Ketone	ND	(1.8)	[36.522]				ND	(85)	[703.577]				ND	(1.8)	[35.894]				ND	(1.7)	[34.710]			
Heptachlor	ND	(0.37)	[36.522]				0.12 J	(17)	[703.577]				ND	(0.36)	[35.894]				ND	(0.35)	[34.710]			
Heptachlor epoxide	ND	(0.37)	[36.522]				ND	(17)	[703.577]				0.94 G@	(0.36)	[35.894]				ND	(0.35)	[34.710]			
Methoxychlor	ND	(1.8)	[36.522]				ND	(85)	[703.577]				ND	(1.8)	[35.894]				ND	(1.7)	[34.710]			
PCB-1016	ND	(3.7)	[36.522]				ND	(170)	[703.577]				ND	(3.6)	[35.894]				ND	(3.5)	[34.710]			
PCB-1221	ND	(7.3)	[36.522]				ND	(340)	[703.577]				ND	(7.2)	[35.894]				ND	(6.9)	[34.710]			

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TABLE B1

RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 15 CAN97-15-1 4 - 6			NONE 15 CAN97-15-S 0 - 2			NONE 16 CAN97-16-06 5 - 7			NONE 16 CAN97-16-I 4 - 6		
PCB-1232	ND	(7.3)	[36.522]	ND	(340)	[703.577]	ND	(7.2)	[35.894]	ND	(6.9)	[34.710]
PCB-1242	ND	(3.7)	[36.522]	ND	(170)	[703.577]	ND	(3.6)	[35.894]	ND	(3.5)	[34.710]
PCB-1248	ND	(3.7)	[36.522]	ND	(170)	[703.577]	ND	(3.6)	[35.894]	ND	(3.5)	[34.710]
PCB-1254	ND	(7.3)	[36.522]	ND	(340)	[703.577]	ND	(7.2)	[35.894]	ND	(6.9)	[34.710]
PCB-1260	ND	(7.3)	[36.522]	ND	(340)	[703.577]	ND	(7.2)	[35.894]	ND	(6.9)	[34.710]
Toxaphene	ND	(18)	[36.522]	ND	(850)	[703.577]	ND	(18)	[35.894]	ND	(17)	[34.710]
alpha-BHC	ND	(0.37)	[36.522]	ND	(17)	[703.577]	ND	(0.36)	[35.894]	ND	(0.35)	[34.710]
beta-BHC	ND	(0.37)	[36.522]	ND	(17)	[703.577]	ND	(0.36)	[35.894]	ND	(0.35)	[34.710]
delta-BHC	ND	(0.37)	[36.522]	ND	(17)	[703.577]	ND	(0.36)	[35.894]	ND	(0.35)	[34.710]
gamma-BHC	0.56 G@	(0.37)	[36.522]	ND	(17)	[703.577]	ND	(0.36)	[35.894]	ND	(0.35)	[34.710]
SW8150 - Chlorinated Herbicides (ug/kg)												
2,4,5-T	NA			ND	(6.8)	[34.070]	ND	(7.3)	[36.417]	NA		
2,4,5-TP (Silvex)	NA			ND	(5.8)	[34.070]	ND	(6.2)	[36.417]	NA		
2,4-D	NA			2.3 J	(41)	[34.070]	ND	(44)	[36.417]	NA		
2,4-DB	NA			34 G@	(31)	[34.070]	ND	(33)	[36.417]	NA		
Dalapon	NA			ND	(200)	[34.070]	ND	(210)	[36.417]	NA		
Dicamba	NA			ND	(9.2)	[34.070]	ND	(9.8)	[36.417]	NA		
Dichloroprop	NA			17 J	(22)	[34.070]	11 J	(24)	[36.417]	NA		
Dinoseb	NA			ND	(5.1)	[34.070]	ND	(5.5)	[36.417]	NA		
MCPA	NA			ND	(8500)	[34.070]	ND	(9100)	[36.417]	NA		
MCPP	NA			ND	(6500)	[34.070]	ND	(7000)	[36.417]	NA		
SW8240 - Volatile Organics (ug/kg)												
1,1,1-Trichloroethane	ND	(5.5)	[1.096]	ND	(5.1)	[1.022]	ND	(5.4)	[1.077]	ND	(5.2)	[1.041]
1,1,2,2-Tetrachloroethane	ND	(5.5)	[1.096]	ND	(5.1)	[1.022]	ND	(5.4)	[1.077]	ND	(5.2)	[1.041]
1,1,2-Trichloroethane	ND	(5.5)	[1.096]	ND	(5.1)	[1.022]	ND	(5.4)	[1.077]	ND	(5.2)	[1.041]
1,1-Dichloroethane	ND	(5.5)	[1.096]	ND	(5.1)	[1.022]	ND	(5.4)	[1.077]	ND	(5.2)	[1.041]
1,1-Dichloroethene	ND	(5.5)	[1.096]	ND	(5.1)	[1.022]	ND	(5.4)	[1.077]	ND	(5.2)	[1.041]
1,2,3-Trichloropropane	ND	(5.5)	[1.096]	ND	(5.1)	[1.022]	ND	(5.4)	[1.077]	ND	(5.2)	[1.041]
1,2-Dichloroethane	ND	(5.5)	[1.096]	ND	(5.1)	[1.022]	ND	(5.4)	[1.077]	ND	(5.2)	[1.041]

Compiled: 8 February 1994

() = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

	SITE ID											
	LOCATION ID											
	SAMPLE ID											
	BEG. DEPTH - END DEPTH (FT.)											
PARAMETER	NONE 15 CAN97-15-I 4 - 6			NONE 15 CAN97-15-S 0 - 2			NONE 16 CAN97-16-06 5 - 7			NONE 16 CAN97-16-I 4 - 6		
1,2-Dichloropropane	ND	(5.5)	[1.096]	ND	(5.1)	[1.022]	ND	(5.4)	[1.077]	ND	(5.2)	[1.041]
2-Chloroethyl vinyl ether	ND	(11)	[1.096]	ND	(10)	[1.022]	ND	(11)	[1.077]	ND	(10)	[1.041]
2-Hexanone	ND	(55)	[1.096]	ND	(51)	[1.022]	ND	(54)	[1.077]	ND	(52)	[1.041]
4-Methyl-2-pentanone(MIBK)	ND	(55)	[1.096]	ND	(51)	[1.022]	ND	(54)	[1.077]	ND	(52)	[1.041]
Acetone	ND	(110)	[1.096]	ND	(100)	[1.022]	ND	(110)	[1.077]	ND	(100)	[1.041]
Acrolein	ND	(82)	[1.096]	ND	(77)	[1.022]	ND	(81)	[1.077]	ND	(78)	[1.041]
Acrylonitrile	ND	(55)	[1.096]	ND	(51)	[1.022]	ND	(54)	[1.077]	ND	(52)	[1.041]
Benzene	ND	(5.5)	[1.096]	5.7 @	(5.1)	[1.022]	ND	(5.4)	[1.077]	ND	(5.2)	[1.041]
Bromodichloromethane	ND	(5.5)	[1.096]	ND	(5.1)	[1.022]	ND	(5.4)	[1.077]	ND	(5.2)	[1.041]
Bromomethane	ND	(11)	[1.096]	ND	(10)	[1.022]	ND	(11)	[1.077]	ND	(10)	[1.041]
Carbon disulfide	ND	(5.5)	[1.096]	ND	(5.1)	[1.022]	ND	(5.4)	[1.077]	ND	(5.2)	[1.041]
Carbon tetrachloride	ND	(5.5)	[1.096]	ND	(5.1)	[1.022]	ND	(5.4)	[1.077]	ND	(5.2)	[1.041]
Chlorobenzene	ND	(5.5)	[1.096]	ND	(5.1)	[1.022]	ND	(5.4)	[1.077]	ND	(5.2)	[1.041]
Chloroethane	ND	(11)	[1.096]	ND	(10)	[1.022]	ND	(11)	[1.077]	ND	(10)	[1.041]
Chloroform	ND	(5.5)	[1.096]	ND	(5.1)	[1.022]	ND	(5.4)	[1.077]	ND	(5.2)	[1.041]
Chloromethane	ND	(11)	[1.096]	ND	(10)	[1.022]	ND	(11)	[1.077]	ND	(10)	[1.041]
Dibromochloromethane	ND	(5.5)	[1.096]	ND	(5.1)	[1.022]	ND	(5.4)	[1.077]	ND	(5.2)	[1.041]
Dibromomethane	ND	(5.5)	[1.096]	ND	(5.1)	[1.022]	ND	(5.4)	[1.077]	ND	(5.2)	[1.041]
Dichlorodifluoromethane	ND	(22)	[1.096]	ND	(20)	[1.022]	ND	(22)	[1.077]	ND	(21)	[1.041]
Ethyl benzene	ND	(5.5)	[1.096]	ND	(5.1)	[1.022]	ND	(5.4)	[1.077]	ND	(5.2)	[1.041]
Ethyl methacrylate	ND	(16)	[1.096]	ND	(15)	[1.022]	ND	(16)	[1.077]	ND	(16)	[1.041]
Iodomethane	ND	(5.5)	[1.096]	ND	(5.1)	[1.022]	ND	(5.4)	[1.077]	ND	(5.2)	[1.041]
Methyl ethyl ketone	ND	(110)	[1.096]	ND	(100)	[1.022]	ND	(110)	[1.077]	ND	(100)	[1.041]
Methylene chloride	ND	(5.5)	[1.096]	6.3 @	(5.1)	[1.022]	ND	(5.4)	[1.077]	ND	(5.2)	[1.041]
Styrene	ND	(5.5)	[1.096]	ND	(5.1)	[1.022]	ND	(5.4)	[1.077]	ND	(5.2)	[1.041]
Tetrachloroethene	ND	(5.5)	[1.096]	ND	(5.1)	[1.022]	ND	(5.4)	[1.077]	ND	(5.2)	[1.041]
Toluene	1.1 J	(5.5)	[1.096]	79	(5.1)	[1.022]	ND	(5.4)	[1.077]	ND	(5.2)	[1.041]
Tribromomethane(Bromoform)	ND	(5.5)	[1.096]	ND	(5.1)	[1.022]	ND	(5.4)	[1.077]	ND	(5.2)	[1.041]
Trichloroethene	ND	(5.5)	[1.096]	ND	(5.1)	[1.022]	ND	(5.4)	[1.077]	ND	(5.2)	[1.041]

Compiled: 8 Fr ry 1994 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID											
	LOCATION ID											
	SAMPLE ID											
	BEG. DEPTH - END DEPTH (FT.)											
	NONE			NONE			NONE			NONE		
	15			15			16			16		
	CAN97-15-I			CAN97-15-S			CAN97-16-06			CAN97-16-I		
	4 - 6			0 - 2			5 - 7			4 - 6		
Trichlorofluoromethane	ND	(11)	[1.096]	ND	(10)	[1.022]	ND	(11)	[1.077]	ND	(10)	[1.041]
Vinyl acetate	ND	(5.5)	[1.096]	ND	(5.1)	[1.022]	ND	(5.4)	[1.077]	ND	(5.2)	[1.041]
Vinyl chloride	ND	(11)	[1.096]	ND	(10)	[1.022]	ND	(11)	[1.077]	ND	(10)	[1.041]
Xylenes	ND	(5.5)	[1.096]	3.6 J	(5.1)	[1.022]	ND	(5.4)	[1.077]	ND	(5.2)	[1.041]
cis-1,3-Dichloropropene	ND	(5.5)	[1.096]	ND	(5.1)	[1.022]	ND	(5.4)	[1.077]	ND	(5.2)	[1.041]
trans-1,2-Dichloroethene	ND	(5.5)	[1.096]	ND	(5.1)	[1.022]	ND	(5.4)	[1.077]	ND	(5.2)	[1.041]
trans-1,3-Dichloropropene	ND	(5.5)	[1.096]	ND	(5.1)	[1.022]	ND	(5.4)	[1.077]	ND	(5.2)	[1.041]
trans-1,4-Dichloro-2-butene	ND	(11)	[1.096]	ND	(10)	[1.022]	ND	(11)	[1.077]	ND	(10)	[1.041]
SW8270 - Semivolatile Organics (ug/kg)												
1,2,4,5-Tetrachlorobenzene	ND	(360)	[.037]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(350)	[.035]
1,2,4-Trichlorobenzene	ND	(360)	[.037]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(350)	[.035]
1,2-Dichlorobenzene	ND	(360)	[.037]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(350)	[.035]
1,2-Diphenylhydrazine	ND	(360)	[.037]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(350)	[.035]
1,3-Dichlorobenzene	ND	(360)	[.037]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(350)	[.035]
1,4-Dichlorobenzene	ND	(360)	[.037]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(350)	[.035]
1-Chloronaphthalene	ND	(360)	[.037]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(350)	[.035]
1-Naphthylamine	ND	(360)	[.037]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(350)	[.035]
2,3,4,6-Tetrachlorophenol	ND	(360)	[.037]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(350)	[.035]
2,4,5-Trichlorophenol	ND	(360)	[.037]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(350)	[.035]
2,4,6-Trichlorophenol	ND	(360)	[.037]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(350)	[.035]
2,4-Dichlorophenol	ND	(360)	[.037]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(350)	[.035]
2,4-Dimethylphenol	ND	(360)	[.037]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(350)	[.035]
2,4-Dinitrophenol	ND	(730)	[.037]	ND	(680)	[.034]	ND	(720)	[.036]	ND	(690)	[.035]
2,4-Dinitrotoluene	ND	(360)	[.037]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(350)	[.035]
2,6-Dichlorophenol	ND	(360)	[.037]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(350)	[.035]
2,6-Dinitrotoluene	ND	(360)	[.037]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(350)	[.035]
2-Chloronaphthalene	ND	(360)	[.037]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(350)	[.035]
2-Chlorophenol	ND	(360)	[.037]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(350)	[.035]
2-Methylnaphthalene	ND	(360)	[.037]	43 J	(340)	[.034]	ND	(360)	[.036]	ND	(350)	[.035]

Compiled: 8 February 1994 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B1

RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)														
	NONE 15 CAN97-15-I 4 - 6				NONE 15 CAN97-15-S 0 - 2				NONE 16 CAN97-16-06 5 - 7				NONE 16 CAN97-16-I 4 - 6		
2-Methylphenol(o-cresol)	ND	(360)	[.037]		ND	(340)	[.034]		ND	(360)	[.036]		ND	(350)	[.035]
2-Naphthylamine	ND	(360)	[.037]		ND	(340)	[.034]		ND	(360)	[.036]		ND	(350)	[.035]
2-Nitroaniline	ND	(360)	[.037]		ND	(340)	[.034]		ND	(360)	[.036]		ND	(350)	[.035]
2-Nitrophenol	ND	(360)	[.037]		ND	(340)	[.034]		ND	(360)	[.036]		ND	(350)	[.035]
2-Picoline	ND	(360)	[.037]		ND	(340)	[.034]		ND	(360)	[.036]		ND	(350)	[.035]
3,3'-Dichlorobenzidine	ND	(360)	[.037]		ND	(340)	[.034]		ND	(360)	[.036]		ND	(350)	[.035]
3-Methylcholanthrene	ND	(360)	[.037]		ND	(340)	[.034]		ND	(360)	[.036]		ND	(350)	[.035]
3-Nitroaniline	ND	(730)	[.037]		ND	(680)	[.034]		ND	(720)	[.036]		ND	(690)	[.035]
4,6-Dinitro-2-methylphenol	ND	(360)	[.037]		ND	(340)	[.034]		ND	(360)	[.036]		ND	(350)	[.035]
4-Aminobiphenyl	ND	(360)	[.037]		ND	(340)	[.034]		ND	(360)	[.036]		ND	(350)	[.035]
4-Bromophenyl phenyl ether	ND	(360)	[.037]		ND	(340)	[.034]		ND	(360)	[.036]		ND	(350)	[.035]
4-Chloro-3-methylphenol	ND	(360)	[.037]		ND	(340)	[.034]		ND	(360)	[.036]		ND	(350)	[.035]
4-Chlorophenyl phenyl ether	ND	(360)	[.037]		ND	(340)	[.034]		ND	(360)	[.036]		ND	(350)	[.035]
4-Methylphenol(p-cresol)	ND	(360)	[.037]		ND	(340)	[.034]		ND	(360)	[.036]		ND	(350)	[.035]
4-Nitroaniline	ND	(730)	[.037]		ND	(680)	[.034]		ND	(720)	[.036]		ND	(690)	[.035]
4-Nitrophenol	ND	(360)	[.037]		ND	(340)	[.034]		ND	(360)	[.036]		ND	(350)	[.035]
7,12-Dimethylbenz(a)anthracene	ND	(360)	[.037]		ND	(340)	[.034]		ND	(360)	[.036]		ND	(350)	[.035]
Acenaphthene	ND	(360)	[.037]		110 J	(340)	[.034]		ND	(360)	[.036]		ND	(350)	[.035]
Acenaphthylene	ND	(360)	[.037]		ND	(340)	[.034]		ND	(360)	[.036]		ND	(350)	[.035]
Acetophenone	ND	(360)	[.037]		ND	(340)	[.034]		ND	(360)	[.036]		ND	(350)	[.035]
Aniline	ND	(360)	[.037]		ND	(340)	[.034]		ND	(360)	[.036]		ND	(350)	[.035]
Anthracene	ND	(360)	[.037]		130 J	(340)	[.034]		ND	(360)	[.036]		ND	(350)	[.035]
Benzidine	ND	(360)	[.037]		ND	(340)	[.034]		ND	(360)	[.036]		ND	(350)	[.035]
Benzo(a)anthracene	ND	(360)	[.037]		730 @	(340)	[.034]		ND	(360)	[.036]		ND	(350)	[.035]
Benzo(a)pyrene	ND	(360)	[.037]		970 @	(340)	[.034]		ND	(360)	[.036]		ND	(350)	[.035]
Benzo(b)fluoranthene	ND	(360)	[.037]		1000 @	(340)	[.034]		ND	(360)	[.036]		ND	(350)	[.035]
Benzo(g,h,i)perylene	ND	(360)	[.037]		270 J	(340)	[.034]		ND	(360)	[.036]		ND	(350)	[.035]
Benzo(k)fluoranthene	ND	(360)	[.037]		890 @	(340)	[.034]		ND	(360)	[.036]		ND	(350)	[.035]
Benzoic acid	ND	(1800)	[.037]		ND	(1700)	[.034]		ND	(1800)	[.036]		ND	(1700)	[.035]

Compiled: 8 F[illegible]y 1994 () = Reporting Limit [] = Factor = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	NONE 15 CAN97-15-I 4 - 6			NONE 15 CAN97-15-S 0 - 2			NONE 16 CAN97-16-06 5 - 7			NONE 16 CAN97-16-I 4 - 6		
Benzyl alcohol	ND	(360)	[.037]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(350)	[.035]
Butylbenzylphthalate	ND	(360)	[.037]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(350)	[.035]
Chrysene	ND	(360)	[.037]	780 @	(340)	[.034]	ND	(360)	[.036]	ND	(350)	[.035]
Di-n-octylphthalate	ND	(360)	[.037]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(350)	[.035]
Dibenz(a,h)anthracene	ND	(360)	[.037]	89 J	(340)	[.034]	ND	(360)	[.036]	ND	(350)	[.035]
Dibenz(a,j)acridine	ND	(360)	[.037]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(350)	[.035]
Dibenzofuran	ND	(360)	[.037]	78 J	(340)	[.034]	ND	(360)	[.036]	ND	(350)	[.035]
Dibutylphthalate	ND	(360)	[.037]	9.4 J	(340)	[.034]	ND	(360)	[.036]	ND	(350)	[.035]
Diethylphthalate	ND	(360)	[.037]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(350)	[.035]
Dimethylphenethylamine	ND	(4400)	[.037]	ND	(4100)	[.034]	ND	(4300)	[.036]	ND	(4200)	[.035]
Dimethylphthalate	ND	(360)	[.037]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(350)	[.035]
Diphenylamine	ND	(360)	[.037]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(350)	[.035]
Ethyl methanesulfonate	ND	(360)	[.037]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(350)	[.035]
Fluoranthene	ND	(360)	[.037]	1100 @	(340)	[.034]	ND	(360)	[.036]	ND	(350)	[.035]
Fluorene	ND	(360)	[.037]	83 J	(340)	[.034]	ND	(360)	[.036]	ND	(350)	[.035]
Hexachlorobenzene	ND	(360)	[.037]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(350)	[.035]
Hexachlorobutadiene	ND	(360)	[.037]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(350)	[.035]
Hexachlorocyclopentadiene	ND	(360)	[.037]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(350)	[.035]
Hexachloroethane	ND	(360)	[.037]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(350)	[.035]
Indeno(1,2,3-cd)pyrene	ND	(360)	[.037]	300 J	(340)	[.034]	ND	(360)	[.036]	ND	(350)	[.035]
Isophorone	ND	(360)	[.037]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(350)	[.035]
Methyl methanesulfonate	ND	(1800)	[.037]	ND	(1700)	[.034]	ND	(1800)	[.036]	ND	(1700)	[.035]
N-Nitroso-di-n-butylamine	ND	(360)	[.037]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(350)	[.035]
N-Nitrosodimethylamine	ND	(360)	[.037]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(350)	[.035]
N-Nitrosodiphenylamine	ND	(360)	[.037]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(350)	[.035]
N-Nitrosodipropylamine	ND	(360)	[.037]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(350)	[.035]
N-Nitrosopiperidine	ND	(360)	[.037]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(350)	[.035]
Naphthalene	ND	(360)	[.037]	42 J	(340)	[.034]	ND	(360)	[.036]	ND	(350)	[.035]
Nitrobenzene	ND	(360)	[.037]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(350)	[.035]

Compiled: 8 February 1994 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 15 CAN97-15-I 4 - 6			NONE 15 CAN97-15-S 0 - 2			NONE 16 CAN97-16-06 5 - 7			NONE 16 CAN97-16-I 4 - 6		
Pentachlorobenzene	ND	(360)	[.037]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(350)	[.035]
Pentachloronitrobenzene	ND	(360)	[.037]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(350)	[.035]
Pentachlorophenol	ND	(360)	[.037]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(350)	[.035]
Phenacetin	ND	(360)	[.037]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(350)	[.035]
Phenanthrene	ND	(360)	[.037]	540 @	(340)	[.034]	ND	(360)	[.036]	ND	(350)	[.035]
Phenol	ND	(360)	[.037]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(350)	[.035]
Pronamide	ND	(360)	[.037]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(350)	[.035]
Pyrene	ND	(360)	[.037]	970 @	(340)	[.034]	ND	(360)	[.036]	ND	(350)	[.035]
Pyridine	ND	(360)	[.037]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(350)	[.035]
Unknown	220	(0)	[.037]	270	(0)	[.034]	360	(0)	[.036]	590	(0)	[.035]
Unknown B	180	(0)	[.037]	680	(0)	[.034]	NA			NA		
Unknown C17-PNA	NA			170	(0)	[.034]	NA			NA		
Unknown C18-PNA	NA			170	(0)	[.034]	NA			NA		
Unknown C20-PNA	NA			200	(0)	[.034]	NA			NA		
Unknown alkane	NA			NA			NA			210	(0)	[.035]
bis(2-Chloroethoxy)methane	ND	(360)	[.037]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(350)	[.035]
bis(2-Chloroethyl)ether	ND	(360)	[.037]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(350)	[.035]
bis(2-Chloroisopropyl)ether	ND	(360)	[.037]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(350)	[.035]
bis(2-Ethylhexyl)phthalate	ND	(360)	[.037]	120 JB	(340)	[.034]	ND	(360)	[.036]	ND	(350)	[.035]
p-Chloroaniline	ND	(360)	[.037]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(350)	[.035]
p-Dimethylaminoazobenzene	ND	(360)	[.037]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(350)	[.035]

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)										
	NONE 16 CAN97-16-99 Dup of CAN97-16-I 0 - 0			NONE 16 CAN97-16-S 0 - 2			NONE 17 CAN97-17-06 6 - 8			NONE 17 CAN97-17-99 Dup of CAN97-17-06 6 - 8		
EPA 418.1 - Total Recoverable Petroleum Hydrocarbons (mg/kg)												
Hydrocarbons	46 @	(26)	[5.101]	75 @	(25)	[4.973]	47 @	(27)	[5.478]	42 @	(28)	[5.514]
SW8080 - Organochlorine Pesticides and PCBs (ug/kg)												
4,4'-DDD	ND	(0.35)	[34.578]	ND	(3.4)	[337.838]	ND	(0.37)	[36.522]	ND	(0.37)	[36.759]
4,4'-DDE	12	(0.35)	[34.578]	10 @	(3.4)	[337.838]	0.88 @	(0.37)	[36.522]	0.83 @	(0.37)	[36.759]
4,4'-DDT	6.6	(0.69)	[34.578]	4.8 J	(6.8)	[337.838]	0.94 G@	(0.73)	[36.522]	2.3 @	(0.74)	[36.759]
Aldrin	ND	(0.35)	[34.578]	ND	(3.4)	[337.838]	ND	(0.37)	[36.522]	ND	(0.37)	[36.759]
Chlordane	ND	(1.7)	[34.578]	ND	(17)	[337.838]	ND	(1.8)	[36.522]	ND	(1.8)	[36.759]
Dieldrin	ND	(0.35)	[34.578]	ND	(3.4)	[337.838]	ND	(0.37)	[36.522]	ND	(0.37)	[36.759]
Endosulfan I	ND	(0.35)	[34.578]	ND	(3.4)	[337.838]	ND	(0.37)	[36.522]	ND	(0.37)	[36.759]
Endosulfan II	ND	(1)	[34.578]	ND	(10)	[337.838]	ND	(1.1)	[36.522]	ND	(1.1)	[36.759]
Endosulfan Sulfate	ND	(1.7)	[34.578]	ND	(17)	[337.838]	ND	(1.8)	[36.522]	ND	(1.8)	[36.759]
Endrin	ND	(0.35)	[34.578]	ND	(3.4)	[337.838]	ND	(0.37)	[36.522]	ND	(0.37)	[36.759]
Endrin Aldehyde	ND	(0.69)	[34.578]	ND	(6.8)	[337.838]	ND	(0.73)	[36.522]	ND	(0.74)	[36.759]
Endrin Ketone	ND	(1.7)	[34.578]	ND	(17)	[337.838]	ND	(1.8)	[36.522]	ND	(1.8)	[36.759]
Heptachlor	ND	(0.35)	[34.578]	ND	(3.4)	[337.838]	ND	(0.37)	[36.522]	ND	(0.37)	[36.759]
Heptachlor epoxide	ND	(0.35)	[34.578]	ND	(3.4)	[337.838]	ND	(0.37)	[36.522]	ND	(0.37)	[36.759]
Methoxychlor	ND	(1.7)	[34.578]	ND	(17)	[337.838]	ND	(1.8)	[36.522]	ND	(1.8)	[36.759]
PCB-1016	ND	(3.5)	[34.578]	ND	(34)	[337.838]	ND	(3.7)	[36.522]	ND	(3.7)	[36.759]
PCB-1221	ND	(6.9)	[34.578]	ND	(68)	[337.838]	ND	(7.3)	[36.522]	ND	(7.4)	[36.759]
PCB-1232	ND	(6.9)	[34.578]	ND	(68)	[337.838]	ND	(7.3)	[36.522]	ND	(7.4)	[36.759]
PCB-1242	ND	(3.5)	[34.578]	ND	(34)	[337.838]	ND	(3.7)	[36.522]	ND	(3.7)	[36.759]
PCB-1248	ND	(3.5)	[34.578]	ND	(34)	[337.838]	ND	(3.7)	[36.522]	ND	(3.7)	[36.759]
PCB-1254	ND	(6.9)	[34.578]	ND	(68)	[337.838]	ND	(7.3)	[36.522]	ND	(7.4)	[36.759]
PCB-1260	ND	(6.9)	[34.578]	ND	(68)	[337.838]	ND	(7.3)	[36.522]	ND	(7.4)	[36.759]
Toxaphene	ND	(17)	[34.578]	ND	(170)	[337.838]	ND	(18)	[36.522]	ND	(18)	[36.759]
alpha-BHC	ND	(0.35)	[34.578]	ND	(3.4)	[337.838]	ND	(0.37)	[36.522]	ND	(0.37)	[36.759]
beta-BHC	ND	(0.35)	[34.578]	ND	(3.4)	[337.838]	ND	(0.37)	[36.522]	ND	(0.37)	[36.759]
delta-BHC	ND G@	(0.35)	[34.578]	ND	(3.4)	[337.838]	ND	(0.37)	[36.522]	ND	(0.37)	[36.759]

Compiled: 8 February 1994 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B1

RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID: NONE LOCATION ID: 16 SAMPLE ID: CAN97-16-99 Dup of CAN97-16-I BEG. DEPTH - END DEPTH (FT.): 0 - 0			SITE ID: NONE LOCATION ID: 16 SAMPLE ID: CAN97-16-S BEG. DEPTH - END DEPTH (FT.): 0 - 2			SITE ID: NONE LOCATION ID: 17 SAMPLE ID: CAN97-17-06 BEG. DEPTH - END DEPTH (FT.): 6 - 8			SITE ID: NONE LOCATION ID: 17 SAMPLE ID: CAN97-17-99 Dup of CAN97-17-06 BEG. DEPTH - END DEPTH (FT.): 6 - 8		
gamma-BHC	ND	(0.35)	[34.578]	ND	(3.4)	[337.838]	ND	(0.37)	[36.522]	0.31 J	(0.37)	[36.759]
SW8240 - Volatile Organics (ug/kg)												
1,1,1-Trichloroethane	ND	(5.2)	[1.039]	ND	(5.1)	[1.014]	ND	(5.5)	[1.096]	ND	(5.5)	[1.103]
1,1,2,2-Tetrachloroethane	ND	(5.2)	[1.039]	ND	(5.1)	[1.014]	ND	(5.5)	[1.096]	ND	(5.5)	[1.103]
1,1,2-Trichloroethane	ND	(5.2)	[1.039]	ND	(5.1)	[1.014]	ND	(5.5)	[1.096]	ND	(5.5)	[1.103]
1,1-Dichloroethane	ND	(5.2)	[1.039]	ND	(5.1)	[1.014]	ND	(5.5)	[1.096]	ND	(5.5)	[1.103]
1,1-Dichloroethene	ND	(5.2)	[1.039]	ND	(5.1)	[1.014]	ND	(5.5)	[1.096]	ND	(5.5)	[1.103]
1,2,3-Trichloropropane	ND	(5.2)	[1.039]	ND	(5.1)	[1.014]	ND	(5.5)	[1.096]	ND	(5.5)	[1.103]
1,2-Dichloroethane	ND	(5.2)	[1.039]	ND	(5.1)	[1.014]	ND	(5.5)	[1.096]	ND	(5.5)	[1.103]
1,2-Dichloropropane	ND	(5.2)	[1.039]	ND	(5.1)	[1.014]	ND	(5.5)	[1.096]	ND	(5.5)	[1.103]
2-Chloroethyl vinyl ether	ND	(10)	[1.039]	ND	(10)	[1.014]	ND	(11)	[1.096]	ND	(11)	[1.103]
2-Hexanone	ND	(52)	[1.039]	ND	(51)	[1.014]	ND	(55)	[1.096]	ND	(55)	[1.103]
4-Methyl-2-pentanone(MIBK)	ND	(52)	[1.039]	ND	(51)	[1.014]	ND	(55)	[1.096]	ND	(55)	[1.103]
Acetone	ND	(100)	[1.039]	120 @	(100)	[1.014]	ND	(110)	[1.096]	ND	(110)	[1.103]
Acrolein	ND	(78)	[1.039]	ND	(76)	[1.014]	ND	(82)	[1.096]	ND	(83)	[1.103]
Acrylonitrile	ND	(52)	[1.039]	ND	(51)	[1.014]	ND	(55)	[1.096]	ND	(55)	[1.103]
Benzene	ND	(5.2)	[1.039]	ND	(5.1)	[1.014]	ND	(5.5)	[1.096]	ND	(5.5)	[1.103]
Bromodichloromethane	ND	(5.2)	[1.039]	ND	(5.1)	[1.014]	ND	(5.5)	[1.096]	ND	(5.5)	[1.103]
Bromomethane	ND	(10)	[1.039]	ND	(10)	[1.014]	ND	(11)	[1.096]	ND	(11)	[1.103]
Carbon disulfide	ND	(5.2)	[1.039]	ND	(5.1)	[1.014]	ND	(5.5)	[1.096]	ND	(5.5)	[1.103]
Carbon tetrachloride	ND	(5.2)	[1.039]	ND	(5.1)	[1.014]	ND	(5.5)	[1.096]	ND	(5.5)	[1.103]
Chlorobenzene	ND	(5.2)	[1.039]	ND	(5.1)	[1.014]	ND	(5.5)	[1.096]	ND	(5.5)	[1.103]
Chloroethane	ND	(10)	[1.039]	ND	(10)	[1.014]	ND	(11)	[1.096]	ND	(11)	[1.103]
Chloroform	ND	(5.2)	[1.039]	ND	(5.1)	[1.014]	ND	(5.5)	[1.096]	ND	(5.5)	[1.103]
Chloromethane	ND	(10)	[1.039]	ND	(10)	[1.014]	ND	(11)	[1.096]	ND	(11)	[1.103]
Dibromochloromethane	ND	(5.2)	[1.039]	ND	(5.1)	[1.014]	ND	(5.5)	[1.096]	ND	(5.5)	[1.103]
Dibromomethane	ND	(5.2)	[1.039]	ND	(5.1)	[1.014]	ND	(5.5)	[1.096]	ND	(5.5)	[1.103]
Dichlorodifluoromethane	ND	(21)	[1.039]	ND	(20)	[1.014]	ND	(22)	[1.096]	ND	(22)	[1.103]
Ethyl benzene	ND	(5.2)	[1.039]	1.2 J	(5.1)	[1.014]	ND	(5.5)	[1.096]	ND	(5.5)	[1.103]

Compiled: 8 Feb y 1994

() = Reporting Limit [] = Factor = Not Detected NA = Not Applicable

TABLE B1

RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID	LOCATION ID	SAMPLE ID	BEG. DEPTH - END DEPTH (FT.)										
	NONE	16	CAN97-16-99 Dup of CAN97-16-I	0 - 0			NONE	16	CAN97-16-S	0 - 2			NONE	17	CAN97-17-06	6 - 8			NONE	17	CAN97-17-99 Dup of CAN97-17-06	6 - 8		
Ethyl methacrylate	ND	(16)	[1.039]	ND	(15)	[1.014]	ND	(16)	[1.096]	ND	(17)	[1.103]
Iodomethane	ND	(5.2)	[1.039]	ND	(5.1)	[1.014]	ND	(5.5)	[1.096]	ND	(5.5)	[1.103]
Methyl ethyl ketone	ND	(100)	[1.039]	ND	(100)	[1.014]	ND	(110)	[1.096]	ND	(110)	[1.103]
Methylene chloride	ND	(5.2)	[1.039]	100	(5.1)	[1.014]	ND	(5.5)	[1.096]	ND	(5.5)	[1.103]
Styrene	ND	(5.2)	[1.039]	ND	(5.1)	[1.014]	ND	(5.5)	[1.096]	ND	(5.5)	[1.103]
Tetrachloroethene	ND	(5.2)	[1.039]	ND	(5.1)	[1.014]	ND	(5.5)	[1.096]	ND	(5.5)	[1.103]
Toluene	ND	(5.2)	[1.039]	68	(5.1)	[1.014]	ND	(5.5)	[1.096]	ND	(5.5)	[1.103]
Tribromomethane(Bromoform)	ND	(5.2)	[1.039]	ND	(5.1)	[1.014]	ND	(5.5)	[1.096]	ND	(5.5)	[1.103]
Trichloroethene	ND	(5.2)	[1.039]	0.36 J	(5.1)	[1.014]	ND	(5.5)	[1.096]	ND	(5.5)	[1.103]
Trichlorofluoromethane	ND	(10)	[1.039]	ND	(10)	[1.014]	ND	(11)	[1.096]	ND	(11)	[1.103]
Vinyl acetate	ND	(5.2)	[1.039]	ND	(5.1)	[1.014]	ND	(5.5)	[1.096]	ND	(5.5)	[1.103]
Vinyl chloride	ND	(10)	[1.039]	ND	(10)	[1.014]	ND	(11)	[1.096]	ND	(11)	[1.103]
Xylenes	ND	(5.2)	[1.039]	4.9 J	(5.1)	[1.014]	ND	(5.5)	[1.096]	ND	(5.5)	[1.103]
cis-1,3-Dichloropropene	ND	(5.2)	[1.039]	ND	(5.1)	[1.014]	ND	(5.5)	[1.096]	ND	(5.5)	[1.103]
trans-1,2-Dichloroethene	ND	(5.2)	[1.039]	ND	(5.1)	[1.014]	ND	(5.5)	[1.096]	ND	(5.5)	[1.103]
trans-1,3-Dichloropropene	ND	(5.2)	[1.039]	ND	(5.1)	[1.014]	ND	(5.5)	[1.096]	ND	(5.5)	[1.103]
trans-1,4-Dichloro-2-butene	ND	(10)	[1.039]	ND	(10)	[1.014]	ND	(11)	[1.096]	ND	(11)	[1.103]
SW8270 - Semivolatile Organics (ug/kg)												
1,2,4,5-Tetrachlorobenzene	ND	(350)	[.035]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
1,2,4-Trichlorobenzene	ND	(350)	[.035]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
1,2-Dichlorobenzene	ND	(350)	[.035]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
1,2-Diphenylhydrazine	ND	(350)	[.035]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
1,3-Dichlorobenzene	ND	(350)	[.035]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
1,4-Dichlorobenzene	ND	(350)	[.035]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
1-Chloronaphthalene	ND	(350)	[.035]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
1-Naphthylamine	ND	(350)	[.035]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
2,3,4,6-Tetrachlorophenol	ND	(350)	[.035]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
2,4,5-Trichlorophenol	ND	(350)	[.035]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
2,4,6-Trichlorophenol	ND	(350)	[.035]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]

Compiled: 8 February 1994

() = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

	SITE ID											
	LOCATION ID											
	SAMPLE ID											
	BEG. DEPTH - END DEPTH (FT.)											
	NONE			NONE			NONE			NONE		
	16			16			17			17		
	CAN97-16-99 Dup of CAN97-16-I			CAN97-16-S			CAN97-17-06			CAN97-17-99 Dup of CAN97-17-06		
PARAMETER	0 - 0			0 - 2			6 - 8			6 - 8		
2,4-Dichlorophenol	ND	(350)	[.035]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
2,4-Dimethylphenol	ND	(350)	[.035]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
2,4-Dinitrophenol	ND	(690)	[.035]	ND	(680)	[.034]	ND	(730)	[.036]	ND	(730)	[.037]
2,4-Dinitrotoluene	ND	(350)	[.035]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
2,6-Dichlorophenol	ND	(350)	[.035]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
2,6-Dinitrotoluene	ND	(350)	[.035]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
2-Chloronaphthalene	ND	(350)	[.035]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
2-Chlorophenol	ND	(350)	[.035]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
2-Methylnaphthalene	ND	(350)	[.035]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
2-Methylphenol(o-cresol)	ND	(350)	[.035]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
2-Naphthylamine	ND	(350)	[.035]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
2-Nitroaniline	ND	(350)	[.035]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
2-Nitrophenol	ND	(350)	[.035]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
2-Picoline	ND	(350)	[.035]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
3,3'-Dichlorobenzidine	ND	(350)	[.035]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
3-Methylcholanthrene	ND	(350)	[.035]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
3-Nitroaniline	ND	(690)	[.035]	ND	(680)	[.034]	ND	(730)	[.036]	ND	(730)	[.037]
4,6-Dinitro-2-methylphenol	ND	(350)	[.035]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
4-Aminobiphenyl	ND	(350)	[.035]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
4-Bromophenyl phenyl ether	ND	(350)	[.035]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
4-Chloro-3-methylphenol	ND	(350)	[.035]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
4-Chlorophenyl phenyl ether	ND	(350)	[.035]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
4-Methylphenol(p-cresol)	ND	(350)	[.035]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
4-Nitroaniline	ND	(690)	[.035]	ND	(680)	[.034]	ND	(730)	[.036]	ND	(730)	[.037]
4-Nitrophenol	ND	(350)	[.035]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
7,12-Dimethylbenz(a)anthracene	ND	(350)	[.035]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
Acenaphthene	ND	(350)	[.035]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
Acenaphthylene	ND	(350)	[.035]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
Acetophenone	ND	(350)	[.035]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]

Compiled: 8 Fe y 1994 () = Reporting Limit [] = Factor - Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

	SITE ID															
	LOCATION ID															
	SAMPLE ID															
	BEG. DEPTH - END DEPTH (FT.)															
PARAMETER	NONE 16 CAN97-16-99 Dup of CAN97-16-I 0 - 0				NONE 16 CAN97-16-S 0 - 2				NONE 17 CAN97-17-06 6 - 8				NONE 17 CAN97-17-99 Dup of CAN97-17-06 6 - 8			
Aniline	ND	(350)	[	.035]	ND	(340)	[	.034]	ND	(360)	[	.036]	ND	(370)	[	.037]
Anthracene	ND	(350)	[	.035]	ND	(340)	[	.034]	ND	(360)	[	.036]	ND	(370)	[	.037]
Benzidine	ND	(350)	[	.035]	ND	(340)	[	.034]	ND	(360)	[	.036]	ND	(370)	[	.037]
Benzo(a)anthracene	ND	(350)	[	.035]	10 J	(340)	[	.034]	ND	(360)	[	.036]	ND	(370)	[	.037]
Benzo(a)pyrene	ND	(350)	[	.035]	9.2 J	(340)	[	.034]	ND	(360)	[	.036]	ND	(370)	[	.037]
Benzo(b)fluoranthene	ND	(350)	[	.035]	34 JX	(340)	[	.034]	ND	(360)	[	.036]	ND	(370)	[	.037]
Benzo(g,h,i)perylene	ND	(350)	[	.035]	ND	(340)	[	.034]	ND	(360)	[	.036]	ND	(370)	[	.037]
Benzo(k)fluoranthene	ND	(350)	[	.035]	34 JX	(340)	[	.034]	ND	(360)	[	.036]	ND	(370)	[	.037]
Benzoic acid	ND	(1700)	[	.035]	ND	(1700)	[	.034]	ND	(1800)	[	.036]	ND	(1800)	[	.037]
Benzyl alcohol	ND	(350)	[	.035]	ND	(340)	[	.034]	ND	(360)	[	.036]	ND	(370)	[	.037]
Butylbenzylphthalate	ND	(350)	[	.035]	ND	(340)	[	.034]	ND	(360)	[	.036]	ND	(370)	[	.037]
Chrysene	ND	(350)	[	.035]	12 J	(340)	[	.034]	ND	(360)	[	.036]	ND	(370)	[	.037]
Di-n-octylphthalate	ND	(350)	[	.035]	ND	(340)	[	.034]	ND	(360)	[	.036]	ND	(370)	[	.037]
Dibenz(a,h)anthracene	ND	(350)	[	.035]	ND	(340)	[	.034]	ND	(360)	[	.036]	ND	(370)	[	.037]
Dibenz(a,j)acridine	ND	(350)	[	.035]	ND	(340)	[	.034]	ND	(360)	[	.036]	ND	(370)	[	.037]
Dibenzofuran	ND	(350)	[	.035]	ND	(340)	[	.034]	ND	(360)	[	.036]	ND	(370)	[	.037]
Dibutylphthalate	ND	(350)	[	.035]	ND	(340)	[	.034]	ND	(360)	[	.036]	ND	(370)	[	.037]
Diethylphthalate	ND	(350)	[	.035]	ND	(340)	[	.034]	ND	(360)	[	.036]	ND	(370)	[	.037]
Dimethylphenethylamine	ND	(4200)	[	.035]	ND	(4100)	[	.034]	ND	(4400)	[	.036]	ND	(4400)	[	.037]
Dimethylphthalate	ND	(350)	[	.035]	ND	(340)	[	.034]	ND	(360)	[	.036]	ND	(370)	[	.037]
Diphenylamine	ND	(350)	[	.035]	ND	(340)	[	.034]	ND	(360)	[	.036]	ND	(370)	[	.037]
Ethyl methanesulfonate	ND	(350)	[	.035]	ND	(340)	[	.034]	ND	(360)	[	.036]	ND	(370)	[	.037]
Fluoranthene	ND	(350)	[	.035]	12 J	(340)	[	.034]	ND	(360)	[	.036]	ND	(370)	[	.037]
Fluorene	ND	(350)	[	.035]	ND	(340)	[	.034]	ND	(360)	[	.036]	ND	(370)	[	.037]
Hexachlorobenzene	ND	(350)	[	.035]	ND	(340)	[	.034]	ND	(360)	[	.036]	ND	(370)	[	.037]
Hexachlorobutadiene	ND	(350)	[	.035]	ND	(340)	[	.034]	ND	(360)	[	.036]	ND	(370)	[	.037]
Hexachlorocyclopentadiene	ND	(350)	[	.035]	ND	(340)	[	.034]	ND	(360)	[	.036]	ND	(370)	[	.037]
Hexachloroethane	ND	(350)	[	.035]	ND	(340)	[	.034]	ND	(360)	[	.036]	ND	(370)	[	.037]
Indeno(1,2,3-cd)pyrene	ND	(350)	[	.035]	ND	(340)	[	.034]	ND	(360)	[	.036]	ND	(370)	[	.037]

Compiled: 8 February 1994 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B1

RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID: NONE LOCATION ID: 16 SAMPLE ID: CAN97-16-99 Dup of CAN97-16-I BEG. DEPTH - END DEPTH (FT.): 0 - 0			SITE ID: NONE LOCATION ID: 16 SAMPLE ID: CAN97-16-S BEG. DEPTH - END DEPTH (FT.): 0 - 2			SITE ID: NONE LOCATION ID: 17 SAMPLE ID: CAN97-17-06 BEG. DEPTH - END DEPTH (FT.): 6 - 8			SITE ID: NONE LOCATION ID: 17 SAMPLE ID: CAN97-17-99 Dup of CAN97-17-06 BEG. DEPTH - END DEPTH (FT.): 6 - 8		
Isophorone	ND	(350)	[.035]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
Methyl methanesulfonate	ND	(1700)	[.035]	ND	(1700)	[.034]	ND	(1800)	[.036]	ND	(1800)	[.037]
N-Nitroso-di-n-butylamine	ND	(350)	[.035]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
N-Nitrosodimethylamine	ND	(350)	[.035]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
N-Nitrosodiphenylamine	ND	(350)	[.035]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
N-Nitrosodipropylamine	ND	(350)	[.035]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
N-Nitrosopiperidine	ND	(350)	[.035]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
Naphthalene	ND	(350)	[.035]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
Nitrobenzene	ND	(350)	[.035]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
Pentachlorobenzene	ND	(350)	[.035]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
Pentachloronitrobenzene	ND	(350)	[.035]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
Pentachlorophenol	ND	(350)	[.035]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
Phenacetin	ND	(350)	[.035]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
Phenanthrene	ND	(350)	[.035]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
Phenol	ND	(350)	[.035]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
Pronamide	ND	(350)	[.035]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
Pyrene	ND	(350)	[.035]	11 J	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
Pyridine	ND	(350)	[.035]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
Unknown	660	(0)	[.035]	200	(0)	[.034]	NA			NA		
Unknown 8	NA			240	(0)	[.034]	NA			150	(0)	[.037]
Unknown aldehyde	NA			170	(0)	[.034]	NA			NA		
Unknown alkane	210	(0)	[.035]	300	(0)	[.034]	NA			NA		
Unknown alkene	240	(0)	[.035]	270	(0)	[.034]	NA			NA		
Unknown carboxylic acid	NA			270	(0)	[.034]	NA			NA		
Unknown oxirane	NA			640	(0)	[.034]	NA			NA		
bis(2-Chloroethoxy)methane	ND	(350)	[.035]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
bis(2-Chloroethyl)ether	ND	(350)	[.035]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
bis(2-Chloroisopropyl)ether	ND	(350)	[.035]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
bis(2-Ethylhexyl)phthalate	13 J	(350)	[.035]	59 JB	(340)	[.034]	240 J	(360)	[.036]	ND	(370)	[.037]

Compiled: 8 Feb 1994

() = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

	SITE ID											
	LOCATION ID											
	SAMPLE ID											
	BEG. DEPTH - END DEPTH (FT.)											
PARAMETER	NONE			NONE			NONE			NONE		
	16			16			17			17		
	CAN97-16-99 Dup of CAN97-16-1			CAN97-16-S			CAN97-17-06			CAN97-17-99 Dup of CAN97-17-06		
	0 - 0			0 - 2			6 - 8			6 - 8		
p-Chloroaniline	ND	(350)	[.035]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]
p-Dimethylaminoazobenzene	ND	(350)	[.035]	ND	(340)	[.034]	ND	(360)	[.036]	ND	(370)	[.037]

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 17 CAN97-17-I 4 - 6			NONE 17 CAN97-17-S 0 - 2			NONE 18 CAN97-18-06 5 - 7			NONE 18 CAN97-18-1 4 - 6		
EPA 418.1 - Total Recoverable Petroleum Hydrocarbons (mg/kg)												
Hydrocarbons	100 @	(28)	[5.514]	9900	(120)	[24.702]	11 @	(27)	[5.423]	12 @	(28)	[5.529]
SW8015 - Total Petroleum Hydrocarbons (ug/kg)												
Benzene (2)	ND	(31)	[104.000]	NA			NA			NA		
Diesel (2)	13000 GB@	(5400)	[108.696]	NA			NA			NA		
Ethylbenzene (2)	ND	(31)	[104.000]	NA			NA			NA		
Gasoline (2)	ND	(5200)	[104.000]	NA			NA			NA		
Jet fuel (2)	ND	(11000)	[108.696]	NA			NA			NA		
Kerosene (2)	ND	(11000)	[108.696]	NA			NA			NA		
Toluene (2)	19 J	(31)	[104.000]	NA			NA			NA		
Xylenes (total) (2)	29 J	(52)	[104.000]	NA			NA			NA		
SW8080 - Organochlorine Pesticides and PCBs (ug/kg)												
4,4'-DDD	ND	(0.37)	[36.759]	5.9 B@	(3.3)	[333.667]	ND	(0.36)	[36.153]	0.19 J	(0.37)	[36.857]
4,4'-DDE	1.6 @	(0.37)	[36.759]	0.75 J	(3.3)	[333.667]	ND	(0.36)	[36.153]	0.26 J	(0.37)	[36.857]
4,4'-DDT	1.1 @	(0.74)	[36.759]	5.3 J	(6.7)	[333.667]	ND	(0.72)	[36.153]	ND	(0.74)	[36.857]
Aldrin	ND	(0.37)	[36.759]	5.7 @	(3.3)	[333.667]	ND	(0.36)	[36.153]	4 G	(0.37)	[36.857]
Chlordane	ND	(1.8)	[36.759]	ND	(17)	[333.667]	ND	(1.8)	[36.153]	ND	(1.8)	[36.857]
Dieldrin	ND	(0.37)	[36.759]	1.2 J	(3.3)	[333.667]	ND	(0.36)	[36.153]	ND	(0.37)	[36.857]
Endosulfan I	ND	(0.37)	[36.759]	ND	(3.3)	[333.667]	ND	(0.36)	[36.153]	ND	(0.37)	[36.857]
Endosulfan II	ND	(1.1)	[36.759]	ND	(10)	[333.667]	ND	(1.1)	[36.153]	ND	(1.1)	[36.857]
Endosulfan Sulfate	ND	(1.8)	[36.759]	ND	(17)	[333.667]	ND	(1.8)	[36.153]	ND	(1.8)	[36.857]
Endrin	ND	(0.37)	[36.759]	2.5 J	(3.3)	[333.667]	ND	(0.36)	[36.153]	ND	(0.37)	[36.857]
Endrin Aldehyde	ND	(0.74)	[36.759]	4.4 J	(6.7)	[333.667]	ND	(0.72)	[36.153]	ND	(0.74)	[36.857]
Endrin Ketone	ND	(1.8)	[36.759]	11 J	(17)	[333.667]	ND	(1.8)	[36.153]	ND	(1.8)	[36.857]
Heptachlor	ND	(0.37)	[36.759]	ND	(3.3)	[333.667]	ND	(0.36)	[36.153]	ND	(0.37)	[36.857]
Heptachlor epoxide	ND	(0.37)	[36.759]	ND	(3.3)	[333.667]	ND	(0.36)	[36.153]	0.79 G@	(0.37)	[36.857]
Methoxychlor	ND	(1.8)	[36.759]	ND	(17)	[333.667]	ND	(1.8)	[36.153]	ND	(1.8)	[36.857]
PCB-1016	ND	(3.7)	[36.759]	ND	(33)	[333.667]	ND	(3.6)	[36.153]	ND	(3.7)	[36.857]
PCB-1221	ND	(7.4)	[36.759]	ND	(67)	[333.667]	ND	(7.2)	[36.153]	ND	(7.4)	[36.857]

Compiled: 8 Feb 1994 () = Reporting Limit [] = Factor Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)														
	NONE 17 CAN97-17-I 4 - 6			NONE 17 CAN97-17-S 0 - 2			NONE 18 CAN97-18-06 5 - 7			NONE 18 CAN97-18-I 4 - 6		
PCB-1232	ND	(7.4)	[36.759]	ND	(67)	[333.667]	ND	(7.2)	[36.153]	ND	(7.4)	[36.857]
PCB-1242	ND	(3.7)	[36.759]	ND	(33)	[333.667]	ND	(3.6)	[36.153]	ND	(3.7)	[36.857]
PCB-1248	ND	(3.7)	[36.759]	ND	(33)	[333.667]	ND	(3.6)	[36.153]	ND	(3.7)	[36.857]
PCB-1254	ND	(7.4)	[36.759]	ND	(67)	[333.667]	ND	(7.2)	[36.153]	ND	(7.4)	[36.857]
PCB-1260	ND	(7.4)	[36.759]	ND	(67)	[333.667]	ND	(7.2)	[36.153]	ND	(7.4)	[36.857]
Toxaphene	ND	(18)	[36.759]	ND	(170)	[333.667]	ND	(18)	[36.153]	ND	(18)	[36.857]
alpha-BHC	ND	(0.37)	[36.759]	ND	(3.3)	[333.667]	ND	(0.36)	[36.153]	ND	(0.37)	[36.857]
beta-BHC	ND	(0.37)	[36.759]	1.3 J	(3.3)	[333.667]	ND	(0.36)	[36.153]	ND	(0.37)	[36.857]
delta-BHC	ND	(0.37)	[36.759]	ND	(3.3)	[333.667]	0.86 G@	(0.36)	[36.153]	0.4 G@	(0.37)	[36.857]
gamma-BHC	0.27 J	(0.37)	[36.759]	ND	(3.3)	[333.667]	0.37 G@	(0.36)	[36.153]	ND	(0.37)	[36.857]
SW8150 - Chlorinated Herbicides (ug/kg)												
2,4,5-T	ND	(7.4)	[36.765]	NA			NA			NA		
2,4,5-TP (Silvex)	2.1 J	(6.2)	[36.765]	NA			NA			NA		
2,4-D	ND	(44)	[36.765]	NA			NA			NA		
2,4-DB	9.4 J	(33)	[36.765]	NA			NA			NA		
Dalapon	ND	(210)	[36.765]	NA			NA			NA		
Dicamba	ND	(9.9)	[36.765]	NA			NA			NA		
Dichloroprop	18 J	(24)	[36.765]	NA			NA			NA		
Dinoseb	ND	(5.5)	[36.765]	NA			NA			NA		
MCPA	ND	(9200)	[36.765]	NA			NA			NA		
MCPP	ND	(7100)	[36.765]	NA			NA			NA		
SW8240 - Volatile Organics (ug/kg)												
1,1,1-Trichloroethane	ND	(5.5)	[1.103]	ND	(5)	[1.002]	ND	(5.4)	[1.085]	ND	(5.5)	[1.108]
1,1,2,2-Tetrachloroethane	ND	(5.5)	[1.103]	ND	(5)	[1.002]	ND	(5.4)	[1.085]	ND	(5.5)	[1.108]
1,1,2-Trichloroethane	ND	(5.5)	[1.103]	ND	(5)	[1.002]	ND	(5.4)	[1.085]	ND	(5.5)	[1.108]
1,1-Dichloroethane	ND	(5.5)	[1.103]	ND	(5)	[1.002]	ND	(5.4)	[1.085]	ND	(5.5)	[1.108]
1,1-Dichloroethene	ND	(5.5)	[1.103]	ND	(5)	[1.002]	ND	(5.4)	[1.085]	ND	(5.5)	[1.108]
1,2,3-Trichloropropane	ND	(5.5)	[1.103]	ND	(5)	[1.002]	ND	(5.4)	[1.085]	ND	(5.5)	[1.108]
1,2-Dichloroethane	ND	(5.5)	[1.103]	ND	(5)	[1.002]	ND	(5.4)	[1.085]	ND	(5.5)	[1.108]

Compiled: 8 February 1994 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B1

RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	NONE 17 CAN97-17-I 4 - 6			NONE 17 CAN97-17-S 0 - 2			NONE 18 CAN97-18-06 5 - 7			NONE 18 CAN97-18-I 4 - 6		
1,2-Dichloropropane	ND	(5.5)	[1.103]	ND	(5)	[1.002]	ND	(5.4)	[1.085]	ND	(5.5)	[1.108]
2-Chloroethyl vinyl ether	ND	(11)	[1.103]	ND	(10)	[1.002]	ND	(11)	[1.085]	ND	(11)	[1.108]
2-Hexanone	ND	(55)	[1.103]	5 J	(50)	[1.002]	ND	(54)	[1.085]	ND	(55)	[1.108]
4-Methyl-2-pentanone(MIBK)	ND	(55)	[1.103]	ND	(50)	[1.002]	ND	(54)	[1.085]	ND	(55)	[1.108]
Acetone	45 J	(110)	[1.103]	30 J	(100)	[1.002]	ND	(110)	[1.085]	78 J	(110)	[1.108]
Acrolein	ND	(83)	[1.103]	ND	(75)	[1.002]	ND	(81)	[1.085]	ND	(83)	[1.108]
Acrylonitrile	ND	(55)	[1.103]	ND	(50)	[1.002]	ND	(54)	[1.085]	ND	(55)	[1.108]
Benzene	ND	(5.5)	[1.103]	2 J	(5)	[1.002]	ND	(5.4)	[1.085]	ND	(5.5)	[1.108]
Bromodichloromethane	ND	(5.5)	[1.103]	ND	(5)	[1.002]	ND	(5.4)	[1.085]	ND	(5.5)	[1.108]
Bromomethane	ND	(11)	[1.103]	ND	(10)	[1.002]	ND	(11)	[1.085]	ND	(11)	[1.108]
Carbon disulfide	ND	(5.5)	[1.103]	1.8 J	(5)	[1.002]	ND	(5.4)	[1.085]	ND	(5.5)	[1.108]
Carbon tetrachloride	ND	(5.5)	[1.103]	ND	(5)	[1.002]	ND	(5.4)	[1.085]	ND	(5.5)	[1.108]
Chlorobenzene	ND	(5.5)	[1.103]	ND	(5)	[1.002]	ND	(5.4)	[1.085]	ND	(5.5)	[1.108]
Chloroethane	ND	(11)	[1.103]	ND	(10)	[1.002]	ND	(11)	[1.085]	ND	(11)	[1.108]
Chloroform	ND	(5.5)	[1.103]	ND	(5)	[1.002]	ND	(5.4)	[1.085]	ND	(5.5)	[1.108]
Chloromethane	ND	(11)	[1.103]	ND	(10)	[1.002]	ND	(11)	[1.085]	ND	(11)	[1.108]
Dibromochloromethane	ND	(5.5)	[1.103]	ND	(5)	[1.002]	ND	(5.4)	[1.085]	ND	(5.5)	[1.108]
Dibromomethane	ND	(5.5)	[1.103]	ND	(5)	[1.002]	ND	(5.4)	[1.085]	ND	(5.5)	[1.108]
Dichlorodifluoromethane	ND	(22)	[1.103]	ND	(20)	[1.002]	ND	(22)	[1.085]	ND	(22)	[1.108]
Ethyl benzene	ND	(5.5)	[1.103]	ND	(5)	[1.002]	ND	(5.4)	[1.085]	ND	(5.5)	[1.108]
Ethyl methacrylate	ND	(17)	[1.103]	ND	(15)	[1.002]	ND	(16)	[1.085]	ND	(17)	[1.108]
Iodomethane	ND	(5.5)	[1.103]	ND	(5)	[1.002]	ND	(5.4)	[1.085]	ND	(5.5)	[1.108]
Methyl ethyl ketone	ND	(110)	[1.103]	7.1 J	(100)	[1.002]	ND	(110)	[1.085]	ND	(110)	[1.108]
Methylene chloride	ND	(5.5)	[1.103]	86	(5)	[1.002]	ND	(5.4)	[1.085]	ND	(5.5)	[1.108]
Styrene	ND	(5.5)	[1.103]	ND	(5)	[1.002]	ND	(5.4)	[1.085]	ND	(5.5)	[1.108]
Tetrachloroethene	ND	(5.5)	[1.103]	ND	(5)	[1.002]	ND	(5.4)	[1.085]	ND	(5.5)	[1.108]
Toluene	1.1 J	(5.5)	[1.103]	7.8 B	(5)	[1.002]	ND	(5.4)	[1.085]	1.2 J	(5.5)	[1.108]
Tribromomethane(Bromoform)	ND	(5.5)	[1.103]	ND	(5)	[1.002]	ND	(5.4)	[1.085]	ND	(5.5)	[1.108]
Trichloroethene	ND	(5.5)	[1.103]	ND	(5)	[1.002]	ND	(5.4)	[1.085]	ND	(5.5)	[1.108]

Compiled: 8 Feb 1994

() = Reporting Limit [] = Factor = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 17 CAN97-17-I 4 - 6			NONE 17 CAN97-17-S 0 - 2			NONE 18 CAN97-18-06 5 - 7			NONE 18 CAN97-18-I 4 - 6		
Trichlorofluoromethane	ND	(11)	[1.103]	ND	(10)	[1.002]	ND	(11)	[1.085]	ND	(11)	[1.108]
Vinyl acetate	ND	(5.5)	[1.103]	ND	(5)	[1.002]	ND	(5.4)	[1.085]	ND	(5.5)	[1.108]
Vinyl chloride	ND	(11)	[1.103]	ND	(10)	[1.002]	ND	(11)	[1.085]	ND	(11)	[1.108]
Xylenes	ND	(5.5)	[1.103]	ND	(5)	[1.002]	ND	(5.4)	[1.085]	ND	(5.5)	[1.108]
cis-1,3-Dichloropropene	ND	(5.5)	[1.103]	ND	(5)	[1.002]	ND	(5.4)	[1.085]	ND	(5.5)	[1.108]
trans-1,2-Dichloroethene	ND	(5.5)	[1.103]	ND	(5)	[1.002]	ND	(5.4)	[1.085]	ND	(5.5)	[1.108]
trans-1,3-Dichloropropene	ND	(5.5)	[1.103]	ND	(5)	[1.002]	ND	(5.4)	[1.085]	ND	(5.5)	[1.108]
trans-1,4-Dichloro-2-butene	ND	(11)	[1.103]	ND	(10)	[1.002]	ND	(11)	[1.085]	ND	(11)	[1.108]
SW8270 - Semivolatile Organics (ug/kg)												
1,2,4,5-Tetrachlorobenzene	ND	(370)	[.037]	ND	(330)	[.033]	ND	(360)	[.036]	ND	(370)	[.037]
1,2,4-Trichlorobenzene	ND	(370)	[.037]	ND	(330)	[.033]	ND	(360)	[.036]	ND	(370)	[.037]
1,2-Dichlorobenzene	ND	(370)	[.037]	ND	(330)	[.033]	ND	(360)	[.036]	ND	(370)	[.037]
1,2-Diphenylhydrazine	ND	(370)	[.037]	ND	(330)	[.033]	ND	(360)	[.036]	ND	(370)	[.037]
1,3-Dichlorobenzene	ND	(370)	[.037]	ND	(330)	[.033]	ND	(360)	[.036]	ND	(370)	[.037]
1,4-Dichlorobenzene	ND	(370)	[.037]	ND	(330)	[.033]	ND	(360)	[.036]	ND	(370)	[.037]
1-Chloronaphthalene	ND	(370)	[.037]	ND	(330)	[.033]	ND	(360)	[.036]	ND	(370)	[.037]
1-Naphthylamine	ND	(370)	[.037]	ND	(330)	[.033]	ND	(360)	[.036]	ND	(370)	[.037]
2,3,4,6-Tetrachlorophenol	ND	(370)	[.037]	ND	(330)	[.033]	ND	(360)	[.036]	ND	(370)	[.037]
2,4,5-Trichlorophenol	ND	(370)	[.037]	ND	(330)	[.033]	ND	(360)	[.036]	ND	(370)	[.037]
2,4,6-Trichlorophenol	ND	(370)	[.037]	ND	(330)	[.033]	ND	(360)	[.036]	ND	(370)	[.037]
2,4-Dichlorophenol	ND	(370)	[.037]	ND	(330)	[.033]	ND	(360)	[.036]	ND	(370)	[.037]
2,4-Dimethylphenol	ND	(370)	[.037]	ND	(330)	[.033]	ND	(360)	[.036]	ND	(370)	[.037]
2,4-Dinitrophenol	ND	(730)	[.037]	ND	(670)	[.033]	ND	(720)	[.036]	ND	(740)	[.037]
2,4-Dinitrotoluene	ND	(370)	[.037]	ND	(330)	[.033]	ND	(360)	[.036]	ND	(370)	[.037]
2,6-Dichlorophenol	ND	(370)	[.037]	ND	(330)	[.033]	ND	(360)	[.036]	ND	(370)	[.037]
2,6-Dinitrotoluene	ND	(370)	[.037]	ND	(330)	[.033]	ND	(360)	[.036]	ND	(370)	[.037]
2-Chloronaphthalene	ND	(370)	[.037]	ND	(330)	[.033]	ND	(360)	[.036]	ND	(370)	[.037]
2-Chlorophenol	ND	(370)	[.037]	ND	(330)	[.033]	ND	(360)	[.036]	ND	(370)	[.037]
2-Methylnaphthalene	ND	(370)	[.037]	ND	(330)	[.033]	ND	(360)	[.036]	ND	(370)	[.037]

Compiled: 8 February 1994 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B1

RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	NONE 17 CAN97-17-I 4 - 6			NONE 17 CAN97-17-S 0 - 2			NONE 18 CAN97-18-06 5 - 7			NONE 18 CAN97-18-I 4 - 6		
2-Methylphenol(o-cresol)	ND	(370)	[.037]	ND	(330)	[.033]	ND	(360)	[.036]	ND	(370)	[.037]
2-Naphthylamine	ND	(370)	[.037]	ND	(330)	[.033]	ND	(360)	[.036]	ND	(370)	[.037]
2-Nitroaniline	ND	(370)	[.037]	ND	(330)	[.033]	ND	(360)	[.036]	ND	(370)	[.037]
2-Nitrophenol	ND	(370)	[.037]	ND	(330)	[.033]	ND	(360)	[.036]	ND	(370)	[.037]
2-Picoline	ND	(370)	[.037]	ND	(330)	[.033]	ND	(360)	[.036]	ND	(370)	[.037]
3,3'-Dichlorobenzidine	ND	(370)	[.037]	ND	(330)	[.033]	ND	(360)	[.036]	ND	(370)	[.037]
3-Methylcholanthrene	ND	(370)	[.037]	ND	(330)	[.033]	ND	(360)	[.036]	ND	(370)	[.037]
3-Nitroaniline	ND	(730)	[.037]	ND	(670)	[.033]	ND	(720)	[.036]	ND	(740)	[.037]
4,6-Dinitro-2-methylphenol	ND	(370)	[.037]	ND	(330)	[.033]	ND	(360)	[.036]	ND	(370)	[.037]
4-Aminobiphenyl	ND	(370)	[.037]	ND	(330)	[.033]	ND	(360)	[.036]	ND	(370)	[.037]
4-Bromophenyl phenyl ether	ND	(370)	[.037]	ND	(330)	[.033]	ND	(360)	[.036]	ND	(370)	[.037]
4-Chloro-3-methylphenol	ND	(370)	[.037]	ND	(330)	[.033]	ND	(360)	[.036]	ND	(370)	[.037]
4-Chlorophenyl phenyl ether	ND	(370)	[.037]	ND	(330)	[.033]	ND	(360)	[.036]	ND	(370)	[.037]
4-Methylphenol(p-cresol)	ND	(370)	[.037]	ND	(330)	[.033]	ND	(360)	[.036]	ND	(370)	[.037]
4-Nitroaniline	ND	(730)	[.037]	ND	(670)	[.033]	ND	(720)	[.036]	ND	(740)	[.037]
4-Nitrophenol	ND	(370)	[.037]	ND	(330)	[.033]	ND	(360)	[.036]	ND	(370)	[.037]
7,12-Dimethylbenz(a)anthracene	ND	(370)	[.037]	ND	(330)	[.033]	ND	(360)	[.036]	ND	(370)	[.037]
Acenaphthene	ND	(370)	[.037]	ND	(330)	[.033]	ND	(360)	[.036]	ND	(370)	[.037]
Acenaphthylene	ND	(370)	[.037]	ND	(330)	[.033]	ND	(360)	[.036]	ND	(370)	[.037]
Acetophenone	ND	(370)	[.037]	51 J	(330)	[.033]	ND	(360)	[.036]	ND	(370)	[.037]
Aniline	ND	(370)	[.037]	ND	(330)	[.033]	ND	(360)	[.036]	ND	(370)	[.037]
Anthracene	ND	(370)	[.037]	11 J	(330)	[.033]	ND	(360)	[.036]	ND	(370)	[.037]
Benzidine	ND	(370)	[.037]	ND	(330)	[.033]	ND	(360)	[.036]	ND	(370)	[.037]
Benzo(a)anthracene	ND	(370)	[.037]	16 J	(330)	[.033]	ND	(360)	[.036]	ND	(370)	[.037]
Benzo(a)pyrene	ND	(370)	[.037]	180 J	(330)	[.033]	ND	(360)	[.036]	ND	(370)	[.037]
Benzo(b)fluoranthene	ND	(370)	[.037]	180 J	(330)	[.033]	ND	(360)	[.036]	ND	(370)	[.037]
Benzo(g,h,i)perylene	ND	(370)	[.037]	ND	(330)	[.033]	ND	(360)	[.036]	ND	(370)	[.037]
Benzo(k)fluoranthene	ND	(370)	[.037]	180 J	(330)	[.033]	ND	(360)	[.036]	ND	(370)	[.037]
Benzoic acid	ND	(1800)	[.037]	68 J	(1700)	[.033]	ND	(1800)	[.036]	ND	(1800)	[.037]

Compiled: 8 Feb 1994 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

	SITE ID															
	LOCATION ID															
	SAMPLE ID															
	BEG. DEPTH - END DEPTH (FT.)															
PARAMETER	NONE 17 CAN97-17-1 4 - 6				NONE 17 CAN97-17-S 0 - 2				NONE 18 CAN97-18-06 5 - 7				NONE 18 CAN97-18-1 4 - 6			
Benzyl alcohol	ND	(370)	[	.037]	ND	(330)	[	.033]	ND	(360)	[	.036]	ND	(370)	[	.037]
Butylbenzylphthalate	ND	(370)	[	.037]	22 J	(330)	[	.033]	ND	(360)	[	.036]	ND	(370)	[	.037]
Chrysene	ND	(370)	[	.037]	120 J	(330)	[	.033]	ND	(360)	[	.036]	ND	(370)	[	.037]
Di-n-octylphthalate	ND	(370)	[	.037]	ND	(330)	[	.033]	ND	(360)	[	.036]	ND	(370)	[	.037]
Dibenz(a,h)anthracene	ND	(370)	[	.037]	ND	(330)	[	.033]	ND	(360)	[	.036]	ND	(370)	[	.037]
Dibenz(a,j)acridine	ND	(370)	[	.037]	ND	(330)	[	.033]	ND	(360)	[	.036]	ND	(370)	[	.037]
Dibenzofuran	ND	(370)	[	.037]	13 J	(330)	[	.033]	ND	(360)	[	.036]	ND	(370)	[	.037]
Dibutylphthalate	ND	(370)	[	.037]	9.7 J	(330)	[	.033]	ND	(360)	[	.036]	ND	(370)	[	.037]
Diethylphthalate	ND	(370)	[	.037]	ND	(330)	[	.033]	ND	(360)	[	.036]	ND	(370)	[	.037]
Dimethylphenethylamine	ND	(4400)	[	.037]	ND	(4000)	[	.033]	ND	(4300)	[	.036]	ND	(4400)	[	.037]
Dimethylphthalate	ND	(370)	[	.037]	ND	(330)	[	.033]	ND	(360)	[	.036]	ND	(370)	[	.037]
Diphenylamine	ND	(370)	[	.037]	ND	(330)	[	.033]	ND	(360)	[	.036]	ND	(370)	[	.037]
Ethyl methanesulfonate	ND	(370)	[	.037]	ND	(330)	[	.033]	ND	(360)	[	.036]	ND	(370)	[	.037]
Fluoranthene	ND	(370)	[	.037]	33 J	(330)	[	.033]	ND	(360)	[	.036]	ND	(370)	[	.037]
Fluorene	ND	(370)	[	.037]	7.4 J	(330)	[	.033]	ND	(360)	[	.036]	ND	(370)	[	.037]
Hexachlorobenzene	ND	(370)	[	.037]	ND	(330)	[	.033]	ND	(360)	[	.036]	ND	(370)	[	.037]
Hexachlorobutadiene	ND	(370)	[	.037]	ND	(330)	[	.033]	ND	(360)	[	.036]	ND	(370)	[	.037]
Hexachlorocyclopentadiene	ND	(370)	[	.037]	ND	(330)	[	.033]	ND	(360)	[	.036]	ND	(370)	[	.037]
Hexachloroethane	ND	(370)	[	.037]	ND	(330)	[	.033]	ND	(360)	[	.036]	ND	(370)	[	.037]
Indeno(1,2,3-cd)pyrene	ND	(370)	[	.037]	ND	(330)	[	.033]	ND	(360)	[	.036]	ND	(370)	[	.037]
Isophorone	ND	(370)	[	.037]	ND	(330)	[	.033]	ND	(360)	[	.036]	ND	(370)	[	.037]
Methyl methanesulfonate	ND	(1800)	[	.037]	ND	(1700)	[	.033]	ND	(1800)	[	.036]	ND	(1800)	[	.037]
N-Nitroso-di-n-butylamine	ND	(370)	[	.037]	ND	(330)	[	.033]	ND	(360)	[	.036]	ND	(370)	[	.037]
N-Nitrosodimethylamine	ND	(370)	[	.037]	ND	(330)	[	.033]	ND	(360)	[	.036]	ND	(370)	[	.037]
N-Nitrosodiphenylamine	ND	(370)	[	.037]	ND	(330)	[	.033]	ND	(360)	[	.036]	ND	(370)	[	.037]
N-Nitrosodipropylamine	ND	(370)	[	.037]	ND	(330)	[	.033]	ND	(360)	[	.036]	ND	(370)	[	.037]
N-Nitrosopiperidine	ND	(370)	[	.037]	ND	(330)	[	.033]	ND	(360)	[	.036]	ND	(370)	[	.037]
Naphthalene	ND	(370)	[	.037]	ND	(330)	[	.033]	ND	(360)	[	.036]	ND	(370)	[	.037]
Nitrobenzene	ND	(370)	[	.037]	ND	(330)	[	.033]	ND	(360)	[	.036]	ND	(370)	[	.037]

Compiled: 8 February 1994 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B1

RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)																
	NONE 17 CAN97-17-I 4 - 6				NONE 17 CAN97-17-S 0 - 2				NONE 18 CAN97-18-06 5 - 7				NONE 18 CAN97-18-I 4 - 6			
Pentachlorobenzene	ND	(370)	[	.037]	ND	(330)	[	.033]	ND	(360)	[	.036]	ND	(370)	[	.037]
Pentachloronitrobenzene	ND	(370)	[	.037]	ND	(330)	[	.033]	ND	(360)	[	.036]	ND	(370)	[	.037]
Pentachlorophenol	ND	(370)	[	.037]	ND	(330)	[	.033]	ND	(360)	[	.036]	ND	(370)	[	.037]
Phenacetin	ND	(370)	[	.037]	ND	(330)	[	.033]	ND	(360)	[	.036]	ND	(370)	[	.037]
Phenanthrene	ND	(370)	[	.037]	45 J	(330)	[	.033]	ND	(360)	[	.036]	ND	(370)	[	.037]
Phenol	ND	(370)	[	.037]	ND	(330)	[	.033]	ND	(360)	[	.036]	ND	(370)	[	.037]
Pronamide	ND	(370)	[	.037]	ND	(330)	[	.033]	ND	(360)	[	.036]	ND	(370)	[	.037]
Pyrene	ND	(370)	[	.037]	120 J	(330)	[	.033]	ND	(360)	[	.036]	ND	(370)	[	.037]
Pyridine	ND	(370)	[	.037]	ND	(330)	[	.033]	ND	(360)	[	.036]	ND	(370)	[	.037]
Unknown	NA				330	(0)	[	.033]	NA				370	(0)	[	.037]
Unknown C15-Phenol	NA				500	(0)	[	.033]	NA				NA			
Unknown aldehyde	NA				130	(0)	[	.033]	NA				NA			
Unknown alkane	180	(0)	[	.037]	300	(0)	[	.033]	NA				NA			
Unknown carboxylic acid	NA				130	(0)	[	.033]	NA				NA			
bis(2-Chloroethoxy)methane	ND	(370)	[	.037]	ND	(330)	[	.033]	ND	(360)	[	.036]	ND	(370)	[	.037]
bis(2-Chloroethyl)ether	ND	(370)	[	.037]	ND	(330)	[	.033]	ND	(360)	[	.036]	ND	(370)	[	.037]
bis(2-Chloroisopropyl)ether	ND	(370)	[	.037]	ND	(330)	[	.033]	ND	(360)	[	.036]	ND	(370)	[	.037]
bis(2-Ethylhexyl)phthalate	ND	(370)	[	.037]	1300 @	(330)	[	.033]	ND	(360)	[	.036]	ND	(370)	[	.037]
p-Chloroaniline	ND	(370)	[	.037]	ND	(330)	[	.033]	ND	(360)	[	.036]	ND	(370)	[	.037]
p-Dimethylaminoazobenzene	ND	(370)	[	.037]	ND	(330)	[	.033]	ND	(360)	[	.036]	ND	(370)	[	.037]

Compiled: 8 Febr 1994

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TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 18 CAN97-18-S 0 - 2			NONE 19 CAN97-19-06 5 - 7			NONE 19 CAN97-19-I 4 - 6			NONE 19 CAN97-19-S 0 - 2		
EPA 418.1 - Total Recoverable Petroleum Hydrocarbons (mg/kg)												
Hydrocarbons	110 @	(25)	[4.958]	56 @	(26)	[5.228]	180	(26)	[5.249]	400	(25)	[4.928]
SW8015 - Total Petroleum Hydrocarbons (ug/kg)												
Benzene (2)	ND	(30)	[99.600]	ND	(31)	[104.000]	NA			NA		
Diesel (2)	17000 GB@	(5300)	[106.383]	100000 G@	(52000)	[030.927]	NA			NA		
Ethylbenzene (2)	ND	(30)	[99.600]	ND	(31)	[104.000]	NA			NA		
Gasoline (2)	3000 J	(5000)	[99.600]	ND	(5200)	[104.000]	NA			NA		
Jet fuel (2)	ND	(11000)	[106.383]	ND	(100000)	[030.927]	NA			NA		
Kerosene (2)	ND	(11000)	[106.383]	ND	(100000)	[030.927]	NA			NA		
Toluene (2)	260 C	(30)	[99.600]	17 J	(31)	[104.000]	NA			NA		
Xylenes (total) (2)	15 J	(50)	[99.600]	ND C@	(52)	[104.000]	NA			NA		
SW8080 - Organochlorine Pesticides and PCBs (ug/kg)												
4,4'-DDD	ND	(3.4)	[335.345]	0.31 J	(0.35)	[34.853]	0.86 G@	(0.35)	[34.992]	3.8 B@	(3.3)	[334.113]
4,4'-DDE	4.8 @	(3.4)	[335.345]	17	(0.35)	[34.853]	5.9	(0.35)	[34.992]	2.6 J	(3.3)	[334.113]
4,4'-DDT	11 @	(6.7)	[335.345]	8.5	(0.7)	[34.853]	9.2	(0.7)	[34.992]	8 @	(6.7)	[334.113]
Aldrin	ND	(3.4)	[335.345]	ND	(0.35)	[34.853]	ND	(0.35)	[34.992]	ND	(3.3)	[334.113]
Chlordane	ND	(17)	[335.345]	17	(1.7)	[34.853]	10	(1.7)	[34.992]	ND	(17)	[334.113]
Dieldrin	ND	(3.4)	[335.345]	0.37 G@	(0.35)	[34.853]	0.43 @	(0.35)	[34.992]	ND	(3.3)	[334.113]
Endosulfan I	ND	(3.4)	[335.345]	ND	(0.35)	[34.853]	ND	(0.35)	[34.992]	ND	(3.3)	[334.113]
Endosulfan II	ND	(10)	[335.345]	ND	(1)	[34.853]	ND	(1)	[34.992]	ND	(10)	[334.113]
Endosulfan Sulfate	1.6 J	(17)	[335.345]	ND	(1.7)	[34.853]	ND	(1.7)	[34.992]	ND	(17)	[334.113]
Endrin	ND	(3.4)	[335.345]	ND	(0.35)	[34.853]	ND	(0.35)	[34.992]	ND	(3.3)	[334.113]
Endrin Aldehyde	ND	(6.7)	[335.345]	ND	(0.7)	[34.853]	ND	(0.7)	[34.992]	ND	(6.7)	[334.113]
Endrin Ketone	ND	(17)	[335.345]	ND	(1.7)	[34.853]	ND	(1.7)	[34.992]	ND	(17)	[334.113]
Heptachlor	ND	(3.4)	[335.345]	ND	(0.35)	[34.853]	ND	(0.35)	[34.992]	ND	(3.3)	[334.113]
Heptachlor epoxide	ND	(3.4)	[335.345]	ND	(0.35)	[34.853]	ND	(0.35)	[34.992]	ND	(3.3)	[334.113]
Methoxychlor	ND	(17)	[335.345]	ND	(1.7)	[34.853]	ND	(1.7)	[34.992]	ND	(17)	[334.113]
PCB-1016	ND	(34)	[335.345]	ND	(3.5)	[34.853]	ND	(3.5)	[34.992]	ND	(33)	[334.113]
PCB-1221	ND	(67)	[335.345]	ND	(7)	[34.853]	ND	(7)	[34.992]	ND	(67)	[334.113]

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TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID	LOCATION ID	SAMPLE ID	BEG. DEPTH - END DEPTH (FT.)											
	NONE	18	CAN97-18-S	0 - 2			NONE	19	CAN97-19-06	5 - 7			NONE	19	CAN97-19-I	4 - 6			NONE	19	CAN97-19-S	0 - 2		
PCB-1232	ND	(67)	[335.345]				ND	(7)	[34.853]				ND	(7)	[34.992]				ND	(67)	[334.113]			
PCB-1242	ND	(34)	[335.345]				ND	(3.5)	[34.853]				ND	(3.5)	[34.992]				ND	(33)	[334.113]			
PCB-1248	ND	(34)	[335.345]				ND	(3.5)	[34.853]				ND	(3.5)	[34.992]				ND	(33)	[334.113]			
PCB-1254	ND	(67)	[335.345]				ND	(7)	[34.853]				ND	(7)	[34.992]				ND	(67)	[334.113]			
PCB-1260	ND	(67)	[335.345]				ND	(7)	[34.853]				ND	(7)	[34.992]				ND	(67)	[334.113]			
Toxaphene	ND	(170)	[335.345]				ND	(17)	[34.853]				ND	(17)	[34.992]				ND	(170)	[334.113]			
alpha-BHC	ND	(3.4)	[335.345]				ND	(0.35)	[34.853]				ND	(0.35)	[34.992]				ND	(3.3)	[334.113]			
beta-BHC	ND	(3.4)	[335.345]				ND	(0.35)	[34.853]				ND	(0.35)	[34.992]				ND	(3.3)	[334.113]			
delta-BHC	ND	(3.4)	[335.345]				ND	(0.35)	[34.853]				ND	(0.35)	[34.992]				ND	(3.3)	[334.113]			
gamma-BHC	1.6 J	(3.4)	[335.345]				0.34 J	(0.35)	[34.853]				0.31 J	(0.35)	[34.992]				ND	(3.3)	[334.113]			
SW8150 - Chlorinated Herbicides (ug/kg)																								
2,4,5-T	9.6 G@	(6.7)	[33.530]				ND	(7)	[34.855]				NA						NA					
2,4,5-TP (Silvex)	17 G@	(5.7)	[33.530]				13 G@	(5.9)	[34.855]				NA						NA					
2,4-D	8.2 J	(40)	[33.530]				ND	(42)	[34.855]				NA						NA					
2,4-DB	ND	(31)	[33.530]				5.6 J	(32)	[34.855]				NA						NA					
Dalapon	ND	(190)	[33.530]				ND	(200)	[34.855]				NA						NA					
Dicamba	ND	(9.1)	[33.530]				ND	(9.4)	[34.855]				NA						NA					
Dichloroprop	190 G	(22)	[33.530]				16 J	(23)	[34.855]				NA						NA					
Dinoseb	ND	(5)	[33.530]				ND	(5.2)	[34.855]				NA						NA					
MCPA	ND	(8300)	[33.530]				ND	(8700)	[34.855]				NA						NA					
MCPP	ND	(6400)	[33.530]				ND	(6700)	[34.855]				NA						NA					
SW8240 - Volatile Organics (ug/kg)																								
1,1,1-Trichloroethane	ND	(5)	[1.006]				ND	(5.2)	[1.046]				ND	(5.2)	[1.050]				ND	(5)	[1.004]			
1,1,2,2-Tetrachloroethane	ND	(5)	[1.006]				ND	(5.2)	[1.046]				ND	(5.2)	[1.050]				ND	(5)	[1.004]			
1,1,2-Trichloroethane	ND	(5)	[1.006]				ND	(5.2)	[1.046]				ND	(5.2)	[1.050]				ND	(5)	[1.004]			
1,1-Dichloroethane	ND	(5)	[1.006]				ND	(5.2)	[1.046]				ND	(5.2)	[1.050]				ND	(5)	[1.004]			
1,1-Dichloroethene	ND	(5)	[1.006]				ND	(5.2)	[1.046]				ND	(5.2)	[1.050]				ND	(5)	[1.004]			
1,2,3-Trichloropropane	ND	(5)	[1.006]				ND	(5.2)	[1.046]				ND	(5.2)	[1.050]				ND	(5)	[1.004]			
1,2-Dichloroethane	ND	(5)	[1.006]				ND	(5.2)	[1.046]				ND	(5.2)	[1.050]				ND	(5)	[1.004]			

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TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

	SITE ID											
	LOCATION ID											
	SAMPLE ID											
	BEG. DEPTH - END DEPTH (FT.)											
PARAMETER	NONE 18 CAN97-18-S 0 - 2			NONE 19 CAN97-19-06 5 - 7			NONE 19 CAN97-19-1 4 - 6			NONE 19 CAN97-19-S 0 - 2		
1,2-Dichloropropane	ND	(5)	[1.006]	ND	(5.2)	[1.046]	ND	(5.2)	[1.050]	ND	(5)	[1.004]
2-Chloroethyl vinyl ether	ND	(10)	[1.006]	ND	(10)	[1.046]	ND	(10)	[1.050]	ND	(10)	[1.004]
2-Hexanone	ND	(50)	[1.006]	ND	(52)	[1.046]	ND	(52)	[1.050]	ND	(50)	[1.004]
4-Methyl-2-pentanone(MIBK)	ND	(50)	[1.006]	ND	(52)	[1.046]	ND	(52)	[1.050]	ND	(50)	[1.004]
Acetone	ND	(100)	[1.006]	ND	(100)	[1.046]	ND	(100)	[1.050]	ND	(100)	[1.004]
Acrolein	ND	(75)	[1.006]	ND	(78)	[1.046]	ND	(79)	[1.050]	ND	(75)	[1.004]
Acrylonitrile	ND	(50)	[1.006]	ND	(52)	[1.046]	ND	(52)	[1.050]	ND	(50)	[1.004]
Benzene	ND	(5)	[1.006]	ND	(5.2)	[1.046]	ND	(5.2)	[1.050]	2.7 J	(5)	[1.004]
Bromodichloromethane	ND	(5)	[1.006]	ND	(5.2)	[1.046]	ND	(5.2)	[1.050]	ND	(5)	[1.004]
Bromomethane	ND	(10)	[1.006]	ND	(10)	[1.046]	ND	(10)	[1.050]	ND	(10)	[1.004]
Carbon disulfide	ND	(5)	[1.006]	3 J	(5.2)	[1.046]	ND	(5.2)	[1.050]	ND	(5)	[1.004]
Carbon tetrachloride	ND	(5)	[1.006]	ND	(5.2)	[1.046]	ND	(5.2)	[1.050]	ND	(5)	[1.004]
Chlorobenzene	ND	(5)	[1.006]	ND	(5.2)	[1.046]	ND	(5.2)	[1.050]	ND	(5)	[1.004]
Chloroethane	ND	(10)	[1.006]	ND	(10)	[1.046]	ND	(10)	[1.050]	ND	(10)	[1.004]
Chloroform	ND	(5)	[1.006]	ND	(5.2)	[1.046]	ND	(5.2)	[1.050]	ND	(5)	[1.004]
Chloromethane	ND	(10)	[1.006]	ND	(10)	[1.046]	ND	(10)	[1.050]	ND	(10)	[1.004]
Dibromochloromethane	ND	(5)	[1.006]	ND	(5.2)	[1.046]	ND	(5.2)	[1.050]	ND	(5)	[1.004]
Dibromomethane	ND	(5)	[1.006]	ND	(5.2)	[1.046]	ND	(5.2)	[1.050]	ND	(5)	[1.004]
Dichlorodifluoromethane	ND	(20)	[1.006]	ND	(21)	[1.046]	ND	(21)	[1.050]	ND	(20)	[1.004]
Ethyl benzene	ND	(5)	[1.006]	ND	(5.2)	[1.046]	ND	(5.2)	[1.050]	ND	(5)	[1.004]
Ethyl methacrylate	ND	(15)	[1.006]	ND	(16)	[1.046]	ND	(16)	[1.050]	ND	(15)	[1.004]
Iodomethane	ND	(5)	[1.006]	ND	(5.2)	[1.046]	ND	(5.2)	[1.050]	ND	(5)	[1.004]
Methyl ethyl ketone	ND	(100)	[1.006]	ND	(100)	[1.046]	ND	(100)	[1.050]	ND	(100)	[1.004]
Methylene chloride	6.6 B	(5)	[1.006]	ND	(5.2)	[1.046]	ND	(5.2)	[1.050]	43	(5)	[1.004]
Styrene	ND	(5)	[1.006]	ND	(5.2)	[1.046]	ND	(5.2)	[1.050]	ND	(5)	[1.004]
Tetrachloroethene	ND	(5)	[1.006]	ND	(5.2)	[1.046]	ND	(5.2)	[1.050]	ND	(5)	[1.004]
Toluene	25	(5)	[1.006]	ND	(5.2)	[1.046]	0.79 J	(5.2)	[1.050]	21 B	(5)	[1.004]
Tribromomethane(Bromoform)	ND	(5)	[1.006]	ND	(5.2)	[1.046]	ND	(5.2)	[1.050]	ND	(5)	[1.004]
Trichloroethene	ND	(5)	[1.006]	ND	(5.2)	[1.046]	ND	(5.2)	[1.050]	ND	(5)	[1.004]

Compiled: 8 February 1994 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID	LOCATION ID	SAMPLE ID	BEG. DEPTH - END DEPTH (FT.)												
	NONE	18	CAN97-18-S	0 - 2			NONE	19	CAN97-19-06	5 - 7			NONE	19	CAN97-19-I	4 - 6			NONE	19	CAN97-19-S	0 - 2		
Trichlorofluoromethane	ND	(10)	[	1.006]	ND	(10)	[	1.046]	ND	(10)	[	1.050]	ND	(10)	[	1.004]
Vinyl acetate	ND	(5)	[	1.006]	ND	(5.2)	[	1.046]	ND	(5.2)	[	1.050]	ND	(5)	[	1.004]
Vinyl chloride	ND	(10)	[	1.006]	ND	(10)	[	1.046]	ND	(10)	[	1.050]	ND	(10)	[	1.004]
Xylenes	1.4 J	(5)	[	1.006]	ND	(5.2)	[	1.046]	ND	(5.2)	[	1.050]	ND	(5)	[	1.004]
cis-1,3-Dichloropropene	ND	(5)	[	1.006]	ND	(5.2)	[	1.046]	ND	(5.2)	[	1.050]	ND	(5)	[	1.004]
trans-1,2-Dichloroethene	ND	(5)	[	1.006]	ND	(5.2)	[	1.046]	ND	(5.2)	[	1.050]	ND	(5)	[	1.004]
trans-1,3-Dichloropropene	ND	(5)	[	1.006]	ND	(5.2)	[	1.046]	ND	(5.2)	[	1.050]	ND	(5)	[	1.004]
trans-1,4-Dichloro-2-butene	ND	(10)	[	1.006]	ND	(10)	[	1.046]	ND	(10)	[	1.050]	ND	(10)	[	1.004]
SW8270 - Semivolatile Organics (ug/kg)																
1,2,4,5-Tetrachlorobenzene	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(330)	[	.034]
1,2,4-Trichlorobenzene	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(330)	[	.034]
1,2-Dichlorobenzene	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(330)	[	.034]
1,2-Diphenylhydrazine	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(330)	[	.034]
1,3-Dichlorobenzene	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(330)	[	.034]
1,4-Dichlorobenzene	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(330)	[	.034]
1-Chloronaphthalene	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(330)	[	.034]
1-Naphthylamine	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(330)	[	.034]
2,3,4,6-Tetrachlorophenol	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(330)	[	.034]
2,4,5-Trichlorophenol	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(330)	[	.034]
2,4,6-Trichlorophenol	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(330)	[	.034]
2,4-Dichlorophenol	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(330)	[	.034]
2,4-Dimethylphenol	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(330)	[	.034]
2,4-Dinitrophenol	ND	(670)	[	.034]	ND	(690)	[	.035]	ND	(700)	[	.035]	ND	(670)	[	.034]
2,4-Dinitrotoluene	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(330)	[	.034]
2,6-Dichlorophenol	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(330)	[	.034]
2,6-Dinitrotoluene	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(330)	[	.034]
2-Chloronaphthalene	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(330)	[	.034]
2-Chlorophenol	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(330)	[	.034]
2-Methylnaphthalene	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(330)	[	.034]

Compiled: 8 Febr 1994 () = Reporting Limit [] = Factor Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID	LOCATION ID	SAMPLE ID	BEG. DEPTH - END DEPTH (FT.)										
	NONE	18	CAN97-18-S	0 - 2	NONE	19	CAN97-19-06	5 - 7	NONE	19	CAN97-19-I	4 - 6	NONE	19	CAN97-19-S	0 - 2
Trichlorofluoromethane	ND	(10)	[1.006]		ND	(10)	[1.046]		ND	(10)	[1.050]		ND	(10)	[1.004]	
Vinyl acetate	ND	(5)	[1.006]		ND	(5.2)	[1.046]		ND	(5.2)	[1.050]		ND	(5)	[1.004]	
Vinyl chloride	ND	(10)	[1.006]		ND	(10)	[1.046]		ND	(10)	[1.050]		ND	(10)	[1.004]	
Xylenes	1.4 J	(5)	[1.006]		ND	(5.2)	[1.046]		ND	(5.2)	[1.050]		ND	(5)	[1.004]	
cis-1,3-Dichloropropene	ND	(5)	[1.006]		ND	(5.2)	[1.046]		ND	(5.2)	[1.050]		ND	(5)	[1.004]	
trans-1,2-Dichloroethene	ND	(5)	[1.006]		ND	(5.2)	[1.046]		ND	(5.2)	[1.050]		ND	(5)	[1.004]	
trans-1,3-Dichloropropene	ND	(5)	[1.006]		ND	(5.2)	[1.046]		ND	(5.2)	[1.050]		ND	(5)	[1.004]	
trans-1,4-Dichloro-2-butene	ND	(10)	[1.006]		ND	(10)	[1.046]		ND	(10)	[1.050]		ND	(10)	[1.004]	
SW8270 - Semivolatile Organics (ug/kg)																
1,2,4,5-Tetrachlorobenzene	ND	(340)	[.034]		ND	(350)	[.035]		ND	(350)	[.035]		ND	(330)	[.034]	
1,2,4-Trichlorobenzene	ND	(340)	[.034]		ND	(350)	[.035]		ND	(350)	[.035]		ND	(330)	[.034]	
1,2-Dichlorobenzene	ND	(340)	[.034]		ND	(350)	[.035]		ND	(350)	[.035]		ND	(330)	[.034]	
1,2-Diphenylhydrazine	ND	(340)	[.034]		ND	(350)	[.035]		ND	(350)	[.035]		ND	(330)	[.034]	
1,3-Dichlorobenzene	ND	(340)	[.034]		ND	(350)	[.035]		ND	(350)	[.035]		ND	(330)	[.034]	
1,4-Dichlorobenzene	ND	(340)	[.034]		ND	(350)	[.035]		ND	(350)	[.035]		ND	(330)	[.034]	
1-Chloronaphthalene	ND	(340)	[.034]		ND	(350)	[.035]		ND	(350)	[.035]		ND	(330)	[.034]	
1-Naphthylamine	ND	(340)	[.034]		ND	(350)	[.035]		ND	(350)	[.035]		ND	(330)	[.034]	
2,3,4,6-Tetrachlorophenol	ND	(340)	[.034]		ND	(350)	[.035]		ND	(350)	[.035]		ND	(330)	[.034]	
2,4,5-Trichlorophenol	ND	(340)	[.034]		ND	(350)	[.035]		ND	(350)	[.035]		ND	(330)	[.034]	
2,4,6-Trichlorophenol	ND	(340)	[.034]		ND	(350)	[.035]		ND	(350)	[.035]		ND	(330)	[.034]	
2,4-Dichlorophenol	ND	(340)	[.034]		ND	(350)	[.035]		ND	(350)	[.035]		ND	(330)	[.034]	
2,4-Dimethylphenol	ND	(340)	[.034]		ND	(350)	[.035]		ND	(350)	[.035]		ND	(330)	[.034]	
2,4-Dinitrophenol	ND	(670)	[.034]		ND	(690)	[.035]		ND	(700)	[.035]		ND	(670)	[.034]	
2,4-Dinitrotoluene	ND	(340)	[.034]		ND	(350)	[.035]		ND	(350)	[.035]		ND	(330)	[.034]	
2,6-Dichlorophenol	ND	(340)	[.034]		ND	(350)	[.035]		ND	(350)	[.035]		ND	(330)	[.034]	
2,6-Dinitrotoluene	ND	(340)	[.034]		ND	(350)	[.035]		ND	(350)	[.035]		ND	(330)	[.034]	
2-Chloronaphthalene	ND	(340)	[.034]		ND	(350)	[.035]		ND	(350)	[.035]		ND	(330)	[.034]	
2-Chlorophenol	ND	(340)	[.034]		ND	(350)	[.035]		ND	(350)	[.035]		ND	(330)	[.034]	
2-Methylnaphthalene	ND	(340)	[.034]		ND	(350)	[.035]		ND	(350)	[.035]		ND	(330)	[.034]	

Compiled: 8 February 1994 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

SITE ID	NONE			NONE			NONE			NONE		
LOCATION ID	18			19			19			19		
SAMPLE ID	CAN97-18-S			CAN97-19-06			CAN97-19-I			CAN97-19-S		
BEG. DEPTH - END DEPTH (FT.)	0 - 2			5 - 7			4 - 6			0 - 2		
PARAMETER												
2-Methylphenol(o-cresol)	ND	(340)	[.034]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(330)	[.034]
2-Naphthylamine	ND	(340)	[.034]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(330)	[.034]
2-Nitroaniline	ND	(340)	[.034]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(330)	[.034]
2-Nitrophenol	ND	(340)	[.034]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(330)	[.034]
2-Picoline	ND	(340)	[.034]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(330)	[.034]
3,3'-Dichlorobenzidine	ND	(340)	[.034]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(330)	[.034]
3-Methylcholanthrene	ND	(340)	[.034]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(330)	[.034]
3-Nitroaniline	ND	(670)	[.034]	ND	(690)	[.035]	ND	(700)	[.035]	ND	(670)	[.034]
4,6-Dinitro-2-methylphenol	ND	(340)	[.034]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(330)	[.034]
4-Aminobiphenyl	ND	(340)	[.034]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(330)	[.034]
4-Bromophenyl phenyl ether	ND	(340)	[.034]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(330)	[.034]
4-Chloro-3-methylphenol	ND	(340)	[.034]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(330)	[.034]
4-Chlorophenyl phenyl ether	ND	(340)	[.034]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(330)	[.034]
4-Methylphenol(p-cresol)	ND	(340)	[.034]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(330)	[.034]
4-Nitroaniline	ND	(670)	[.034]	ND	(690)	[.035]	ND	(700)	[.035]	ND	(670)	[.034]
4-Nitrophenol	ND	(340)	[.034]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(330)	[.034]
7,12-Dimethylbenz(a)anthracene	ND	(340)	[.034]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(330)	[.034]
Acenaphthene	ND	(340)	[.034]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(330)	[.034]
Acenaphthylene	ND	(340)	[.034]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(330)	[.034]
Acetophenone	ND	(340)	[.034]	ND	(350)	[.035]	ND	(350)	[.035]	23 JB	(330)	[.034]
Aniline	ND	(340)	[.034]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(330)	[.034]
Anthracene	ND	(340)	[.034]	ND	(350)	[.035]	21 J	(350)	[.035]	ND	(330)	[.034]
Benzidine	ND	(340)	[.034]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(330)	[.034]
Benzo(a)anthracene	ND	(340)	[.034]	43 J	(350)	[.035]	120 J	(350)	[.035]	27 J	(330)	[.034]
Benzo(a)pyrene	ND	(340)	[.034]	37 J	(350)	[.035]	100 J	(350)	[.035]	30 J	(330)	[.034]
Benzo(b)fluoranthene	ND	(340)	[.034]	77 JX	(350)	[.035]	210 JX	(350)	[.035]	52 JX	(330)	[.034]
Benzo(g,h,i)perylene	ND	(340)	[.034]	22 J	(350)	[.035]	51 J	(350)	[.035]	19 J	(330)	[.034]
Benzo(k)fluoranthene	ND	(340)	[.034]	77 JX	(350)	[.035]	210 JX	(350)	[.035]	52 JX	(330)	[.034]
Benzoic acid	ND	(1700)	[.034]	ND	(1700)	[.035]	ND	(1700)	[.035]	ND	(1700)	[.034]

Compiled: 8 Fe' -y 1994 () = Reporting Limit [] = Factor ' = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)																
	NONE 18 CAN97-18-S 0 - 2				NONE 19 CAN97-19-06 5 - 7				NONE 19 CAN97-19-I 4 - 6				NONE 19 CAN97-19-S 0 - 2			
Benzyl alcohol	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(330)	[	.034]
Butylbenzylphthalate	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(330)	[	.034]
Chrysene	ND	(340)	[	.034]	41 J	(350)	[	.035]	120 J	(350)	[	.035]	31 J	(330)	[	.034]
Di-n-octylphthalate	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(330)	[	.034]
Dibenz(a,h)anthracene	ND	(340)	[	.034]	ND	(350)	[	.035]	19 J	(350)	[	.035]	ND	(330)	[	.034]
Dibenz(a,j)acridine	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(330)	[	.034]
Dibenzofuran	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(330)	[	.034]
Dibutylphthalate	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(330)	[	.034]
Diethylphthalate	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(330)	[	.034]
Dimethylphenethylamine	ND	(4000)	[	.034]	ND	(4200)	[	.035]	ND	(4200)	[	.035]	ND	(4000)	[	.034]
Dimethylphthalate	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(330)	[	.034]
Diphenylamine	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(330)	[	.034]
Ethyl methanesulfonate	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(330)	[	.034]
Fluoranthene	ND	(340)	[	.034]	74 J	(350)	[	.035]	240 J	(350)	[	.035]	52 J	(330)	[	.034]
Fluorene	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(330)	[	.034]
Hexachlorobenzene	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(330)	[	.034]
Hexachlorobutadiene	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(330)	[	.034]
Hexachlorocyclopentadiene	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(330)	[	.034]
Hexachloroethane	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(330)	[	.034]
Indeno(1,2,3-cd)pyrene	ND	(340)	[	.034]	24 J	(350)	[	.035]	46 J	(350)	[	.035]	16 J	(330)	[	.034]
Isophorone	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(330)	[	.034]
Methyl methanesulfonate	ND	(1700)	[	.034]	ND	(1700)	[	.035]	ND	(1700)	[	.035]	ND	(1700)	[	.034]
N-Nitroso-di-n-butylamine	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(330)	[	.034]
N-Nitrosodimethylamine	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(330)	[	.034]
N-Nitrosodiphenylamine	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(330)	[	.034]
N-Nitrosodipropylamine	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(330)	[	.034]
N-Nitrosopiperidine	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(330)	[	.034]
Naphthalene	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(330)	[	.034]
Nitrobenzene	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(330)	[	.034]

Compiled: 8 February 1994 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID	LOCATION ID	SAMPLE ID	BEG. DEPTH - END DEPTH (FT.)																
	NONE	18	CAN97-18-S	0 - 2				NONE	19	CAN97-19-06	5 - 7			NONE	19	CAN97-19-I	4 - 6			NONE	19	CAN97-19-S	0 - 2		
Pentachlorobenzene	ND		(340)	[	.034]	ND		(350)	[	.035]	ND		(350)	[	.035]	ND		(330)	[	.034]
Pentachloronitrobenzene	ND		(340)	[	.034]	ND		(350)	[	.035]	ND		(350)	[	.035]	ND		(330)	[	.034]
Pentachlorophenol	ND		(340)	[	.034]	ND		(350)	[	.035]	ND		(350)	[	.035]	ND		(330)	[	.034]
Phenacetin	ND		(340)	[	.034]	ND		(350)	[	.035]	ND		(350)	[	.035]	ND		(330)	[	.034]
Phenanthrene	ND		(340)	[	.034]	36	J	(350)	[	.035]	87	J	(350)	[	.035]	39	J	(330)	[	.034]
Phenol	ND		(340)	[	.034]	ND		(350)	[	.035]	ND		(350)	[	.035]	ND		(330)	[	.034]
Pronamide	ND		(340)	[	.034]	ND		(350)	[	.035]	ND		(350)	[	.035]	ND		(330)	[	.034]
Pyrene	ND		(340)	[	.034]	69	J	(350)	[	.035]	180	J	(350)	[	.035]	44	J	(330)	[	.034]
Pyridine	ND		(340)	[	.034]	ND		(350)	[	.035]	ND		(350)	[	.035]	ND		(330)	[	.034]
Unknown	770		(0)	[	.034]	380		(0)	[	.035]	280		(0)	[	.035]	130		(0)	[	.034]
Unknown B	NA					NA					NA					270		(0)	[	.034]
Unknown aldehyde	1400		(0)	[	.034]	NA					280		(0)	[	.035]	NA				
Unknown alkane	570		(0)	[	.034]	170		(0)	[	.035]	240		(0)	[	.035]	230		(0)	[	.034]
Unknown carboxylic acid	170		(0)	[	.034]	NA					170		(0)	[	.035]	NA				
Unknown sterol	1100		(0)	[	.034]	NA					NA					NA				
bis(2-Chloroethoxy)methane	ND		(340)	[	.034]	ND		(350)	[	.035]	ND		(350)	[	.035]	ND		(330)	[	.034]
bis(2-Chloroethyl)ether	ND		(340)	[	.034]	ND		(350)	[	.035]	ND		(350)	[	.035]	ND		(330)	[	.034]
bis(2-Chloroisopropyl)ether	ND		(340)	[	.034]	ND		(350)	[	.035]	ND		(350)	[	.035]	ND		(330)	[	.034]
bis(2-Ethylhexyl)phthalate	ND		(340)	[	.034]	ND		(350)	[	.035]	ND		(350)	[	.035]	48	JB	(330)	[	.034]
p-Chloroaniline	ND		(340)	[	.034]	ND		(350)	[	.035]	ND		(350)	[	.035]	ND		(330)	[	.034]
p-Dimethylaminoazobenzene	ND		(340)	[	.034]	ND		(350)	[	.035]	ND		(350)	[	.035]	ND		(330)	[	.034]

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID											
	LOCATION ID											
	SAMPLE ID											
	BEG. DEPTH - END DEPTH (FT.)											
	NONE			NONE			NONE			NONE		
	19			20			20			20		
	CAN97-19-99 Dup of CAN97-19-S			CAN97-20-06			CAN97-20-I			CAN97-20-S		
	0 - 2			7 - 9			4 - 6			0 - 2		
EPA 418.1 - Total Recoverable Petroleum Hydrocarbons (mg/kg)												
Hydrocarbons	340	(25)	[4.934]	6.4 @	(27)	[5.309]	33 @	(27)	[5.425]	610	(25)	[5.003]
SW8015 - Total Petroleum Hydrocarbons (ug/kg)												
Benzene (2)	NA			NA			ND	(32)	[107.000]	NA		
Diesel (2)	NA			NA			19000 GB@	(5000)	[100.000]	NA		
Ethylbenzene (2)	NA			NA			ND	(32)	[107.000]	NA		
Gasoline (2)	NA			NA			ND	(5400)	[107.000]	NA		
Jet fuel (2)	NA			NA			ND	(10000)	[100.000]	NA		
Kerosene (2)	NA			NA			ND	(10000)	[100.000]	NA		
Toluene (2)	NA			NA			ND	(32)	[107.000]	NA		
Xylenes (total) (2)	NA			NA			ND	(54)	[107.000]	NA		
SW8080 - Organochlorine Pesticides and PCBs (ug/kg)												
4,4'-DDD	4.2 B@	(3.4)	[335.121]	ND	(0.36)	[35.676]	ND	(0.36)	[36.390]	9.9 B@	(3.4)	[339.905]
4,4'-DDE	3.5 @	(3.4)	[335.121]	ND	(0.36)	[35.676]	ND	(0.36)	[36.390]	1.6 J	(3.4)	[339.905]
4,4'-DDT	10 @	(6.7)	[335.121]	ND	(0.71)	[35.676]	1.1 @	(0.73)	[36.390]	ND	(6.8)	[339.905]
Aldrin	ND	(3.4)	[335.121]	ND	(0.36)	[35.676]	ND	(0.36)	[36.390]	ND	(3.4)	[339.905]
Chlordane	ND	(17)	[335.121]	ND	(1.8)	[35.676]	ND	(1.8)	[36.390]	ND	(17)	[339.905]
Dieldrin	ND	(3.4)	[335.121]	ND	(0.36)	[35.676]	ND	(0.36)	[36.390]	ND	(3.4)	[339.905]
Endosulfan I	ND	(3.4)	[335.121]	ND	(0.36)	[35.676]	ND	(0.36)	[36.390]	ND	(3.4)	[339.905]
Endosulfan II	ND	(10)	[335.121]	ND	(1.1)	[35.676]	ND	(1.1)	[36.390]	ND	(10)	[339.905]
Endosulfan Sulfate	ND	(17)	[335.121]	ND	(1.8)	[35.676]	ND	(1.8)	[36.390]	38 G@	(17)	[339.905]
Endrin	ND	(3.4)	[335.121]	ND	(0.36)	[35.676]	ND	(0.36)	[36.390]	ND	(3.4)	[339.905]
Endrin Aldehyde	ND	(6.7)	[335.121]	ND	(0.71)	[35.676]	ND	(0.73)	[36.390]	ND	(6.8)	[339.905]
Endrin Ketone	ND	(17)	[335.121]	ND	(1.8)	[35.676]	ND	(1.8)	[36.390]	ND	(17)	[339.905]
Heptachlor	ND	(3.4)	[335.121]	ND	(0.36)	[35.676]	ND	(0.36)	[36.390]	ND	(3.4)	[339.905]
Heptachlor epoxide	ND	(3.4)	[335.121]	0.041 J	(0.36)	[35.676]	ND	(0.36)	[36.390]	ND	(3.4)	[339.905]
Methoxychlor	ND	(17)	[335.121]	ND	(1.8)	[35.676]	ND	(1.8)	[36.390]	ND	(17)	[339.905]
PCB-1016	ND	(34)	[335.121]	ND	(3.6)	[35.676]	ND	(3.6)	[36.390]	ND	(34)	[339.905]
PCB-1221	ND	(67)	[335.121]	ND	(7.1)	[35.676]	ND	(7.3)	[36.390]	ND	(68)	[339.905]

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TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 19 CAN97-19-99 Dup of CAN97-19-S 0 - 2			NONE 20 CAN97-20-06 7 - 9			NONE 20 CAN97-20-I 4 - 6			NONE 20 CAN97-20-S 0 - 2		
PCB-1232	ND	(67)	[335.121]	ND	(7.1)	[35.676]	ND	(7.3)	[36.390]	ND	(68)	[339.905]
PCB-1242	ND	(34)	[335.121]	ND	(3.6)	[35.676]	ND	(3.6)	[36.390]	ND	(34)	[339.905]
PCB-1248	ND	(34)	[335.121]	ND	(3.6)	[35.676]	ND	(3.6)	[36.390]	ND	(34)	[339.905]
PCB-1254	ND	(67)	[335.121]	ND	(7.1)	[35.676]	ND	(7.3)	[36.390]	ND	(68)	[339.905]
PCB-1260	ND	(67)	[335.121]	ND	(7.1)	[35.676]	ND	(7.3)	[36.390]	ND	(68)	[339.905]
Toxaphene	ND	(170)	[335.121]	ND	(18)	[35.676]	ND	(18)	[36.390]	ND	(170)	[339.905]
alpha-BHC	ND	(3.4)	[335.121]	ND	(0.36)	[35.676]	ND	(0.36)	[36.390]	ND	(3.4)	[339.905]
beta-BHC	ND	(3.4)	[335.121]	ND	(0.36)	[35.676]	ND	(0.36)	[36.390]	ND	(3.4)	[339.905]
delta-BHC	ND	(3.4)	[335.121]	ND	(0.36)	[35.676]	ND	(0.36)	[36.390]	ND	(3.4)	[339.905]
gamma-BHC	ND	(3.4)	[335.121]	ND	(0.36)	[35.676]	ND	(0.36)	[36.390]	ND	(3.4)	[339.905]
SW8150 - Chlorinated Herbicides (ug/kg)												
2,4,5-T	NA			NA			ND	(7.3)	[36.456]	NA		
2,4,5-TP (Silvex)	NA			NA			4.5 J	(6.2)	[36.456]	NA		
2,4-D	NA			NA			ND	(44)	[36.456]	NA		
2,4-DB	NA			NA			4.8 J	(33)	[36.456]	NA		
Dalapon	NA			NA			ND	(210)	[36.456]	NA		
Dicamba	NA			NA			ND	(9.8)	[36.456]	NA		
Dichloroprop	NA			NA			ND	(24)	[36.456]	NA		
Dinoseb	NA			NA			ND	(5.5)	[36.456]	NA		
MCPA	NA			NA			ND	(9100)	[36.456]	NA		
MCPP	NA			NA			ND	(7000)	[36.456]	NA		
SW8240 - Volatile Organics (ug/kg)												
1,1,1-Trichloroethane	ND	(5)	[1.006]	ND	(5.4)	[1.070]	ND	(5.5)	[1.094]	ND	(5.1)	[1.020]
1,1,2,2-Tetrachloroethane	ND	(5)	[1.006]	ND	(5.4)	[1.070]	ND	(5.5)	[1.094]	ND	(5.1)	[1.020]
1,1,2-Trichloroethane	ND	(5)	[1.006]	ND	(5.4)	[1.070]	ND	(5.5)	[1.094]	ND	(5.1)	[1.020]
1,1-Dichloroethane	ND	(5)	[1.006]	ND	(5.4)	[1.070]	ND	(5.5)	[1.094]	ND	(5.1)	[1.020]
1,1-Dichloroethene	ND	(5)	[1.006]	ND	(5.4)	[1.070]	ND	(5.5)	[1.094]	ND	(5.1)	[1.020]
1,2,3-Trichloropropane	ND	(5)	[1.006]	ND	(5.4)	[1.070]	ND	(5.5)	[1.094]	ND	(5.1)	[1.020]
1,2-Dichloroethane	ND	(5)	[1.006]	ND	(5.4)	[1.070]	ND	(5.5)	[1.094]	ND	(5.1)	[1.020]

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TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)														
	NONE 19 CAN97-19-99 Dup of CAN97-19-S 0 - 2			NONE 20 CAN97-20-06 7 - 9			NONE 20 CAN97-20-I 4 - 6			NONE 20 CAN97-20-S 0 - 2		
1,2-Dichloropropane	ND	(5)	[1.006]	ND	(5.4)	[1.070]	ND	(5.5)	[1.094]	ND	(5.1)	[1.020]
2-Chloroethyl vinyl ether	ND	(10)	[1.006]	ND	(11)	[1.070]	ND	(11)	[1.094]	ND	(10)	[1.020]
2-Hexanone	ND	(50)	[1.006]	ND	(54)	[1.070]	ND	(55)	[1.094]	ND	(51)	[1.020]
4-Methyl-2-pentanone(MIBK)	ND	(50)	[1.006]	ND	(54)	[1.070]	ND	(55)	[1.094]	ND	(51)	[1.020]
Acetone	16 J	(100)	[1.006]	ND	(110)	[1.070]	ND	(110)	[1.094]	31 J	(100)	[1.020]
Acrolein	ND	(75)	[1.006]	ND	(80)	[1.070]	ND	(82)	[1.094]	ND	(77)	[1.020]
Acrylonitrile	ND	(50)	[1.006]	ND	(54)	[1.070]	ND	(55)	[1.094]	ND	(51)	[1.020]
Benzene	3.1 J	(5)	[1.006]	ND	(5.4)	[1.070]	ND	(5.5)	[1.094]	2.8 J	(5.1)	[1.020]
Bromodichloromethane	ND	(5)	[1.006]	ND	(5.4)	[1.070]	ND	(5.5)	[1.094]	ND	(5.1)	[1.020]
Bromomethane	ND	(10)	[1.006]	ND	(11)	[1.070]	ND	(11)	[1.094]	ND	(10)	[1.020]
Carbon disulfide	ND	(5)	[1.006]	ND	(5.4)	[1.070]	ND	(5.5)	[1.094]	4.5 J	(5.1)	[1.020]
Carbon tetrachloride	ND	(5)	[1.006]	ND	(5.4)	[1.070]	ND	(5.5)	[1.094]	ND	(5.1)	[1.020]
Chlorobenzene	ND	(5)	[1.006]	ND	(5.4)	[1.070]	ND	(5.5)	[1.094]	ND	(5.1)	[1.020]
Chloroethane	ND	(10)	[1.006]	ND	(11)	[1.070]	ND	(11)	[1.094]	ND	(10)	[1.020]
Chloroform	ND	(5)	[1.006]	ND	(5.4)	[1.070]	ND	(5.5)	[1.094]	ND	(5.1)	[1.020]
Chloromethane	ND	(10)	[1.006]	ND	(11)	[1.070]	ND	(11)	[1.094]	ND	(10)	[1.020]
Dibromochloromethane	ND	(5)	[1.006]	ND	(5.4)	[1.070]	ND	(5.5)	[1.094]	ND	(5.1)	[1.020]
Dibromomethane	ND	(5)	[1.006]	ND	(5.4)	[1.070]	ND	(5.5)	[1.094]	ND	(5.1)	[1.020]
Dichlorodifluoromethane	ND	(20)	[1.006]	ND	(21)	[1.070]	ND	(22)	[1.094]	ND	(20)	[1.020]
Ethyl benzene	ND	(5)	[1.006]	ND	(5.4)	[1.070]	ND	(5.5)	[1.094]	ND	(5.1)	[1.020]
Ethyl methacrylate	ND	(15)	[1.006]	ND	(16)	[1.070]	ND	(16)	[1.094]	ND	(15)	[1.020]
Iodomethane	ND	(5)	[1.006]	ND	(5.4)	[1.070]	ND	(5.5)	[1.094]	ND	(5.1)	[1.020]
Methyl ethyl ketone	ND	(100)	[1.006]	ND	(110)	[1.070]	ND	(110)	[1.094]	ND	(100)	[1.020]
Methylene chloride	36	(5)	[1.006]	ND	(5.4)	[1.070]	ND	(5.5)	[1.094]	ND	(5.1)	[1.020]
Styrene	ND	(5)	[1.006]	ND	(5.4)	[1.070]	ND	(5.5)	[1.094]	ND	(5.1)	[1.020]
Tetrachloroethene	ND	(5)	[1.006]	ND	(5.4)	[1.070]	ND	(5.5)	[1.094]	ND	(5.1)	[1.020]
Toluene	44	(5)	[1.006]	ND	(5.4)	[1.070]	ND	(5.5)	[1.094]	100	(5.1)	[1.020]
Tribromomethane(Bromoform)	ND	(5)	[1.006]	ND	(5.4)	[1.070]	ND	(5.5)	[1.094]	ND	(5.1)	[1.020]
Trichloroethene	ND	(5)	[1.006]	ND	(5.4)	[1.070]	ND	(5.5)	[1.094]	ND	(5.1)	[1.020]

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TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

	SITE ID											
	LOCATION ID											
	SAMPLE ID											
	BEG. DEPTH - END DEPTH (FT.)											
PARAMETER	NONE			NONE			NONE			NONE		
	19			20			20			20		
	CAN97-19-99 Dup of CAN97-19-S			CAN97-20-06			CAN97-20-I			CAN97-20-S		
	0 - 2			7 - 9			4 - 6			0 - 2		
Trichlorofluoromethane	ND	(10)	[1.006]	ND	(11)	[1.070]	ND	(11)	[1.094]	ND	(10)	[1.020]
Unknown	24	()	[1.006]	NA			NA			26	()	[1.020]
Vinyl acetate	ND	(5)	[1.006]	ND	(5.4)	[1.070]	ND	(5.5)	[1.094]	ND	(5.1)	[1.020]
Vinyl chloride	ND	(10)	[1.006]	ND	(11)	[1.070]	ND	(11)	[1.094]	ND	(10)	[1.020]
Xylenes	3.1 J	(5)	[1.006]	ND	(5.4)	[1.070]	ND	(5.5)	[1.094]	ND	(5.1)	[1.020]
cis-1,3-Dichloropropene	ND	(5)	[1.006]	ND	(5.4)	[1.070]	ND	(5.5)	[1.094]	ND	(5.1)	[1.020]
trans-1,2-Dichloroethene	ND	(5)	[1.006]	ND	(5.4)	[1.070]	ND	(5.5)	[1.094]	ND	(5.1)	[1.020]
trans-1,3-Dichloropropene	ND	(5)	[1.006]	ND	(5.4)	[1.070]	ND	(5.5)	[1.094]	ND	(5.1)	[1.020]
trans-1,4-Dichloro-2-butene	ND	(10)	[1.006]	ND	(11)	[1.070]	ND	(11)	[1.094]	ND	(10)	[1.020]
SW8270 - Semivolatile Organics (ug/kg)												
1,2,4,5-Tetrachlorobenzene	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.037]	ND	(340)	[.034]
1,2,4-Trichlorobenzene	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.037]	ND	(340)	[.034]
1,2-Dichlorobenzene	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.037]	ND	(340)	[.034]
1,2-Diphenylhydrazine	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.037]	ND	(340)	[.034]
1,3-Dichlorobenzene	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.037]	ND	(340)	[.034]
1,4-Dichlorobenzene	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.037]	ND	(340)	[.034]
1-Chloronaphthalene	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.037]	ND	(340)	[.034]
1-Naphthylamine	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.037]	ND	(340)	[.034]
2,3,4,6-Tetrachlorophenol	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.037]	ND	(340)	[.034]
2,4,5-Trichlorophenol	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.037]	ND	(340)	[.034]
2,4,6-Trichlorophenol	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.037]	ND	(340)	[.034]
2,4-Dichlorophenol	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.037]	ND	(340)	[.034]
2,4-Dimethylphenol	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.037]	ND	(340)	[.034]
2,4-Dinitrophenol	ND	(670)	[.034]	ND	(710)	[.036]	ND	(730)	[.037]	ND	(680)	[.034]
2,4-Dinitrotoluene	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.037]	ND	(340)	[.034]
2,6-Dichlorophenol	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.037]	ND	(340)	[.034]
2,6-Dinitrotoluene	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.037]	ND	(340)	[.034]
2-Chloronaphthalene	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.037]	ND	(340)	[.034]
2-Chlorophenol	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.037]	ND	(340)	[.034]

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TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

	SITE ID											
	LOCATION ID											
	SAMPLE ID											
	BEG. DEPTH - END DEPTH (FT.)											
PARAMETER	NONE			NONE			NONE			NONE		
	19			20			20			20		
	CAN97-19-99 Dup of CAN97-19-S			CAN97-20-06			CAN97-20-I			CAN97-20-S		
	0 - 2			7 - 9			4 - 6			0 - 2		
2-Methylnaphthalene	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.037]	ND	(340)	[.034]
2-Methylphenol(o-cresol)	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.037]	ND	(340)	[.034]
2-Naphthylamine	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.037]	ND	(340)	[.034]
2-Nitroaniline	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.037]	ND	(340)	[.034]
2-Nitrophenol	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.037]	ND	(340)	[.034]
2-Picoline	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.037]	ND	(340)	[.034]
3,3'-Dichlorobenzidine	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.037]	ND	(340)	[.034]
3-Methylcholanthrene	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.037]	ND	(340)	[.034]
3-Nitroaniline	ND	(670)	[.034]	ND	(710)	[.036]	ND	(730)	[.037]	ND	(680)	[.034]
4,6-Dinitro-2-methylphenol	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.037]	ND	(340)	[.034]
4-Aminobiphenyl	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.037]	ND	(340)	[.034]
4-Bromophenyl phenyl ether	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.037]	ND	(340)	[.034]
4-Chloro-3-methylphenol	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.037]	ND	(340)	[.034]
4-Chlorophenyl phenyl ether	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.037]	ND	(340)	[.034]
4-Methylphenol(p-cresol)	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.037]	ND	(340)	[.034]
4-Nitroaniline	ND	(670)	[.034]	ND	(710)	[.036]	ND	(730)	[.037]	ND	(680)	[.034]
4-Nitrophenol	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.037]	ND	(340)	[.034]
7,12-Dimethylbenz(a)anthracene	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.037]	ND	(340)	[.034]
Acenaphthene	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.037]	ND	(340)	[.034]
Acenaphthylene	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.037]	ND	(340)	[.034]
Acetophenone	24 JB	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.037]	ND	(340)	[.034]
Aniline	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.037]	ND	(340)	[.034]
Anthracene	30 J	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.037]	8.7 J	(340)	[.034]
Benzidine	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.037]	ND	(340)	[.034]
Benzo(a)anthracene	150 J	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.037]	71 J	(340)	[.034]
Benzo(a)pyrene	130 J	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.037]	98 J	(340)	[.034]
Benzo(b)fluoranthene	150 J	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.037]	190 JX	(340)	[.034]
Benzo(g,h,i)perylene	45 J	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.037]	58 J	(340)	[.034]
Benzo(k)fluoranthene	120 J	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.037]	190 JX	(340)	[.034]

Compiled: 8 February 1994 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

SITE ID	NONE				NONE				NONE				NONE					
LOCATION ID	19				20				20				20					
SAMPLE ID	CAN97-19-99 Dup of CAN97-19-S				CAN97-20-06				CAN97-20-I				CAN97-20-S					
BEG. DEPTH - END DEPTH (FT.)	0 - 2				7 - 9				4 - 6				0 - 2					
PARAMETER																		
Benzoic acid	ND	(1700)	[	.034]	ND	(1800)	[	.036]	ND	(1800)	[	.037]	ND	(1700)	[	.034]		
Benzyl alcohol	ND	(340)	[	.034]	ND	(360)	[	.036]	ND	(360)	[	.037]	ND	(340)	[	.034]		
Butylbenzylphthalate	ND	(340)	[	.034]	ND	(360)	[	.036]	ND	(360)	[	.037]	ND	(340)	[	.034]		
Chrysene	150 J	(340)	[	.034]	ND	(360)	[	.036]	ND	(360)	[	.037]	82 J	(340)	[	.034]		
Di-n-octylphthalate	ND	(340)	[	.034]	ND	(360)	[	.036]	ND	(360)	[	.037]	ND	(340)	[	.034]		
Dibenz(a,h)anthracene	15 J	(340)	[	.034]	ND	(360)	[	.036]	ND	(360)	[	.037]	19 J	(340)	[	.034]		
Dibenz(a,j)acridine	ND	(340)	[	.034]	ND	(360)	[	.036]	ND	(360)	[	.037]	ND	(340)	[	.034]		
Dibenzofuran	ND	(340)	[	.034]	ND	(360)	[	.036]	ND	(360)	[	.037]	ND	(340)	[	.034]		
Dibutylphthalate	8.1 J	(340)	[	.034]	ND	(360)	[	.036]	ND	(360)	[	.037]	ND	(340)	[	.034]		
Diethylphthalate	ND	(340)	[	.034]	ND	(360)	[	.036]	ND	(360)	[	.037]	ND	(340)	[	.034]		
Dimethylphenethylamine	ND	(4000)	[	.034]	ND	(4300)	[	.036]	ND	(4400)	[	.037]	ND	(4100)	[	.034]		
Dimethylphthalate	ND	(340)	[	.034]	ND	(360)	[	.036]	ND	(360)	[	.037]	ND	(340)	[	.034]		
Diphenylamine	ND	(340)	[	.034]	ND	(360)	[	.036]	ND	(360)	[	.037]	ND	(340)	[	.034]		
Ethyl methanesulfonate	ND	(340)	[	.034]	ND	(360)	[	.036]	ND	(360)	[	.037]	ND	(340)	[	.034]		
Fluoranthene	330 J	(340)	[	.034]	ND	(360)	[	.036]	ND	(360)	[	.037]	120 J	(340)	[	.034]		
Fluorene	6.7 J	(340)	[	.034]	ND	(360)	[	.036]	ND	(360)	[	.037]	ND	(340)	[	.034]		
Hexachlorobenzene	ND	(340)	[	.034]	ND	(360)	[	.036]	ND	(360)	[	.037]	ND	(340)	[	.034]		
Hexachlorobutadiene	ND	(340)	[	.034]	ND	(360)	[	.036]	ND	(360)	[	.037]	ND	(340)	[	.034]		
Hexachlorocyclopentadiene	ND	(340)	[	.034]	ND	(360)	[	.036]	ND	(360)	[	.037]	ND	(340)	[	.034]		
Hexachloroethane	ND	(340)	[	.034]	ND	(360)	[	.036]	ND	(360)	[	.037]	ND	(340)	[	.034]		
Indeno(1,2,3-cd)pyrene	48 J	(340)	[	.034]	ND	(360)	[	.036]	ND	(360)	[	.037]	52 J	(340)	[	.034]		
Isophorone	ND	(340)	[	.034]	ND	(360)	[	.036]	ND	(360)	[	.037]	ND	(340)	[	.034]		
Methyl methanesulfonate	ND	(1700)	[	.034]	ND	(1800)	[	.036]	ND	(1800)	[	.037]	ND	(1700)	[	.034]		
N-Nitroso-di-n-butylamine	ND	(340)	[	.034]	ND	(360)	[	.036]	ND	(360)	[	.037]	ND	(340)	[	.034]		
N-Nitrosodimethylamine	ND	(340)	[	.034]	ND	(360)	[	.036]	ND	(360)	[	.037]	ND	(340)	[	.034]		
N-Nitrosodiphenylamine	ND	(340)	[	.034]	ND	(360)	[	.036]	ND	(360)	[	.037]	ND	(340)	[	.034]		
N-Nitrosodipropylamine	ND	(340)	[	.034]	ND	(360)	[	.036]	ND	(360)	[	.037]	ND	(340)	[	.034]		
N-Nitrosopiperidine	ND	(340)	[	.034]	ND	(360)	[	.036]	ND	(360)	[	.037]	ND	(340)	[	.034]		
Naphthalene	ND	(340)	[	.034]	ND	(360)	[	.036]	ND	(360)	[	.037]	ND	(340)	[	.034]		

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID: NONE LOCATION ID: 19 SAMPLE ID: CAN97-19-99 Dup of CAN97-19-S BEG. DEPTH - END DEPTH (FT.): 0 - 2			SITE ID: NONE LOCATION ID: 20 SAMPLE ID: CAN97-20-06 BEG. DEPTH - END DEPTH (FT.): 7 - 9			SITE ID: NONE LOCATION ID: 20 SAMPLE ID: CAN97-20-I BEG. DEPTH - END DEPTH (FT.): 4 - 6			SITE ID: NONE LOCATION ID: 20 SAMPLE ID: CAN97-20-S BEG. DEPTH - END DEPTH (FT.): 0 - 2		
Nitrobenzene	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.037]	ND	(340)	[.034]
Pentachlorobenzene	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.037]	ND	(340)	[.034]
Pentachloronitrobenzene	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.037]	ND	(340)	[.034]
Pentachlorophenol	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.037]	ND	(340)	[.034]
Phenacetin	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.037]	ND	(340)	[.034]
Phenanthrene	160 J	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.037]	53 J	(340)	[.034]
Phenol	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.037]	ND	(340)	[.034]
Pronamide	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.037]	ND	(340)	[.034]
Pyrene	250 J	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.037]	94 J	(340)	[.034]
Pyridine	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.037]	ND	(340)	[.034]
Unknown	300	(0)	[.034]	140	(0)	[.036]	180	(0)	[.037]	200	(0)	[.034]
Unknown B	270	(0)	[.034]	NA			NA			NA		
Unknown C20-PNA	170	(0)	[.034]	NA			NA			NA		
Unknown alkane	270	(0)	[.034]	NA			330	(0)	[.037]	310	(0)	[.034]
Unknown oxirane	700	(0)	[.034]	NA			NA			510	(0)	[.034]
Unknown sterol	NA			NA			NA			410	(0)	[.034]
bis(2-Chloroethoxy)methane	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.037]	ND	(340)	[.034]
bis(2-Chloroethyl)ether	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.037]	ND	(340)	[.034]
bis(2-Chloroisopropyl)ether	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.037]	ND	(340)	[.034]
bis(2-Ethylhexyl)phthalate	26 JB	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.037]	20 JB	(340)	[.034]
p-Chloroaniline	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.037]	ND	(340)	[.034]
p-Dimethylaminoazobenzene	ND	(340)	[.034]	ND	(360)	[.036]	ND	(360)	[.037]	ND	(340)	[.034]

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)												
	NONE 21 CAN97-21-06 5 - 7			NONE 21 CAN97-21-99 Dup of CAN97-21-06 5 - 7			NONE 21 CAN97-21-I 4 - 6			NONE 21 CAN97-21-S 0 - 2			
EPA 418.1 - Total Recoverable Petroleum Hydrocarbons (mg/kg)													
Hydrocarbons	11 @	(26)	[5.228]	11 @	(26)	[5.241]	14 @	(26)	[5.250]	ND @	(25)	[4.980]	
SW8015 - Total Petroleum Hydrocarbons (ug/kg)													
Benzene (2)	NA			NA			NA			93 C@	(29)	[97.300]	
Diesel (2)	NA			NA			NA			33000 G@	(5100)	[102.041]	
Ethylbenzene (2)	NA			NA			NA			ND	(29)	[97.300]	
Gasoline (2)	NA			NA			NA			5400 G@	(4900)	[97.300]	
Jet fuel (2)	NA			NA			NA			ND	(10000)	[102.041]	
Kerosene (2)	NA			NA			NA			ND	(10000)	[102.041]	
Toluene (2)	NA			NA			NA			ND	(29)	[97.300]	
Xylenes (total) (2)	NA			NA			NA			ND	(49)	[97.300]	
SW8080 - Organochlorine Pesticides and PCBs (ug/kg)													
4,4'-DDD	ND	(0.35)	[34.853]	ND	(0.35)	[34.941]	ND	(0.35)	[35.003]	ND	(3.3)	[333.667]	
4,4'-DDE	ND	(0.35)	[34.853]	0.42 G@	(0.35)	[34.941]	0.48 @	(0.35)	[35.003]	0.76 J	(3.3)	[333.667]	
4,4'-DDT	ND	(0.7)	[34.853]	ND	(0.7)	[34.941]	ND	(0.7)	[35.003]	ND	(6.7)	[333.667]	
Aldrin	ND	(0.35)	[34.853]	ND	(0.35)	[34.941]	0.27 J	(0.35)	[35.003]	ND	(3.3)	[333.667]	
Chlordane	ND	(1.7)	[34.853]	ND	(1.7)	[34.941]	ND	(1.8)	[35.003]	ND	(17)	[333.667]	
Dieldrin	ND	(0.35)	[34.853]	ND	(0.35)	[34.941]	ND	(0.35)	[35.003]	ND	(3.3)	[333.667]	
Endosulfan I	ND	(0.35)	[34.853]	ND	(0.35)	[34.941]	ND	(0.35)	[35.003]	ND	(3.3)	[333.667]	
Endosulfan II	ND	(1)	[34.853]	ND	(1)	[34.941]	ND	(1.1)	[35.003]	ND	(10)	[333.667]	
Endosulfan Sulfate	ND	(1.7)	[34.853]	ND	(1.7)	[34.941]	ND	(1.8)	[35.003]	ND	(17)	[333.667]	
Endrin	ND	(0.35)	[34.853]	ND	(0.35)	[34.941]	ND	(0.35)	[35.003]	ND	(3.3)	[333.667]	
Endrin Aldehyde	ND	(0.7)	[34.853]	ND	(0.7)	[34.941]	ND	(0.7)	[35.003]	ND	(6.7)	[333.667]	
Endrin Ketone	ND	(1.7)	[34.853]	ND	(1.7)	[34.941]	ND	(1.8)	[35.003]	ND	(17)	[333.667]	
Heptachlor	ND	(0.35)	[34.853]	ND	(0.35)	[34.941]	ND	(0.35)	[35.003]	5.9 G@	(3.3)	[333.667]	
Heptachlor epoxide	ND	(0.35)	[34.853]	ND	(0.35)	[34.941]	ND	(0.35)	[35.003]	ND	(3.3)	[333.667]	
Methoxychlor	ND	(1.7)	[34.853]	ND	(1.7)	[34.941]	ND	(1.8)	[35.003]	ND	(17)	[333.667]	
PCB-1016	ND	(3.5)	[34.853]	ND	(3.5)	[34.941]	ND	(3.5)	[35.003]	ND	(33)	[333.667]	
PCB-1221	ND	(7)	[34.853]	ND	(7)	[34.941]	ND	(7)	[35.003]	ND	(67)	[333.667]	

Compiled: 8 Fe[illegible]y 1994 () = Reporting Limit [] = Factor (= Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 21 CAN97-21-06 5 - 7			NONE 21 CAN97-21-99 Dup of CAN97-21-06 5 - 7			NONE 21 CAN97-21-I 4 - 6			NONE 21 CAN97-21-S 0 - 2		
PCB-1232	ND	(7)	[34.853]	ND	(7)	[34.941]	ND	(7)	[35.003]	ND	(67)	[333.667]
PCB-1242	ND	(3.5)	[34.853]	ND	(3.5)	[34.941]	ND	(3.5)	[35.003]	ND	(33)	[333.667]
PCB-1248	ND	(3.5)	[34.853]	ND	(3.5)	[34.941]	ND	(3.5)	[35.003]	ND	(33)	[333.667]
PCB-1254	ND	(7)	[34.853]	ND	(7)	[34.941]	ND	(7)	[35.003]	ND	(67)	[333.667]
PCB-1260	ND	(7)	[34.853]	ND	(7)	[34.941]	ND	(7)	[35.003]	ND	(67)	[333.667]
Toxaphene	ND	(17)	[34.853]	ND	(17)	[34.941]	ND	(18)	[35.003]	ND	(170)	[333.667]
alpha-BHC	ND	(0.35)	[34.853]	ND	(0.35)	[34.941]	ND	(0.35)	[35.003]	ND	(3.3)	[333.667]
beta-BHC	ND	(0.35)	[34.853]	ND	(0.35)	[34.941]	ND	(0.35)	[35.003]	ND	(3.3)	[333.667]
delta-BHC	ND	(0.35)	[34.853]	ND	(0.35)	[34.941]	ND	(0.35)	[35.003]	ND	(3.3)	[333.667]
gamma-BHC	ND	(0.35)	[34.853]	ND	(0.35)	[34.941]	ND	(0.35)	[35.003]	ND	(3.3)	[333.667]
SW8150 - Chlorinated Herbicides (ug/kg)												
2,4,5-T	NA			NA			NA			3.7 J	(6.7)	[33.400]
2,4,5-TP (Silvex)	NA			NA			NA			ND	(5.7)	[33.400]
2,4-D	NA			NA			NA			ND	(40)	[33.400]
2,4-DB	NA			NA			NA			12 J	(30)	[33.400]
Dalapon	NA			NA			NA			ND	(190)	[33.400]
Dicamba	NA			NA			NA			ND	(9)	[33.400]
Dichloroprop	NA			NA			NA			ND	(22)	[33.400]
Dinoseb	NA			NA			NA			ND	(5)	[33.400]
MCPA	NA			NA			NA			ND	(8300)	[33.400]
MCPP	NA			NA			NA			ND	(6400)	[33.400]
SW8240 - Volatile Organics (ug/kg)												
1,1,1-Trichloroethane	ND	(5.2)	[1.046]	ND	(5.2)	[1.048]	ND	(5.3)	[1.050]	ND	(5)	[1.002]
1,1,2,2-Tetrachloroethane	ND	(5.2)	[1.046]	ND	(5.2)	[1.048]	ND	(5.3)	[1.050]	ND	(5)	[1.002]
1,1,2-Trichloroethane	ND	(5.2)	[1.046]	ND	(5.2)	[1.048]	ND	(5.3)	[1.050]	ND	(5)	[1.002]
1,1-Dichloroethane	ND	(5.2)	[1.046]	ND	(5.2)	[1.048]	ND	(5.3)	[1.050]	ND	(5)	[1.002]
1,1-Dichloroethene	ND	(5.2)	[1.046]	ND	(5.2)	[1.048]	ND	(5.3)	[1.050]	ND	(5)	[1.002]
1,2,3-Trichloropropane	ND	(5.2)	[1.046]	ND	(5.2)	[1.048]	ND	(5.3)	[1.050]	ND	(5)	[1.002]
1,2-Dichloroethane	ND	(5.2)	[1.046]	ND	(5.2)	[1.048]	ND	(5.3)	[1.050]	ND	(5)	[1.002]

Compiled: 8 February 1994 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)														
	NONE 21 CAN97-21-06 5 - 7				NONE 21 CAN97-21-99 Dup of CAN97-21-06 5 - 7				NONE 21 CAN97-21-I 4 - 6				NONE 21 CAN97-21-S 0 - 2			
1,2-Dichloropropane	ND	(5.2)	[1.046]		ND	(5.2)	[1.048]		ND	(5.3)	[1.050]		ND	(5)	[1.002]	
2-Chloroethyl vinyl ether	ND	(10)	[1.046]		ND	(10)	[1.048]		ND	(11)	[1.050]		ND	(10)	[1.002]	
2-Hexanone	ND	(52)	[1.046]		ND	(52)	[1.048]		ND	(53)	[1.050]		ND	(50)	[1.002]	
4-Methyl-2-pentanone(MIBK)	ND	(52)	[1.046]		ND	(52)	[1.048]		ND	(53)	[1.050]		ND	(50)	[1.002]	
Acetone	ND	(100)	[1.046]		ND	(100)	[1.048]		ND	(110)	[1.050]		ND	(100)	[1.002]	
Acrolein	ND	(78)	[1.046]		ND	(79)	[1.048]		ND	(79)	[1.050]		ND	(75)	[1.002]	
Acrylonitrile	ND	(52)	[1.046]		ND	(52)	[1.048]		ND	(53)	[1.050]		ND	(50)	[1.002]	
Benzene	ND	(5.2)	[1.046]		ND	(5.2)	[1.048]		ND	(5.3)	[1.050]		8.2	@ (5)	[1.002]	
Bromodichloromethane	ND	(5.2)	[1.046]		ND	(5.2)	[1.048]		ND	(5.3)	[1.050]		ND	(5)	[1.002]	
Bromomethane	ND	(10)	[1.046]		ND	(10)	[1.048]		ND	(11)	[1.050]		ND	(10)	[1.002]	
Carbon disulfide	ND	(5.2)	[1.046]		ND	(5.2)	[1.048]		ND	(5.3)	[1.050]		ND	(5)	[1.002]	
Carbon tetrachloride	ND	(5.2)	[1.046]		ND	(5.2)	[1.048]		ND	(5.3)	[1.050]		ND	(5)	[1.002]	
Chlorobenzene	ND	(5.2)	[1.046]		ND	(5.2)	[1.048]		ND	(5.3)	[1.050]		ND	(5)	[1.002]	
Chloroethane	ND	(10)	[1.046]		ND	(10)	[1.048]		ND	(11)	[1.050]		ND	(10)	[1.002]	
Chloroform	ND	(5.2)	[1.046]		ND	(5.2)	[1.048]		ND	(5.3)	[1.050]		ND	(5)	[1.002]	
Chloromethane	ND	(10)	[1.046]		ND	(10)	[1.048]		ND	(11)	[1.050]		ND	(10)	[1.002]	
Dibromochloromethane	ND	(5.2)	[1.046]		ND	(5.2)	[1.048]		ND	(5.3)	[1.050]		ND	(5)	[1.002]	
Dibromomethane	ND	(5.2)	[1.046]		ND	(5.2)	[1.048]		ND	(5.3)	[1.050]		ND	(5)	[1.002]	
Dichlorodifluoromethane	ND	(21)	[1.046]		ND	(21)	[1.048]		ND	(21)	[1.050]		ND	(20)	[1.002]	
Ethyl benzene	ND	(5.2)	[1.046]		ND	(5.2)	[1.048]		ND	(5.3)	[1.050]		4.9	J (5)	[1.002]	
Ethyl methacrylate	ND	(16)	[1.046]		ND	(16)	[1.048]		ND	(16)	[1.050]		ND	(15)	[1.002]	
Iodomethane	ND	(5.2)	[1.046]		ND	(5.2)	[1.048]		ND	(5.3)	[1.050]		ND	(5)	[1.002]	
Methyl ethyl ketone	ND	(100)	[1.046]		ND	(100)	[1.048]		ND	(110)	[1.050]		ND	(100)	[1.002]	
Methylene chloride	ND	(5.2)	[1.046]		ND	(5.2)	[1.048]		ND	(5.3)	[1.050]		74	(5)	[1.002]	
Styrene	ND	(5.2)	[1.046]		ND	(5.2)	[1.048]		ND	(5.3)	[1.050]		ND	(5)	[1.002]	
Tetrachloroethene	ND	(5.2)	[1.046]		ND	(5.2)	[1.048]		ND	(5.3)	[1.050]		ND	(5)	[1.002]	
Toluene	ND	(5.2)	[1.046]		ND	(5.2)	[1.048]		ND	(5.3)	[1.050]		220	(5)	[1.002]	
Tribromomethane(Bromoform)	ND	(5.2)	[1.046]		ND	(5.2)	[1.048]		ND	(5.3)	[1.050]		ND	(5)	[1.002]	
Trichloroethene	ND	(5.2)	[1.046]		ND	(5.2)	[1.048]		ND	(5.3)	[1.050]		ND	(5)	[1.002]	

Compiled: 8 Feb 1994 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID	LOCATION ID	SAMPLE ID	BEG. DEPTH - END DEPTH (FT.)												
	NONE	21	CAN97-21-06	5 - 7			NONE	21	CAN97-21-99 Dup of CAN97-21-06	5 - 7			NONE	21	CAN97-21-1	4 - 6			NONE	21	CAN97-21-S	0 - 2		
Trichlorofluoromethane	ND	(10)	[1.046]				ND	(10)	[1.048]				ND	(11)	[1.050]				ND	(10)	[1.002]			
Unknown	NA						NA						NA						21	()	[1.002]			
Unknown C10H16	NA						NA						NA						17	()	[1.002]			
Vinyl acetate	ND	(5.2)	[1.046]				ND	(5.2)	[1.048]				ND	(5.3)	[1.050]				ND	(5)	[1.002]			
Vinyl chloride	ND	(10)	[1.046]				ND	(10)	[1.048]				ND	(11)	[1.050]				ND	(10)	[1.002]			
Xylenes	ND	(5.2)	[1.046]				ND	(5.2)	[1.048]				ND	(5.3)	[1.050]				25	(5)	[1.002]			
cis-1,3-Dichloropropene	ND	(5.2)	[1.046]				ND	(5.2)	[1.048]				ND	(5.3)	[1.050]				ND	(5)	[1.002]			
trans-1,2-Dichloroethene	ND	(5.2)	[1.046]				ND	(5.2)	[1.048]				ND	(5.3)	[1.050]				ND	(5)	[1.002]			
trans-1,3-Dichloropropene	ND	(5.2)	[1.046]				ND	(5.2)	[1.048]				ND	(5.3)	[1.050]				ND	(5)	[1.002]			
trans-1,4-Dichloro-2-butene	ND	(10)	[1.046]				ND	(10)	[1.048]				ND	(11)	[1.050]				ND	(10)	[1.002]			
SW8270 - Semivolatile Organics (ug/kg)																								
1,2,4,5-Tetrachlorobenzene	ND	(350)	[.035]				ND	(350)	[.035]				ND	(350)	[.035]				ND	(330)	[.033]			
1,2,4-Trichlorobenzene	ND	(350)	[.035]				ND	(350)	[.035]				ND	(350)	[.035]				ND	(330)	[.033]			
1,2-Dichlorobenzene	ND	(350)	[.035]				ND	(350)	[.035]				ND	(350)	[.035]				ND	(330)	[.033]			
1,2-Diphenylhydrazine	ND	(350)	[.035]				ND	(350)	[.035]				ND	(350)	[.035]				ND	(330)	[.033]			
1,3-Dichlorobenzene	ND	(350)	[.035]				ND	(350)	[.035]				ND	(350)	[.035]				ND	(330)	[.033]			
1,4-Dichlorobenzene	ND	(350)	[.035]				ND	(350)	[.035]				ND	(350)	[.035]				ND	(330)	[.033]			
1-Chloronaphthalene	ND	(350)	[.035]				ND	(350)	[.035]				ND	(350)	[.035]				ND	(330)	[.033]			
1-Naphthylamine	ND	(350)	[.035]				ND	(350)	[.035]				ND	(350)	[.035]				ND	(330)	[.033]			
2,3,4,6-Tetrachlorophenol	ND	(350)	[.035]				ND	(350)	[.035]				ND	(350)	[.035]				ND	(330)	[.033]			
2,4,5-Trichlorophenol	ND	(350)	[.035]				ND	(350)	[.035]				ND	(350)	[.035]				ND	(330)	[.033]			
2,4,6-Trichlorophenol	ND	(350)	[.035]				ND	(350)	[.035]				ND	(350)	[.035]				ND	(330)	[.033]			
2,4-Dichlorophenol	ND	(350)	[.035]				ND	(350)	[.035]				ND	(350)	[.035]				ND	(330)	[.033]			
2,4-Dimethylphenol	ND	(350)	[.035]				ND	(350)	[.035]				ND	(350)	[.035]				ND	(330)	[.033]			
2,4-Dinitrophenol	ND	(700)	[.035]				ND	(700)	[.035]				ND	(700)	[.035]				ND	(670)	[.033]			
2,4-Dinitrotoluene	ND	(350)	[.035]				ND	(350)	[.035]				ND	(350)	[.035]				ND	(330)	[.033]			
2,6-Dichlorophenol	ND	(350)	[.035]				ND	(350)	[.035]				ND	(350)	[.035]				ND	(330)	[.033]			
2,6-Dinitrotoluene	ND	(350)	[.035]				ND	(350)	[.035]				ND	(350)	[.035]				ND	(330)	[.033]			
2-Chloronaphthalene	ND	(350)	[.035]				ND	(350)	[.035]				ND	(350)	[.035]				ND	(330)	[.033]			

Compiled: 8 February 1994 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	NONE 21 CAN97-21-06 5 - 7			NONE 21 CAN97-21-99 Dup of CAN97-21-06 5 - 7			NONE 21 CAN97-21-I 4 - 6			NONE 21 CAN97-21-S 0 - 2		
2-Chlorophenol	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(330)	[.033]
2-Methylnaphthalene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(330)	[.033]
2-Methylphenol(o-cresol)	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(330)	[.033]
2-Naphthylamine	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(330)	[.033]
2-Nitroaniline	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(330)	[.033]
2-Nitrophenol	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(330)	[.033]
2-Picoline	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(330)	[.033]
3,3'-Dichlorobenzidine	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(330)	[.033]
3-Methylcholanthrene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(330)	[.033]
3-Nitroaniline	ND	(700)	[.035]	ND	(700)	[.035]	ND	(700)	[.035]	ND	(670)	[.033]
4,6-Dinitro-2-methylphenol	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(330)	[.033]
4-Aminobiphenyl	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(330)	[.033]
4-Bromophenyl phenyl ether	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(330)	[.033]
4-Chloro-3-methylphenol	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(330)	[.033]
4-Chlorophenyl phenyl ether	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(330)	[.033]
4-Methylphenol(p-cresol)	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(330)	[.033]
4-Nitroaniline	ND	(700)	[.035]	ND	(700)	[.035]	ND	(700)	[.035]	ND	(670)	[.033]
4-Nitrophenol	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(330)	[.033]
7,12-Dimethylbenz(a)anthracene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(330)	[.033]
Acenaphthene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(330)	[.033]
Acenaphthylene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(330)	[.033]
Acetophenone	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(330)	[.033]
Aniline	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(330)	[.033]
Anthracene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(330)	[.033]
Benzidine	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(330)	[.033]
Benzo(a)anthracene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(330)	[.033]
Benzo(a)pyrene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(330)	[.033]
Benzo(b)fluoranthene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(330)	[.033]
Benzo(g,h,i)perylene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(330)	[.033]

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID: NONE LOCATION ID: 21 SAMPLE ID: CAN97-21-06 BEG. DEPTH - END DEPTH (FT.): 5 - 7			SITE ID: NONE LOCATION ID: 21 SAMPLE ID: CAN97-21-99 Dup of CAN97-21-06 BEG. DEPTH - END DEPTH (FT.): 5 - 7			SITE ID: NONE LOCATION ID: 21 SAMPLE ID: CAN97-21-I BEG. DEPTH - END DEPTH (FT.): 4 - 6			SITE ID: NONE LOCATION ID: 21 SAMPLE ID: CAN97-21-S BEG. DEPTH - END DEPTH (FT.): 0 - 2		
Benzo(k)fluoranthene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(330)	[.033]
Benzoic acid	ND	(1700)	[.035]	ND	(1700)	[.035]	ND	(1800)	[.035]	ND	(1700)	[.033]
Benzyl alcohol	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(330)	[.033]
Butylbenzylphthalate	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(330)	[.033]
Chrysene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(330)	[.033]
Di-n-octylphthalate	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(330)	[.033]
Dibenz(a,h)anthracene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(330)	[.033]
Dibenz(a,j)acridine	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(330)	[.033]
Dibenzofuran	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(330)	[.033]
Dibutylphthalate	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(330)	[.033]
Diethylphthalate	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(330)	[.033]
Dimethylphenethylamine	ND	(4200)	[.035]	ND	(4200)	[.035]	ND	(4200)	[.035]	ND	(4000)	[.033]
Dimethylphthalate	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(330)	[.033]
Diphenylamine	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(330)	[.033]
Ethyl methanesulfonate	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(330)	[.033]
Fluoranthene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(330)	[.033]
Fluorene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(330)	[.033]
Hexachlorobenzene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(330)	[.033]
Hexachlorobutadiene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(330)	[.033]
Hexachlorocyclopentadiene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(330)	[.033]
Hexachloroethane	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(330)	[.033]
Indeno(1,2,3-cd)pyrene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(330)	[.033]
Isophorone	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(330)	[.033]
Methyl methanesulfonate	ND	(1700)	[.035]	ND	(1700)	[.035]	ND	(1800)	[.035]	ND	(1700)	[.033]
N-Nitroso-di-n-butylamine	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(330)	[.033]
N-Nitrosodimethylamine	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(330)	[.033]
N-Nitrosodiphenylamine	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(330)	[.033]
N-Nitrosodipropylamine	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(330)	[.033]
N-Nitrosopiperidine	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(330)	[.033]

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)																
	NONE 21 CAN97-21-06 5 - 7				NONE 21 CAN97-21-99 Dup of CAN97-21-06 5 - 7				NONE 21 CAN97-21-I 4 - 6				NONE 21 CAN97-21-S 0 - 2			
Naphthalene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(330)	[	.033]
Nitrobenzene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(330)	[	.033]
Pentachlorobenzene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(330)	[	.033]
Pentachloronitrobenzene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(330)	[	.033]
Pentachlorophenol	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(330)	[	.033]
Phenacetin	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(330)	[	.033]
Phenanthrene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(330)	[	.033]
Phenol	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(330)	[	.033]
Pronamide	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(330)	[	.033]
Pyrene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(330)	[	.033]
Pyridine	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(330)	[	.033]
Unknown	380	(0)	[	.035]	170	(0)	[	.035]	240	(0)	[	.035]	200	(0)	[	.033]
Unknown B	210	(0)	[	.035]	280	(0)	[	.035]	460	(0)	[	.035]	200	(0)	[	.033]
Unknown alkane	NA				NA				NA				300	(0)	[	.033]
bis(2-Chloroethoxy)methane	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(330)	[	.033]
bis(2-Chloroethyl)ether	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(330)	[	.033]
bis(2-Chloroisopropyl)ether	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(330)	[	.033]
bis(2-Ethylhexyl)phthalate	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(330)	[	.033]
p-Chloroaniline	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(330)	[	.033]
p-Dimethylaminoazobenzene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(330)	[	.033]

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID			LOCATION ID			SAMPLE ID			BEG. DEPTH - END DEPTH (FT.)		
	NONE			NONE			NONE			NONE		
	2A			2A			2A			2B		
	CAN97-2A-06			CAN97-2A-1			CAN97-2A-S			CAN97-2B-06		
	8 - 10			4 - 6			0.5 - 1			8 - 10		
EPA 418.1 - Total Recoverable Petroleum Hydrocarbons (mg/kg)												
Hydrocarbons	12 @	(27)	[5.347]	42 @	(27)	[5.425]	1300	(27)	[5.304]	9 @	(27)	[5.413]
SW8015 - Total Petroleum Hydrocarbons (ug/kg)												
Benzene (2)	NA			ND	(33)	[109.000]	NA			NA		
Diesel (2)	NA			5400 J	(5500)	[110.011]	NA			NA		
Ethylbenzene (2)	NA			ND	(33)	[109.000]	NA			NA		
Gasoline (2)	NA			ND	(5400)	[109.000]	NA			NA		
Jet fuel (2)	NA			ND	(11000)	[110.011]	NA			NA		
Kerosene (2)	NA			ND	(11000)	[110.011]	NA			NA		
Toluene (2)	NA			12 J	(33)	[109.000]	NA			NA		
Xylenes (total) (2)	NA			11 J	(54)	[109.000]	NA			NA		
SW8080 - Organochlorine Pesticides and PCBs (ug/kg)												
4,4'-DDD	ND	(0.36)	[36.010]	ND	(0.37)	[36.630]	ND	(3.6)	[359.971]	ND	(0.36)	[36.403]
4,4'-DDE	ND	(0.36)	[36.010]	1 @	(0.37)	[36.630]	8.9 @	(3.6)	[359.971]	ND	(0.36)	[36.403]
4,4'-DDT	ND	(0.72)	[36.010]	ND	(0.73)	[36.630]	37	(7.2)	[359.971]	ND	(0.73)	[36.403]
Aldrin	ND	(0.36)	[36.010]	ND	(0.37)	[36.630]	ND	(3.6)	[359.971]	ND	(0.36)	[36.403]
Chlordane	ND	(1.8)	[36.010]	ND	(1.8)	[36.630]	ND	(18)	[359.971]	ND	(1.8)	[36.403]
Dieldrin	ND	(0.36)	[36.010]	ND	(0.37)	[36.630]	ND	(3.6)	[359.971]	ND	(0.36)	[36.403]
Endosulfan I	ND	(0.36)	[36.010]	ND	(0.37)	[36.630]	ND	(3.6)	[359.971]	ND	(0.36)	[36.403]
Endosulfan II	ND	(1.1)	[36.010]	ND	(1.1)	[36.630]	ND	(11)	[359.971]	ND	(1.1)	[36.403]
Endosulfan Sulfate	ND	(1.8)	[36.010]	ND	(1.8)	[36.630]	ND	(18)	[359.971]	ND	(1.8)	[36.403]
Endrin	ND	(0.36)	[36.010]	ND	(0.37)	[36.630]	ND	(3.6)	[359.971]	ND	(0.36)	[36.403]
Endrin Aldehyde	ND	(0.72)	[36.010]	ND	(0.73)	[36.630]	ND	(7.2)	[359.971]	ND	(0.73)	[36.403]
Endrin Ketone	ND	(1.8)	[36.010]	ND	(1.8)	[36.630]	ND	(18)	[359.971]	ND	(1.8)	[36.403]
Heptachlor	ND	(0.36)	[36.010]	ND	(0.37)	[36.630]	ND	(3.6)	[359.971]	ND	(0.36)	[36.403]
Heptachlor epoxide	ND	(0.36)	[36.010]	ND	(0.37)	[36.630]	ND	(3.6)	[359.971]	ND	(0.36)	[36.403]
Methoxychlor	ND	(1.8)	[36.010]	ND	(1.8)	[36.630]	ND	(18)	[359.971]	ND	(1.8)	[36.403]
PCB-1016	ND	(3.6)	[36.010]	ND	(3.7)	[36.630]	ND	(36)	[359.971]	ND	(3.6)	[36.403]
PCB-1221	ND	(7.2)	[36.010]	ND	(7.3)	[36.630]	ND	(72)	[359.971]	ND	(7.3)	[36.403]

Compiled: 8 February 1994 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	NONE 2A CAN97-2A-06 8 - 10			NONE 2A CAN97-2A-1 4 - 6			NONE 2A CAN97-2A-S 0.5 - 1			NONE 2B CAN97-2B-06 8 - 10		
PCB-1232	ND	(7.2)	[36.010]	ND	(7.3)	[36.630]	ND	(72)	[359.971]	ND	(7.3)	[36.403]
PCB-1242	ND	(3.6)	[36.010]	ND	(3.7)	[36.630]	ND	(36)	[359.971]	ND	(3.6)	[36.403]
PCB-1248	ND	(3.6)	[36.010]	ND	(3.7)	[36.630]	ND	(36)	[359.971]	ND	(3.6)	[36.403]
PCB-1254	ND	(7.2)	[36.010]	ND	(7.3)	[36.630]	ND	(72)	[359.971]	ND	(7.3)	[36.403]
PCB-1260	ND	(7.2)	[36.010]	ND	(7.3)	[36.630]	ND	(72)	[359.971]	ND	(7.3)	[36.403]
Toxaphene	ND	(18)	[36.010]	ND	(18)	[36.630]	ND	(180)	[359.971]	ND	(18)	[36.403]
alpha-BHC	ND	(0.36)	[36.010]	ND	(0.37)	[36.630]	ND	(3.6)	[359.971]	ND	(0.36)	[36.403]
beta-BHC	ND	(0.36)	[36.010]	ND	(0.37)	[36.630]	ND	(3.6)	[359.971]	ND	(0.36)	[36.403]
delta-BHC	0.68 G@	(0.36)	[36.010]	ND	(0.37)	[36.630]	ND	(3.6)	[359.971]	ND	(0.36)	[36.403]
gamma-BHC	ND	(0.36)	[36.010]	0.33 J	(0.37)	[36.630]	ND	(3.6)	[359.971]	0.46 GB@	(0.36)	[36.403]
SW8150 - Chlorinated Herbicides (ug/kg)												
2,4,5-T	NA			ND	(7.2)	[35.791]	NA			NA		
2,4,5-TP (Silvex)	NA			ND	(6.1)	[35.791]	NA			NA		
2,4-D	NA			ND	(43)	[35.791]	NA			NA		
2,4-DB	NA			ND	(33)	[35.791]	NA			NA		
Dalapon	NA			ND	(210)	[35.791]	NA			NA		
Dicamba	NA			ND	(9.7)	[35.791]	NA			NA		
Dichloroprop	NA			ND	(23)	[35.791]	NA			NA		
Dinoseb	NA			ND	(5.4)	[35.791]	NA			NA		
MCPA	NA			ND	(8900)	[35.791]	NA			NA		
MCPP	NA			ND	(6900)	[35.791]	NA			NA		
SW8240 - Volatile Organics (ug/kg)												
1,1,1-Trichloroethane	ND	(5.4)	[1.081]	ND	(5.5)	[1.100]	ND	(5.4)	[1.080]	ND	(5.5)	[1.093]
1,1,2,2-Tetrachloroethane	ND	(5.4)	[1.081]	ND	(5.5)	[1.100]	ND	(5.4)	[1.080]	ND	(5.5)	[1.093]
1,1,2-Trichloroethane	ND	(5.4)	[1.081]	ND	(5.5)	[1.100]	ND	(5.4)	[1.080]	ND	(5.5)	[1.093]
1,1-Dichloroethane	ND	(5.4)	[1.081]	ND	(5.5)	[1.100]	ND	(5.4)	[1.080]	ND	(5.5)	[1.093]
1,1-Dichloroethene	ND	(5.4)	[1.081]	ND	(5.5)	[1.100]	ND	(5.4)	[1.080]	ND	(5.5)	[1.093]
1,2,3-Trichloropropane	ND	(5.4)	[1.081]	ND	(5.5)	[1.100]	ND	(5.4)	[1.080]	ND	(5.5)	[1.093]
1,2-Dichloroethane	ND	(5.4)	[1.081]	ND	(5.5)	[1.100]	ND	(5.4)	[1.080]	ND	(5.5)	[1.093]

Compiled: 8 Feb 1994 () = Reporting Limit [] = Factor = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

	SITE ID											
	LOCATION ID											
	SAMPLE ID											
	BEG. DEPTH - END DEPTH (FT.)											
PARAMETER	NONE 2A CAN97-2A-06 8 - 10			NONE 2A CAN97-2A-1 4 - 6			NONE 2A CAN97-2A-S 0.5 - 1			NONE 2B CAN97-2B-06 8 - 10		
1,2-Dichloropropane	ND	(5.4)	[1.081]	ND	(5.5)	[1.100]	ND	(5.4)	[1.080]	ND	(5.5)	[1.093]
2-Chloroethyl vinyl ether	ND	(11)	[1.081]	ND	(11)	[1.100]	ND	(11)	[1.080]	ND	(11)	[1.093]
2-Hexanone	ND	(54)	[1.081]	ND	(55)	[1.100]	ND	(54)	[1.080]	ND	(55)	[1.093]
4-Methyl-2-pentanone(MIBK)	ND	(54)	[1.081]	ND	(55)	[1.100]	ND	(54)	[1.080]	ND	(55)	[1.093]
Acetone	ND	(110)	[1.081]	180 @	(110)	[1.100]	ND	(110)	[1.080]	ND	(110)	[1.093]
Acrolein	ND	(81)	[1.081]	ND	(83)	[1.100]	ND	(81)	[1.080]	ND	(82)	[1.093]
Acrylonitrile	ND	(54)	[1.081]	ND	(55)	[1.100]	ND	(54)	[1.080]	ND	(55)	[1.093]
Benzene	ND	(5.4)	[1.081]	ND	(5.5)	[1.100]	ND	(5.4)	[1.080]	ND	(5.5)	[1.093]
Bromodichloromethane	ND	(5.4)	[1.081]	ND	(5.5)	[1.100]	ND	(5.4)	[1.080]	ND	(5.5)	[1.093]
Bromomethane	ND	(11)	[1.081]	ND	(11)	[1.100]	ND	(11)	[1.080]	ND	(11)	[1.093]
Carbon disulfide	ND	(5.4)	[1.081]	ND	(5.5)	[1.100]	ND	(5.4)	[1.080]	ND	(5.5)	[1.093]
Carbon tetrachloride	ND	(5.4)	[1.081]	ND	(5.5)	[1.100]	ND	(5.4)	[1.080]	ND	(5.5)	[1.093]
Chlorobenzene	ND	(5.4)	[1.081]	ND	(5.5)	[1.100]	ND	(5.4)	[1.080]	ND	(5.5)	[1.093]
Chloroethane	ND	(11)	[1.081]	ND	(11)	[1.100]	ND	(11)	[1.080]	ND	(11)	[1.093]
Chloroform	ND	(5.4)	[1.081]	ND	(5.5)	[1.100]	ND	(5.4)	[1.080]	ND	(5.5)	[1.093]
Chloromethane	ND	(11)	[1.081]	ND	(11)	[1.100]	ND	(11)	[1.080]	ND	(11)	[1.093]
Dibromochloromethane	ND	(5.4)	[1.081]	ND	(5.5)	[1.100]	ND	(5.4)	[1.080]	ND	(5.5)	[1.093]
Dibromomethane	ND	(5.4)	[1.081]	ND	(5.5)	[1.100]	ND	(5.4)	[1.080]	ND	(5.5)	[1.093]
Dichlorodifluoromethane	ND	(22)	[1.081]	ND	(22)	[1.100]	ND	(22)	[1.080]	ND	(22)	[1.093]
Ethyl benzene	ND	(5.4)	[1.081]	ND	(5.5)	[1.100]	ND	(5.4)	[1.080]	ND	(5.5)	[1.093]
Ethyl methacrylate	ND	(16)	[1.081]	ND	(17)	[1.100]	ND	(16)	[1.080]	ND	(16)	[1.093]
Iodomethane	ND	(5.4)	[1.081]	ND	(5.5)	[1.100]	ND	(5.4)	[1.080]	ND	(5.5)	[1.093]
Methyl ethyl ketone	ND	(110)	[1.081]	ND	(110)	[1.100]	ND	(110)	[1.080]	ND	(110)	[1.093]
Methylene chloride	ND	(5.4)	[1.081]	5.3 J	(5.5)	[1.100]	8.8 @	(5.4)	[1.080]	ND	(5.5)	[1.093]
Styrene	ND	(5.4)	[1.081]	ND	(5.5)	[1.100]	ND	(5.4)	[1.080]	ND	(5.5)	[1.093]
Tetrachloroethene	ND	(5.4)	[1.081]	ND	(5.5)	[1.100]	ND	(5.4)	[1.080]	ND	(5.5)	[1.093]
Toluene	ND	(5.4)	[1.081]	ND	(5.5)	[1.100]	4.1 J	(5.4)	[1.080]	ND	(5.5)	[1.093]
Tribromomethane(Bromoform)	ND	(5.4)	[1.081]	ND	(5.5)	[1.100]	ND	(5.4)	[1.080]	ND	(5.5)	[1.093]
Trichloroethene	ND	(5.4)	[1.081]	ND	(5.5)	[1.100]	ND	(5.4)	[1.080]	ND	(5.5)	[1.093]

Compiled: 8 February 1994 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)																
	NONE 2A CAN97-2A-06 8 - 10			NONE 2A CAN97-2A-I 4 - 6			NONE 2A CAN97-2A-S 0.5 - 1			NONE 2B CAN97-2B-06 8 - 10		
Trichlorofluoromethane	ND	(11)	[1.081]	ND	(11)	[1.100]	ND	(11)	[1.080]	ND	(11)	[1.093]
Vinyl acetate	ND	(5.4)	[1.081]	ND	(5.5)	[1.100]	ND	(5.4)	[1.080]	ND	(5.5)	[1.093]
Vinyl chloride	ND	(11)	[1.081]	ND	(11)	[1.100]	ND	(11)	[1.080]	ND	(11)	[1.093]
Xylenes	ND	(5.4)	[1.081]	ND	(5.5)	[1.100]	1.2 J	(5.4)	[1.080]	ND	(5.5)	[1.093]
cis-1,3-Dichloropropene	ND	(5.4)	[1.081]	ND	(5.5)	[1.100]	ND	(5.4)	[1.080]	ND	(5.5)	[1.093]
trans-1,2-Dichloroethene	ND	(5.4)	[1.081]	ND	(5.5)	[1.100]	ND	(5.4)	[1.080]	ND	(5.5)	[1.093]
trans-1,3-Dichloropropene	ND	(5.4)	[1.081]	ND	(5.5)	[1.100]	ND	(5.4)	[1.080]	ND	(5.5)	[1.093]
trans-1,4-Dichloro-2-butene	ND	(11)	[1.081]	ND	(11)	[1.100]	ND	(11)	[1.080]	ND	(11)	[1.093]
SW8270 - Semivolatile Organics (ug/kg)												
1,2,4,5-Tetrachlorobenzene	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
1,2,4-Trichlorobenzene	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
1,2-Dichlorobenzene	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
1,2-Diphenylhydrazine	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
1,3-Dichlorobenzene	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
1,4-Dichlorobenzene	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
1-Chloronaphthalene	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
1-Naphthylamine	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
2,3,4,6-Tetrachlorophenol	ND	(720)	[.036]	ND	(730)	[.037]	ND	(720)	[.036]	ND	(730)	[.036]
2,4,5-Trichlorophenol	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
2,4,6-Trichlorophenol	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
2,4-Dichlorophenol	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
2,4-Dimethylphenol	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
2,4-Dinitrophenol	ND	(1800)	[.036]	ND	(1800)	[.037]	ND	(1800)	[.036]	ND	(1800)	[.036]
2,4-Dinitrotoluene	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
2,6-Dichlorophenol	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
2,6-Dinitrotoluene	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
2-Chloronaphthalene	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
2-Chlorophenol	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
2-Methylnaphthalene	ND	(360)	[.036]	ND	(370)	[.037]	34 J	(360)	[.036]	ND	(360)	[.036]

Compiled: 8 Febr 1994 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID	LOCATION ID	SAMPLE ID	BEG. DEPTH - END DEPTH (FT.)											
	NONE	2A	CAN97-2A-06	8 - 10			NONE	2A	CAN97-2A-I	4 - 6			NONE	2A	CAN97-2A-S	0.5 - 1			NONE	2B	CAN97-2B-06	8 - 10		
2-Methylphenol(o-cresol)	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(360)	[	.036]
2-Naphthylamine	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(360)	[	.036]
2-Nitroaniline	ND	(1800)	[	.036]	ND	(1800)	[	.037]	ND	(1800)	[	.036]	ND	(1800)	[	.036]
2-Nitrophenol	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(360)	[	.036]
2-Picoline	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(360)	[	.036]
3,3'-Dichlorobenzidine	ND	(720)	[	.036]	ND	(730)	[	.037]	ND	(720)	[	.036]	ND	(730)	[	.036]
3-Methylcholanthrene	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(360)	[	.036]
3-Nitroaniline	ND	(1800)	[	.036]	ND	(1800)	[	.037]	ND	(1800)	[	.036]	ND	(1800)	[	.036]
4,6-Dinitro-2-methylphenol	ND	(1800)	[	.036]	ND	(1800)	[	.037]	ND	(1800)	[	.036]	ND	(1800)	[	.036]
4-Aminobiphenyl	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(360)	[	.036]
4-Bromophenyl phenyl ether	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(360)	[	.036]
4-Chloro-3-methylphenol	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(360)	[	.036]
4-Chlorophenyl phenyl ether	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(360)	[	.036]
4-Methylphenol(p-cresol)	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(360)	[	.036]
4-Nitroaniline	ND	(1800)	[	.036]	ND	(1800)	[	.037]	ND	(1800)	[	.036]	ND	(1800)	[	.036]
4-Nitrophenol	ND	(1800)	[	.036]	ND	(1800)	[	.037]	ND	(1800)	[	.036]	ND	(1800)	[	.036]
7,12-Dimethylbenz(a)anthracene	ND	(900)	[	.036]	ND	(920)	[	.037]	ND	(900)	[	.036]	ND	(910)	[	.036]
Acenaphthene	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(360)	[	.036]
Acenaphthylene	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(360)	[	.036]
Acetophenone	ND	(360)	[	.036]	ND	(370)	[	.037]	36 J	(360)	[	.036]	ND	(360)	[	.036]
Aniline	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(360)	[	.036]
Anthracene	ND	(360)	[	.036]	ND	(370)	[	.037]	15 J	(360)	[	.036]	ND	(360)	[	.036]
Benzidine	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(360)	[	.036]
Benzo(a)anthracene	ND	(360)	[	.036]	ND	(370)	[	.037]	43 J	(360)	[	.036]	ND	(360)	[	.036]
Benzo(a)pyrene	ND	(360)	[	.036]	ND	(370)	[	.037]	35 J	(360)	[	.036]	ND	(360)	[	.036]
Benzo(b)fluoranthene	ND	(360)	[	.036]	ND	(370)	[	.037]	86 JX	(360)	[	.036]	ND	(360)	[	.036]
Benzo(g,h,i)perylene	ND	(360)	[	.036]	ND	(370)	[	.037]	25 J	(360)	[	.036]	ND	(360)	[	.036]
Benzo(k)fluoranthene	ND	(360)	[	.036]	ND	(370)	[	.037]	86 JX	(360)	[	.036]	ND	(360)	[	.036]
Benzoic acid	ND	(1800)	[	.036]	ND	(1800)	[	.037]	ND	(1800)	[	.036]	ND	(1800)	[	.036]

Compiled: 8 February 1994 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	NONE 2A CAN97-2A-06 8 - 10			NONE 2A CAN97-2A-I 4 - 6			NONE 2A CAN97-2A-S 0.5 - 1			NONE 2B CAN97-2B-06 8 - 10		
Benzyl alcohol	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
Butylbenzylphthalate	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
Chrysene	ND	(360)	[.036]	ND	(370)	[.037]	49 J	(360)	[.036]	ND	(360)	[.036]
Di-n-octylphthalate	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
Dibenz(a,h)anthracene	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
Dibenz(a,j)acridine	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
Dibenzofuran	ND	(360)	[.036]	ND	(370)	[.037]	9.9 J	(360)	[.036]	ND	(360)	[.036]
Dibutylphthalate	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
Diethylphthalate	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
Dimethylphenethylamine	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
Dimethylphthalate	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
Diphenylamine	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
Ethyl methanesulfonate	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
Fluoranthene	ND	(360)	[.036]	ND	(370)	[.037]	81 J	(360)	[.036]	ND	(360)	[.036]
Fluorene	ND	(360)	[.036]	ND	(370)	[.037]	6.7 J	(360)	[.036]	ND	(360)	[.036]
Hexachlorobenzene	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
Hexachlorobutadiene	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
Hexachlorocyclopentadiene	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
Hexachloroethane	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
Indeno(1,2,3-cd)pyrene	ND	(360)	[.036]	ND	(370)	[.037]	24 J	(360)	[.036]	ND	(360)	[.036]
Isophorone	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
Methyl methanesulfonate	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
N-Nitroso-di-n-butylamine	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
N-Nitrosodimethylamine	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
N-Nitrosodiphenylamine	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
N-Nitrosodipropylamine	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
N-Nitrosopiperidine	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
Naphthalene	ND	(360)	[.036]	ND	(370)	[.037]	17 J	(360)	[.036]	ND	(360)	[.036]
Nitrobenzene	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]

Compiled: 8 Febr 1994 () = Reporting Limit [] = Factor Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	NONE 2A CAN97-2A-06 8 - 10			NONE 2A CAN97-2A-1 4 - 6			NONE 2A CAN97-2A-S 0.5 - 1			NONE 2B CAN97-2B-06 8 - 10		
Pentachlorobenzene	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
Pentachloronitrobenzene	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
Pentachlorophenol	ND	(1800)	[.036]	ND	(1800)	[.037]	ND	(1800)	[.036]	ND	(1800)	[.036]
Phenacetin	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
Phenanthrene	ND	(360)	[.036]	ND	(370)	[.037]	86 J	(360)	[.036]	ND	(360)	[.036]
Phenol	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
Pronamide	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
Pyrene	ND	(360)	[.036]	ND	(370)	[.037]	69 J	(360)	[.036]	ND	(360)	[.036]
Pyridine	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
Unknown	290	(0)	[.036]	150	(0)	[.037]	540	(0)	[.036]	260	(0)	[.036]
Unknown alkane	NA			NA			180	(0)	[.036]	NA		
Unknown trimethylhexene	NA			NA			NA			550	(0)	[.036]
bis(2-Chloroethoxy)methane	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
bis(2-Chloroethyl)ether	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
bis(2-Chloroisopropyl)ether	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
bis(2-Ethylhexyl)phthalate	ND	(360)	[.036]	63 J	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
p-Chloroaniline	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
p-Dimethylaminoazobenzene	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID	LOCATION ID	SAMPLE ID	BEG. DEPTH - END DEPTH (FT.)											
	NONE	2B	CAN97-2B-I	4 - 6			NONE	2B	CAN97-2B-99 Dup of CAN97-2B-I	4 - 6			NONE	2B	CAN97-2B-S	0.5 - 1			NONE	3A	CAN97-3A-06	8 - 10		
EPA 418.1 - Total Recoverable Petroleum Hydrocarbons (mg/kg)																								
Hydrocarbons	29 @		(27)	[5.328]			32 @		(26)	[5.255]			2500		(53)	[10.557]			6.7 @		(28)	[5.535]		
SW8015 - Total Petroleum Hydrocarbons (ug/kg)																								
Benzene (2)		NA						NA					3.9 J		(32)	[107.000]				NA				
Diesel (2)		NA						NA					49000 J		(53000)	[059.322]			5400 J		(5500)	[110.497]		
Ethylbenzene (2)		NA						NA					ND		(32)	[107.000]				NA				
Gasoline (2)		NA						NA					ND		(5400)	[107.000]				NA				
Jet fuel (2)		NA						NA					ND		(110000)	[059.322]			ND		(11000)	[110.497]		
Kerosene (2)		NA						NA					ND		(110000)	[059.322]			ND		(11000)	[110.497]		
Toluene (2)		NA						NA					20 J		(32)	[107.000]				NA				
Xylenes (total) (2)		NA						NA					21 J		(54)	[107.000]				NA				
SW8080 - Organochlorine Pesticides and PCBs (ug/kg)																								
4,4'-DDD	ND		(0.36)	[35.778]			ND		(0.36)	[35.562]			9.4 @		(8.8)	[882.145]			ND		(0.37)	[36.928]		
4,4'-DDE	ND		(0.36)	[35.778]			ND		(0.36)	[35.562]			10 @		(8.8)	[882.145]			ND		(0.37)	[36.928]		
4,4'-DDT	ND		(0.72)	[35.778]			1.4 G@		(0.71)	[35.562]			30 @		(18)	[882.145]			ND		(0.74)	[36.928]		
Aldrin	ND		(0.36)	[35.778]			ND		(0.36)	[35.562]			ND		(8.8)	[882.145]			ND		(0.37)	[36.928]		
Chlordane	ND		(1.8)	[35.778]			ND		(1.8)	[35.562]			ND		(44)	[882.145]			ND		(1.8)	[36.928]		
Dieldrin	ND		(0.36)	[35.778]			ND		(0.36)	[35.562]			ND		(8.8)	[882.145]			ND		(0.37)	[36.928]		
Endosulfan I	ND		(0.36)	[35.778]			ND		(0.36)	[35.562]			ND		(8.8)	[882.145]			ND		(0.37)	[36.928]		
Endosulfan II	ND		(1.1)	[35.778]			ND		(1.1)	[35.562]			ND		(26)	[882.145]			ND		(1.1)	[36.928]		
Endosulfan Sulfate	ND		(1.8)	[35.778]			ND		(1.8)	[35.562]			ND		(44)	[882.145]			ND		(1.8)	[36.928]		
Endrin	ND		(0.36)	[35.778]			ND		(0.36)	[35.562]			ND		(8.8)	[882.145]			ND		(0.37)	[36.928]		
Endrin Aldehyde	ND		(0.72)	[35.778]			ND		(0.71)	[35.562]			ND		(18)	[882.145]			ND		(0.74)	[36.928]		
Endrin Ketone	ND		(1.8)	[35.778]			ND		(1.8)	[35.562]			ND		(44)	[882.145]			ND		(1.8)	[36.928]		
Heptachlor	ND		(0.36)	[35.778]			ND		(0.36)	[35.562]			ND		(8.8)	[882.145]			ND		(0.37)	[36.928]		
Heptachlor epoxide	ND		(0.36)	[35.778]			ND		(0.36)	[35.562]			ND		(8.8)	[882.145]			ND		(0.37)	[36.928]		
Methoxychlor	ND		(1.8)	[35.778]			ND		(1.8)	[35.562]			ND		(44)	[882.145]			ND		(1.8)	[36.928]		
PCB-1016	ND		(3.6)	[35.778]			ND		(3.6)	[35.562]			ND		(88)	[882.145]			ND		(3.7)	[36.928]		
PCB-1221	ND		(7.2)	[35.778]			ND		(7.1)	[35.562]			ND		(180)	[882.145]			ND		(7.4)	[36.928]		

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TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 2B CAN97-2B-1 4 - 6			NONE 2B CAN97-2B-99 Dup of CAN97-2B-I 4 - 6			NONE 2B CAN97-2B-S 0.5 - 1			NONE 3A CAN97-3A-06 8 - 10		
PCB-1232	ND	(7.2)	[35.778]	ND	(7.1)	[35.562]	ND	(180)	[882.145]	ND	(7.4)	[36.928]
PCB-1242	ND	(3.6)	[35.778]	ND	(3.6)	[35.562]	ND	(88)	[882.145]	ND	(3.7)	[36.928]
PCB-1248	ND	(3.6)	[35.778]	ND	(3.6)	[35.562]	ND	(88)	[882.145]	ND	(3.7)	[36.928]
PCB-1254	ND	(7.2)	[35.778]	ND	(7.1)	[35.562]	ND	(180)	[882.145]	ND	(7.4)	[36.928]
PCB-1260	ND	(7.2)	[35.778]	ND	(7.1)	[35.562]	ND	(180)	[882.145]	ND	(7.4)	[36.928]
Toxaphene	ND	(18)	[35.778]	ND	(18)	[35.562]	ND	(440)	[882.145]	ND	(18)	[36.928]
alpha-BHC	ND	(0.36)	[35.778]	ND	(0.36)	[35.562]	ND	(8.8)	[882.145]	ND	(0.37)	[36.928]
beta-BHC	ND	(0.36)	[35.778]	ND	(0.36)	[35.562]	1.3 J	(8.8)	[882.145]	ND	(0.37)	[36.928]
delta-BHC	ND	(0.36)	[35.778]	ND	(0.36)	[35.562]	ND	(8.8)	[882.145]	ND	(0.37)	[36.928]
gamma-BHC	0.33 J	(0.36)	[35.778]	0.34 J	(0.36)	[35.562]	ND	(8.8)	[882.145]	ND	(0.37)	[36.928]
SW8150 - Chlorinated Herbicides (ug/kg)												
2,4,5-T	NA			NA			ND	(7.1)	[35.323]	ND	(7.4)	[36.900]
2,4,5-TP (Silvex)	NA			NA			ND	(6)	[35.323]	ND	(6.3)	[36.900]
2,4-D	NA			NA			ND	(42)	[35.323]	ND	(44)	[36.900]
2,4-DB	NA			NA			ND	(32)	[35.323]	ND	(34)	[36.900]
Dalapon	NA			NA			ND	(200)	[35.323]	ND	(210)	[36.900]
Dicamba	NA			NA			ND	(9.5)	[35.323]	ND	(10)	[36.900]
Dichloroprop	NA			NA			4 J	(23)	[35.323]	21 J	(24)	[36.900]
Dinoseb	NA			NA			ND	(5.3)	[35.323]	ND	(5.5)	[36.900]
MCPA	NA			NA			ND	(8800)	[35.323]	ND	(9200)	[36.900]
MCPP	NA			NA			ND	(6800)	[35.323]	ND	(7100)	[36.900]
SW8240 - Volatile Organics (ug/kg)												
1,1,1-Trichloroethane	ND	(5.4)	[1.074]	ND	(5.3)	[1.067]	ND	(5.3)	[1.060]	ND	(5.5)	[1.109]
1,1,2,2-Tetrachloroethane	ND	(5.4)	[1.074]	ND	(5.3)	[1.067]	ND	(5.3)	[1.060]	ND	(5.5)	[1.109]
1,1,2-Trichloroethane	ND	(5.4)	[1.074]	ND	(5.3)	[1.067]	ND	(5.3)	[1.060]	ND	(5.5)	[1.109]
1,1-Dichloroethane	ND	(5.4)	[1.074]	ND	(5.3)	[1.067]	ND	(5.3)	[1.060]	ND	(5.5)	[1.109]
1,1-Dichloroethene	ND	(5.4)	[1.074]	ND	(5.3)	[1.067]	ND	(5.3)	[1.060]	ND	(5.5)	[1.109]
1,2,3-Trichloropropane	ND	(5.4)	[1.074]	ND	(5.3)	[1.067]	ND	(5.3)	[1.060]	ND	(5.5)	[1.109]
1,2-Dichloroethane	ND	(5.4)	[1.074]	ND	(5.3)	[1.067]	ND	(5.3)	[1.060]	ND	(5.5)	[1.109]

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TABLE B1

RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID	LOCATION ID	SAMPLE ID	BEG. DEPTH - END DEPTH (FT.)												
	NONE	2B	CAN97-2B-I	4 - 6			NONE	2B	CAN97-2B-99 Dup of CAN97-2B-I	4 - 6			NONE	2B	CAN97-2B-S	0.5 - 1		
	NONE	2B	CAN97-2B-I	4 - 6			NONE	2B	CAN97-2B-99 Dup of CAN97-2B-I	4 - 6			NONE	2B	CAN97-2B-S	0.5 - 1		
	NONE	3A	CAN97-3A-06	8 - 10														
1,2-Dichloropropane	ND	(5.4)	[1.074]	ND	(5.3)	[1.067]	ND	(5.3)	[1.060]	ND	(5.5)	[1.109]						
2-Chloroethyl vinyl ether	ND	(11)	[1.074]	ND	(11)	[1.067]	ND	(11)	[1.060]	ND	(11)	[1.109]						
2-Hexanone	ND	(54)	[1.074]	ND	(53)	[1.067]	ND	(53)	[1.060]	ND	(55)	[1.109]						
4-Methyl-2-pentanone(MIBK)	ND	(54)	[1.074]	ND	(53)	[1.067]	ND	(53)	[1.060]	ND	(55)	[1.109]						
Acetone	38 J	(110)	[1.074]	ND	(110)	[1.067]	ND	(110)	[1.060]	100 J	(110)	[1.109]						
Acrolein	ND	(81)	[1.074]	ND	(80)	[1.067]	ND	(80)	[1.060]	ND	(83)	[1.109]						
Acrylonitrile	ND	(54)	[1.074]	ND	(53)	[1.067]	ND	(53)	[1.060]	ND	(55)	[1.109]						
Benzene	ND	(5.4)	[1.074]	ND	(5.3)	[1.067]	ND	(5.3)	[1.060]	ND	(5.5)	[1.109]						
Bromodichloromethane	ND	(5.4)	[1.074]	ND	(5.3)	[1.067]	ND	(5.3)	[1.060]	ND	(5.5)	[1.109]						
Bromomethane	ND	(11)	[1.074]	ND	(11)	[1.067]	ND	(11)	[1.060]	ND	(11)	[1.109]						
Carbon disulfide	ND	(5.4)	[1.074]	ND	(5.3)	[1.067]	ND	(5.3)	[1.060]	ND	(5.5)	[1.109]						
Carbon tetrachloride	ND	(5.4)	[1.074]	ND	(5.3)	[1.067]	ND	(5.3)	[1.060]	ND	(5.5)	[1.109]						
Chlorobenzene	ND	(5.4)	[1.074]	ND	(5.3)	[1.067]	ND	(5.3)	[1.060]	ND	(5.5)	[1.109]						
Chloroethane	ND	(11)	[1.074]	ND	(11)	[1.067]	ND	(11)	[1.060]	ND	(11)	[1.109]						
Chloroform	ND	(5.4)	[1.074]	ND	(5.3)	[1.067]	ND	(5.3)	[1.060]	ND	(5.5)	[1.109]						
Chloromethane	ND	(11)	[1.074]	ND	(11)	[1.067]	ND	(11)	[1.060]	ND	(11)	[1.109]						
Dibromochloromethane	ND	(5.4)	[1.074]	ND	(5.3)	[1.067]	ND	(5.3)	[1.060]	ND	(5.5)	[1.109]						
Dibromomethane	ND	(5.4)	[1.074]	ND	(5.3)	[1.067]	ND	(5.3)	[1.060]	ND	(5.5)	[1.109]						
Dichlorodifluoromethane	ND	(21)	[1.074]	ND	(21)	[1.067]	ND	(21)	[1.060]	ND	(22)	[1.109]						
Ethyl benzene	ND	(5.4)	[1.074]	ND	(5.3)	[1.067]	ND	(5.3)	[1.060]	0.43 J	(5.5)	[1.109]						
Ethyl methacrylate	ND	(16)	[1.074]	ND	(16)	[1.067]	ND	(16)	[1.060]	ND	(17)	[1.109]						
Iodomethane	ND	(5.4)	[1.074]	ND	(5.3)	[1.067]	ND	(5.3)	[1.060]	ND	(5.5)	[1.109]						
Methyl ethyl ketone	ND	(110)	[1.074]	ND	(110)	[1.067]	ND	(110)	[1.060]	ND	(110)	[1.109]						
Methylene chloride	ND	(5.4)	[1.074]	ND	(5.3)	[1.067]	18 @	(5.3)	[1.060]	9.5 @	(5.5)	[1.109]						
Styrene	ND	(5.4)	[1.074]	ND	(5.3)	[1.067]	ND	(5.3)	[1.060]	ND	(5.5)	[1.109]						
Tetrachloroethene	ND	(5.4)	[1.074]	ND	(5.3)	[1.067]	ND	(5.3)	[1.060]	ND	(5.5)	[1.109]						
Toluene	ND	(5.4)	[1.074]	ND	(5.3)	[1.067]	2.3 J	(5.3)	[1.060]	9.2 @	(5.5)	[1.109]						
Tribromomethane(Bromoform)	ND	(5.4)	[1.074]	ND	(5.3)	[1.067]	ND	(5.3)	[1.060]	ND	(5.5)	[1.109]						
Trichloroethene	ND	(5.4)	[1.074]	ND	(5.3)	[1.067]	ND	(5.3)	[1.060]	ND	(5.5)	[1.109]						

Compiled: 8 Feb 1994 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)														
	NONE 2B CAN97-2B-I 4 - 6				NONE 2B CAN97-2B-99 Dup of CAN97-2B-I 4 - 6				NONE 2B CAN97-2B-S 0.5 - 1				NONE 3A CAN97-3A-06 8 - 10		
Trichlorofluoromethane	ND	(11)	[1.074]		ND	(11)	[1.067]		ND	(11)	[1.060]		ND	(11)	[1.109]
Vinyl acetate	ND	(5.4)	[1.074]		ND	(5.3)	[1.067]		ND	(5.3)	[1.060]		ND	(5.5)	[1.109]
Vinyl chloride	ND	(11)	[1.074]		ND	(11)	[1.067]		ND	(11)	[1.060]		ND	(11)	[1.109]
Xylenes	ND	(5.4)	[1.074]		ND	(5.3)	[1.067]		ND	(5.3)	[1.060]		2.8 J	(5.5)	[1.109]
cis-1,3-Dichloropropene	ND	(5.4)	[1.074]		ND	(5.3)	[1.067]		ND	(5.3)	[1.060]		ND	(5.5)	[1.109]
trans-1,2-Dichloroethene	ND	(5.4)	[1.074]		ND	(5.3)	[1.067]		ND	(5.3)	[1.060]		ND	(5.5)	[1.109]
trans-1,3-Dichloropropene	ND	(5.4)	[1.074]		ND	(5.3)	[1.067]		ND	(5.3)	[1.060]		ND	(5.5)	[1.109]
trans-1,4-Dichloro-2-butene	ND	(11)	[1.074]		ND	(11)	[1.067]		ND	(11)	[1.060]		ND	(11)	[1.109]
SW8270 - Semivolatile Organics (ug/kg)															
1,2,4,5-Tetrachlorobenzene	ND	(360)	[.036]		ND	(360)	[.036]		ND	(350)	[.035]		ND	(370)	[.037]
1,2,4-Trichlorobenzene	ND	(360)	[.036]		ND	(360)	[.036]		ND	(350)	[.035]		ND	(370)	[.037]
1,2-Dichlorobenzene	ND	(360)	[.036]		ND	(360)	[.036]		ND	(350)	[.035]		ND	(370)	[.037]
1,2-Diphenylhydrazine	ND	(360)	[.036]		ND	(360)	[.036]		ND	(350)	[.035]		ND	(370)	[.037]
1,3-Dichlorobenzene	ND	(360)	[.036]		ND	(360)	[.036]		ND	(350)	[.035]		ND	(370)	[.037]
1,4-Dichlorobenzene	ND	(360)	[.036]		ND	(360)	[.036]		ND	(350)	[.035]		ND	(370)	[.037]
1-Chloronaphthalene	ND	(360)	[.036]		ND	(360)	[.036]		ND	(350)	[.035]		ND	(370)	[.037]
1-Naphthylamine	ND	(360)	[.036]		ND	(360)	[.036]		ND	(350)	[.035]		ND	(370)	[.037]
2,3,4,6-Tetrachlorophenol	ND	(720)	[.036]		ND	(710)	[.036]		ND	(710)	[.035]		ND	(740)	[.037]
2,4,5-Trichlorophenol	ND	(360)	[.036]		ND	(360)	[.036]		ND	(350)	[.035]		ND	(370)	[.037]
2,4,6-Trichlorophenol	ND	(360)	[.036]		ND	(360)	[.036]		ND	(350)	[.035]		ND	(370)	[.037]
2,4-Dichlorophenol	ND	(360)	[.036]		ND	(360)	[.036]		ND	(350)	[.035]		ND	(370)	[.037]
2,4-Dimethylphenol	ND	(360)	[.036]		ND	(360)	[.036]		ND	(350)	[.035]		ND	(370)	[.037]
2,4-Dinitrophenol	ND	(1800)	[.036]		ND	(1800)	[.036]		ND	(1800)	[.035]		ND	(1800)	[.037]
2,4-Dinitrotoluene	ND	(360)	[.036]		ND	(360)	[.036]		ND	(350)	[.035]		ND	(370)	[.037]
2,6-Dichlorophenol	ND	(360)	[.036]		ND	(360)	[.036]		ND	(350)	[.035]		ND	(370)	[.037]
2,6-Dinitrotoluene	ND	(360)	[.036]		ND	(360)	[.036]		ND	(350)	[.035]		ND	(370)	[.037]
2-Chloronaphthalene	ND	(360)	[.036]		ND	(360)	[.036]		ND	(350)	[.035]		ND	(370)	[.037]
2-Chlorophenol	ND	(360)	[.036]		ND	(360)	[.036]		ND	(350)	[.035]		ND	(370)	[.037]
2-Methylnaphthalene	ND	(360)	[.036]		ND	(360)	[.036]		160 J	(350)	[.035]		ND	(370)	[.037]

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TABLE B1

RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)														
	NONE 2B CAN97-2B-I 4 - 6			NONE 2B CAN97-2B-99 Dup of CAN97-2B-I 4 - 6			NONE 2B CAN97-2B-S 0.5 - 1			NONE 3A CAN97-3A-06 8 - 10		
2-Methylphenol(o-cresol)	ND	(360)	[.036]	ND	(360)	[.036]	ND	(350)	[.035]	ND	(370)	[.037]
2-Naphthylamine	ND	(360)	[.036]	ND	(360)	[.036]	ND	(350)	[.035]	ND	(370)	[.037]
2-Nitroaniline	ND	(1800)	[.036]	ND	(1800)	[.036]	ND	(1800)	[.035]	ND	(1800)	[.037]
2-Nitrophenol	ND	(360)	[.036]	ND	(360)	[.036]	ND	(350)	[.035]	ND	(370)	[.037]
2-Picoline	ND	(360)	[.036]	ND	(360)	[.036]	ND	(350)	[.035]	ND	(370)	[.037]
3,3'-Dichlorobenzidine	ND	(720)	[.036]	ND	(710)	[.036]	ND	(710)	[.035]	ND	(740)	[.037]
3-Methylcholanthrene	ND	(360)	[.036]	ND	(360)	[.036]	ND	(350)	[.035]	ND	(370)	[.037]
3-Nitroaniline	ND	(1800)	[.036]	ND	(1800)	[.036]	ND	(1800)	[.035]	ND	(1800)	[.037]
4,6-Dinitro-2-methylphenol	ND	(1800)	[.036]	ND	(1800)	[.036]	ND	(1800)	[.035]	ND	(1800)	[.037]
4-Aminobiphenyl	ND	(360)	[.036]	ND	(360)	[.036]	84 J	(350)	[.035]	ND	(370)	[.037]
4-Bromophenyl phenyl ether	ND	(360)	[.036]	ND	(360)	[.036]	ND	(350)	[.035]	ND	(370)	[.037]
4-Chloro-3-methylphenol	ND	(360)	[.036]	ND	(360)	[.036]	ND	(350)	[.035]	ND	(370)	[.037]
4-Chlorophenyl phenyl ether	ND	(360)	[.036]	ND	(360)	[.036]	ND	(350)	[.035]	ND	(370)	[.037]
4-Methylphenol(p-cresol)	ND	(360)	[.036]	ND	(360)	[.036]	ND	(350)	[.035]	ND	(370)	[.037]
4-Nitroaniline	ND	(1800)	[.036]	ND	(1800)	[.036]	ND	(1800)	[.035]	ND	(1800)	[.037]
4-Nitrophenol	ND	(1800)	[.036]	ND	(1800)	[.036]	ND	(1800)	[.035]	ND	(1800)	[.037]
7,12-Dimethylbenz(a)anthracene	ND	(890)	[.036]	ND	(890)	[.036]	ND	(880)	[.035]	ND	(920)	[.037]
Acenaphthene	ND	(360)	[.036]	ND	(360)	[.036]	ND	(350)	[.035]	ND	(370)	[.037]
Acenaphthylene	ND	(360)	[.036]	ND	(360)	[.036]	ND	(350)	[.035]	ND	(370)	[.037]
Acetophenone	ND	(360)	[.036]	ND	(360)	[.036]	54 J	(350)	[.035]	ND	(370)	[.037]
Aniline	ND	(360)	[.036]	ND	(360)	[.036]	ND	(350)	[.035]	ND	(370)	[.037]
Anthracene	ND	(360)	[.036]	ND	(360)	[.036]	6.3 J	(350)	[.035]	ND	(370)	[.037]
Benzidine	ND	(360)	[.036]	ND	(360)	[.036]	ND	(350)	[.035]	ND	(370)	[.037]
Benzo(a)anthracene	ND	(360)	[.036]	ND	(360)	[.036]	21 J	(350)	[.035]	ND	(370)	[.037]
Benzo(a)pyrene	ND	(360)	[.036]	ND	(360)	[.036]	18 J	(350)	[.035]	ND	(370)	[.037]
Benzo(b)fluoranthene	ND	(360)	[.036]	ND	(360)	[.036]	32 JX	(350)	[.035]	ND	(370)	[.037]
Benzo(g,h,i)perylene	ND	(360)	[.036]	ND	(360)	[.036]	18 J	(350)	[.035]	ND	(370)	[.037]
Benzo(k)fluoranthene	ND	(360)	[.036]	ND	(360)	[.036]	32 JX	(350)	[.035]	ND	(370)	[.037]
Benzoic acid	ND	(1800)	[.036]	ND	(1800)	[.036]	ND	(1800)	[.035]	ND	(1800)	[.037]

Compiled: 8 Feb 1994

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TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

	SITE ID											
	LOCATION ID											
	SAMPLE ID											
	BEG. DEPTH - END DEPTH (FT.)											
PARAMETER	NONE 2B CAN97-2B-1 4 - 6			NONE 2B CAN97-2B-99 Dup of CAN97-2B-1 4 - 6			NONE 2B CAN97-2B-S 0.5 - 1			NONE 3A CAN97-3A-06 8 - 10		
Benzyl alcohol	ND	(360)	[.036]	ND	(360)	[.036]	ND	(350)	[.035]	ND	(370)	[.037]
Butylbenzylphthalate	ND	(360)	[.036]	ND	(360)	[.036]	ND	(350)	[.035]	ND	(370)	[.037]
Chrysene	ND	(360)	[.036]	ND	(360)	[.036]	24 J	(350)	[.035]	ND	(370)	[.037]
Di-n-octylphthalate	ND	(360)	[.036]	ND	(360)	[.036]	ND	(350)	[.035]	ND	(370)	[.037]
Dibenz(a,h)anthracene	ND	(360)	[.036]	ND	(360)	[.036]	ND	(350)	[.035]	ND	(370)	[.037]
Dibenz(a,j)acridine	ND	(360)	[.036]	ND	(360)	[.036]	ND	(350)	[.035]	ND	(370)	[.037]
Dibenzofuran	ND	(360)	[.036]	ND	(360)	[.036]	23 J	(350)	[.035]	ND	(370)	[.037]
Dibutylphthalate	ND	(360)	[.036]	ND	(360)	[.036]	ND	(350)	[.035]	ND	(370)	[.037]
Diethylphthalate	ND	(360)	[.036]	ND	(360)	[.036]	ND	(350)	[.035]	ND	(370)	[.037]
Dimethylphenethylamine	ND	(360)	[.036]	ND	(360)	[.036]	ND	(350)	[.035]	ND	(370)	[.037]
Dimethylphthalate	ND	(360)	[.036]	ND	(360)	[.036]	ND	(350)	[.035]	ND	(370)	[.037]
Diphenylamine	ND	(360)	[.036]	ND	(360)	[.036]	ND	(350)	[.035]	ND	(370)	[.037]
Ethyl methanesulfonate	ND	(360)	[.036]	ND	(360)	[.036]	ND	(350)	[.035]	ND	(370)	[.037]
Fluoranthene	ND	(360)	[.036]	ND	(360)	[.036]	29 J	(350)	[.035]	ND	(370)	[.037]
Fluorene	ND	(360)	[.036]	ND	(360)	[.036]	ND	(350)	[.035]	ND	(370)	[.037]
Hexachlorobenzene	ND	(360)	[.036]	ND	(360)	[.036]	ND	(350)	[.035]	ND	(370)	[.037]
Hexachlorobutadiene	ND	(360)	[.036]	ND	(360)	[.036]	ND	(350)	[.035]	ND	(370)	[.037]
Hexachlorocyclopentadiene	ND	(360)	[.036]	ND	(360)	[.036]	ND	(350)	[.035]	ND	(370)	[.037]
Hexachloroethane	ND	(360)	[.036]	ND	(360)	[.036]	ND	(350)	[.035]	ND	(370)	[.037]
Indeno(1,2,3-cd)pyrene	ND	(360)	[.036]	ND	(360)	[.036]	4.2 J	(350)	[.035]	ND	(370)	[.037]
Isophorone	ND	(360)	[.036]	ND	(360)	[.036]	ND	(350)	[.035]	ND	(370)	[.037]
Methyl methanesulfonate	ND	(360)	[.036]	ND	(360)	[.036]	ND	(350)	[.035]	ND	(370)	[.037]
N-Nitroso-di-n-butylamine	ND	(360)	[.036]	ND	(360)	[.036]	ND	(350)	[.035]	ND	(370)	[.037]
N-Nitrosodimethylamine	ND	(360)	[.036]	ND	(360)	[.036]	ND	(350)	[.035]	ND	(370)	[.037]
N-Nitrosodiphenylamine	ND	(360)	[.036]	ND	(360)	[.036]	ND	(350)	[.035]	ND	(370)	[.037]
N-Nitrosodipropylamine	ND	(360)	[.036]	ND	(360)	[.036]	ND	(350)	[.035]	ND	(370)	[.037]
N-Nitrosopiperidine	ND	(360)	[.036]	ND	(360)	[.036]	ND	(350)	[.035]	ND	(370)	[.037]
Naphthalene	ND	(360)	[.036]	ND	(360)	[.036]	110 J	(350)	[.035]	ND	(370)	[.037]
Nitrobenzene	ND	(360)	[.036]	ND	(360)	[.036]	ND	(350)	[.035]	ND	(370)	[.037]

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TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID	LOCATION ID	SAMPLE ID	BEG. DEPTH - END DEPTH (FT.)																
	NONE	2B	CAN97-2B-I	4 - 6			NONE	2B	CAN97-2B-99 Dup of CAN97-2B-I	4 - 6			NONE	2B	CAN97-2B-S	0.5 - 1			NONE	3A	CAN97-3A-06	8 - 10		
Pentachlorobenzene	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(370)	[	.037]
Pentachloronitrobenzene	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(370)	[	.037]
Pentachlorophenol	ND	(1800)	[	.036]	ND	(1800)	[	.036]	ND	(1800)	[	.035]	ND	(1800)	[	.037]
Phenacetin	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(370)	[	.037]
Phenanthrene	ND	(360)	[	.036]	ND	(360)	[	.036]	46 J	(350)	[	.035]	ND	(370)	[	.037]
Phenol	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(370)	[	.037]
Pronamide	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(370)	[	.037]
Pyrene	ND	(360)	[	.036]	ND	(360)	[	.036]	34 J	(350)	[	.035]	ND	(370)	[	.037]
Pyridine	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(370)	[	.037]
Unknown	390	(0)	[	.036]	280	(0)	[	.036]	490	(0)	[	.035]	150	(0)	[	.037]
Unknown B	NA				NA				NA				300	(0)	[	.037]
Unknown C3-Naphthalene	NA				NA				180	(0)	[	.035]	NA			
Unknown alkane	NA				NA				350	(0)	[	.035]	NA			
Unknown cyclic ether B	NA				NA				NA				440	(0)	[	.037]
Unknown cyclohexane	NA				180	(0)	[	.036]	NA				NA			
Unknown trimethylhexene	NA				640	(0)	[	.036]	NA				NA			
Unknown turpene	NA				250	(0)	[	.036]	NA				NA			
bis(2-Chloroethoxy)methane	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(370)	[	.037]
bis(2-Chloroethyl)ether	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(370)	[	.037]
bis(2-Chloroisopropyl)ether	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(370)	[	.037]
bis(2-Ethylhexyl)phthalate	16 J	(360)	[	.036]	170 J	(360)	[	.036]	27 J	(350)	[	.035]	ND	(370)	[	.037]
p-Chloroaniline	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(370)	[	.037]
p-Dimethylaminoazobenzene	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(370)	[	.037]

TABLE B1

RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 3A CAN97-3A-I 4 - 6			NONE 3A CAN97-3A-S 0 - 2			NONE 3B CAN97-3B-06 8 - 10			NONE 3B CAN97-3B-I 4 - 6		
EPA 418.1 - Total Recoverable Petroleum Hydrocarbons (mg/kg)												
Hydrocarbons	22 @	(28)	[5.612]	330	(29)	[5.797]	31 @	(28)	[5.676]	110 @	(29)	[5.808]
SW8015 - Total Petroleum Hydrocarbons (ug/kg)												
Benzene (2)	NA			ND	(34)	[113.000]	NA			NA		
Diesel (2)	4800 J	(5600)	[112.360]	5300 J	(5600)	[111.857]	NA			NA		
Ethylbenzene (2)	NA			ND	(34)	[113.000]	NA			NA		
Gasoline (2)	NA			ND	(5600)	[113.000]	NA			NA		
Jet fuel (2)	ND	(11000)	[112.360]	ND	(11000)	[111.857]	NA			NA		
Kerosene (2)	ND	(11000)	[112.360]	ND	(11000)	[111.857]	NA			NA		
Toluene (2)	NA			17 J@	(34)	[113.000]	NA			NA		
Xylenes (total) (2)	NA			15 J@	(56)	[113.000]	NA			NA		
SW8080 - Organochlorine Pesticides and PCBs (ug/kg)												
4,4'-DDD	ND	(0.37)	[37.425]	ND	(3.9)	[387.147]	0.43 G@	(0.38)	[37.707]	ND	(0.39)	[38.911]
4,4'-DDE	ND	(0.37)	[37.425]	ND	(3.9)	[387.147]	0.059 J	(0.38)	[37.707]	ND	(0.39)	[38.911]
4,4'-DDT	ND	(0.75)	[37.425]	ND	(7.7)	[387.147]	ND	(0.75)	[37.707]	0.83 @	(0.78)	[38.911]
Aldrin	ND	(0.37)	[37.425]	ND	(3.9)	[387.147]	ND	(0.38)	[37.707]	ND	(0.39)	[38.911]
Chlordane	ND	(1.9)	[37.425]	ND	(19)	[387.147]	ND	(1.9)	[37.707]	ND	(1.9)	[38.911]
Dieldrin	ND	(0.37)	[37.425]	ND	(3.9)	[387.147]	ND	(0.38)	[37.707]	ND	(0.39)	[38.911]
Endosulfan I	ND	(0.37)	[37.425]	ND	(3.9)	[387.147]	ND	(0.38)	[37.707]	ND	(0.39)	[38.911]
Endosulfan II	ND	(1.1)	[37.425]	ND	(12)	[387.147]	ND	(1.1)	[37.707]	0.11 J	(1.2)	[38.911]
Endosulfan Sulfate	ND	(1.9)	[37.425]	ND	(19)	[387.147]	ND	(1.9)	[37.707]	0.078 J	(1.9)	[38.911]
Endrin	ND	(0.37)	[37.425]	ND	(3.9)	[387.147]	ND	(0.38)	[37.707]	ND	(0.39)	[38.911]
Endrin Aldehyde	ND	(0.75)	[37.425]	ND	(7.7)	[387.147]	ND	(0.75)	[37.707]	ND	(0.78)	[38.911]
Endrin Ketone	ND	(1.9)	[37.425]	ND	(19)	[387.147]	ND	(1.9)	[37.707]	ND	(1.9)	[38.911]
Heptachlor	ND	(0.37)	[37.425]	ND	(3.9)	[387.147]	0.1 J	(0.38)	[37.707]	ND	(0.39)	[38.911]
Heptachlor epoxide	ND	(0.37)	[37.425]	ND	(3.9)	[387.147]	ND	(0.38)	[37.707]	ND	(0.39)	[38.911]
Methoxychlor	ND	(1.9)	[37.425]	ND	(19)	[387.147]	ND	(1.9)	[37.707]	ND	(1.9)	[38.911]
PCB-1016	ND	(3.7)	[37.425]	ND	(39)	[387.147]	ND	(3.8)	[37.707]	ND	(3.9)	[38.911]
PCB-1221	ND	(7.5)	[37.425]	ND	(77)	[387.147]	ND	(7.5)	[37.707]	ND	(7.8)	[38.911]

Compiled: 8 February 1994

() = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 3A CAN97-3A-1 4 - 6			NONE 3A CAN97-3A-S 0 - 2			NONE 3B CAN97-3B-06 8 - 10			NONE 3B CAN97-3B-1 4 - 6		
PCB-1232	ND	(7.5)	[37.425]	ND	(77)	[387.147]	ND	(7.5)	[37.707]	ND	(7.8)	[38.911]
PCB-1242	ND	(3.7)	[37.425]	ND	(39)	[387.147]	ND	(3.8)	[37.707]	ND	(3.9)	[38.911]
PCB-1248	ND	(3.7)	[37.425]	ND	(39)	[387.147]	ND	(3.8)	[37.707]	ND	(3.9)	[38.911]
PCB-1254	ND	(7.5)	[37.425]	ND	(77)	[387.147]	ND	(7.5)	[37.707]	ND	(7.8)	[38.911]
PCB-1260	ND	(7.5)	[37.425]	ND	(77)	[387.147]	ND	(7.5)	[37.707]	ND	(7.8)	[38.911]
Toxaphene	ND	(19)	[37.425]	ND	(190)	[387.147]	ND	(19)	[37.707]	ND	(19)	[38.911]
alpha-BHC	ND	(0.37)	[37.425]	ND	(3.9)	[387.147]	ND	(0.38)	[37.707]	ND	(0.39)	[38.911]
beta-BHC	ND	(0.37)	[37.425]	ND	(3.9)	[387.147]	ND	(0.38)	[37.707]	ND	(0.39)	[38.911]
delta-BHC	ND	(0.37)	[37.425]	ND	(3.9)	[387.147]	ND	(0.38)	[37.707]	ND	(0.39)	[38.911]
gamma-CHC	ND	(0.37)	[37.425]	ND	(3.9)	[387.147]	ND	(0.38)	[37.707]	ND	(0.39)	[38.911]
SW8150 - Chlorinated Herbicides (ug/kg)												
2,4,5-T	ND	(7.5)	[37.495]	ND	(7.7)	[38.715]	NA			NA		
2,4,5-TP (Silvex)	ND	(6.4)	[37.495]	ND	(6.6)	[38.715]	NA			NA		
2,4-D	ND	(45)	[37.495]	ND	(46)	[38.715]	NA			NA		
2,4-DB	ND	(34)	[37.495]	ND	(35)	[38.715]	NA			NA		
Dalapon	ND	(220)	[37.495]	ND	(220)	[38.715]	NA			NA		
Dicamba	ND	(10)	[37.495]	ND	(10)	[38.715]	NA			NA		
Dichloroprop	17 J	(24)	[37.495]	ND	(25)	[38.715]	NA			NA		
Dinoseb	ND	(5.6)	[37.495]	ND	(5.8)	[38.715]	NA			NA		
MCPA	ND	(9300)	[37.495]	ND	(9600)	[38.715]	NA			NA		
MCPP	ND	(7200)	[37.495]	ND	(7400)	[38.715]	NA			NA		
SW8240 - Volatile Organics (ug/kg)												
1,1,1-Trichloroethane	ND	(5.6)	[1.114]	ND	(5.8)	[1.163]	ND	(5.7)	[1.133]	ND	(5.8)	[1.168]
1,1,2,2-Tetrachloroethane	ND	(5.6)	[1.114]	ND	(5.8)	[1.163]	ND	(5.7)	[1.133]	ND	(5.8)	[1.168]
1,1,2-Trichloroethane	ND	(5.6)	[1.114]	ND	(5.8)	[1.163]	ND	(5.7)	[1.133]	ND	(5.8)	[1.168]
1,1-Dichloroethane	ND	(5.6)	[1.114]	ND	(5.8)	[1.163]	ND	(5.7)	[1.133]	ND	(5.8)	[1.168]
1,1-Dichloroethene	ND	(5.6)	[1.114]	ND	(5.8)	[1.163]	ND	(5.7)	[1.133]	ND	(5.8)	[1.168]
1,2,3-Trichloropropane	ND	(5.6)	[1.114]	ND	(5.8)	[1.163]	ND	(5.7)	[1.133]	ND	(5.8)	[1.168]
1,2-Dichloroethane	ND	(5.6)	[1.114]	ND	(5.8)	[1.163]	ND	(5.7)	[1.133]	ND	(5.8)	[1.168]

Compiled: 8 Feb · 1994 () = Reporting Limit [] = Factor = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)																
	NONE 3A CAN97-3A-I 4 - 6				NONE 3A CAN97-3A-S 0 - 2				NONE 3B CAN97-3B-06 8 - 10				NONE 3B CAN97-3B-I 4 - 6			
1,2-Dichloropropane	ND	(5.6)	[1.114]		ND	(5.8)	[1.163]		ND	(5.7)	[1.133]		ND	(5.8)	[1.168]	
2-Chloroethyl vinyl ether	ND	(11)	[1.114]		ND	(12)	[1.163]		ND	(11)	[1.133]		ND	(12)	[1.168]	
2-Ethylhexyl acetate	NA				4.6	()	[1.163]		NA				NA			
2-Hexanone	ND	(56)	[1.114]		ND	(58)	[1.163]		ND	(57)	[1.133]		ND	(58)	[1.168]	
4-Methyl-2-pentanone(MIBK)	ND	(56)	[1.114]		ND	(58)	[1.163]		ND	(57)	[1.133]		ND	(58)	[1.168]	
Acetone	ND	(110)	[1.114]		ND	(120)	[1.163]		ND	(110)	[1.133]		ND	(120)	[1.168]	
Acrolein	ND	(84)	[1.114]		ND	(87)	[1.163]		ND	(85)	[1.133]		ND	(88)	[1.168]	
Acrylonitrile	ND	(56)	[1.114]		ND	(58)	[1.163]		ND	(57)	[1.133]		ND	(58)	[1.168]	
Benzene	ND	(5.6)	[1.114]		ND	(5.8)	[1.163]		ND	(5.7)	[1.133]		ND	(5.8)	[1.168]	
Bromodichloromethane	ND	(5.6)	[1.114]		ND	(5.8)	[1.163]		ND	(5.7)	[1.133]		ND	(5.8)	[1.168]	
Bromomethane	ND	(11)	[1.114]		ND	(12)	[1.163]		ND	(11)	[1.133]		ND	(12)	[1.168]	
Carbon disulfide	ND	(5.6)	[1.114]		ND	(5.8)	[1.163]		ND	(5.7)	[1.133]		ND	(5.8)	[1.168]	
Carbon tetrachloride	ND	(5.6)	[1.114]		ND	(5.8)	[1.163]		ND	(5.7)	[1.133]		ND	(5.8)	[1.168]	
Chlorobenzene	ND	(5.6)	[1.114]		ND	(5.8)	[1.163]		ND	(5.7)	[1.133]		ND	(5.8)	[1.168]	
Chloroethane	ND	(11)	[1.114]		ND	(12)	[1.163]		ND	(11)	[1.133]		ND	(12)	[1.168]	
Chloroform	ND	(5.6)	[1.114]		ND	(5.8)	[1.163]		ND	(5.7)	[1.133]		ND	(5.8)	[1.168]	
Chloromethane	ND	(11)	[1.114]		ND	(12)	[1.163]		ND	(11)	[1.133]		ND	(12)	[1.168]	
Decanal	7.8	()	[1.114]		NA				NA				NA			
Decanal B	NA				NA				NA				14	()	[1.168]	
Dibromochloromethane	ND	(5.6)	[1.114]		ND	(5.8)	[1.163]		ND	(5.7)	[1.133]		ND	(5.8)	[1.168]	
Dibromomethane	ND	(5.6)	[1.114]		ND	(5.8)	[1.163]		ND	(5.7)	[1.133]		ND	(5.8)	[1.168]	
Dichlorodifluoromethane	ND	(22)	[1.114]		ND	(23)	[1.163]		ND	(23)	[1.133]		ND	(23)	[1.168]	
Ethyl acetate	NA				40	()	[1.163]		42	()	[1.133]		NA			
Ethyl benzene	ND	(5.6)	[1.114]		ND	(5.8)	[1.163]		ND	(5.7)	[1.133]		ND	(5.8)	[1.168]	
Ethyl methacrylate	ND	(17)	[1.114]		ND	(17)	[1.163]		ND	(17)	[1.133]		ND	(18)	[1.168]	
Iodomethane	ND	(5.6)	[1.114]		ND	(5.8)	[1.163]		ND	(5.7)	[1.133]		ND	(5.8)	[1.168]	
Methyl ethyl ketone	ND	(110)	[1.114]		ND	(120)	[1.163]		ND	(110)	[1.133]		ND	(120)	[1.168]	
Methylene chloride	ND	(5.6)	[1.114]		ND	(5.8)	[1.163]		ND	(5.7)	[1.133]		2.9	J (5.8)	[1.168]	
Nonanal	7.8	()	[1.114]		NA				NA				9.3	()	[1.168]	

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TABLE 81 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 3A CAN97-3A-I 4 - 6			NONE 3A CAN97-3A-S 0 - 2			NONE 3B CAN97-3B-06 8 - 10			NONE 3B CAN97-3B-I 4 - 6		
Styrene	ND	(5.6)	[1.114]	ND	(5.8)	[1.163]	ND	(5.7)	[1.133]	ND	(5.8)	[1.168]
Tetrachloroethene	ND	(5.6)	[1.114]	ND	(5.8)	[1.163]	ND	(5.7)	[1.133]	ND	(5.8)	[1.168]
Toluene	ND	(5.6)	[1.114]	1.2 J	(5.8)	[1.163]	ND	(5.7)	[1.133]	0.61 J	(5.8)	[1.168]
Tribromomethane(Bromoform)	ND	(5.6)	[1.114]	ND	(5.8)	[1.163]	ND	(5.7)	[1.133]	ND	(5.8)	[1.168]
Trichloroethene	ND	(5.6)	[1.114]	ND	(5.8)	[1.163]	ND	(5.7)	[1.133]	ND	(5.8)	[1.168]
Trichlorofluoromethane	ND	(11)	[1.114]	ND	(12)	[1.163]	ND	(11)	[1.133]	ND	(12)	[1.168]
Unknown	5.6	()	[1.114]	7.3	()	[1.163]	66	()	[1.133]	5.8	()	[1.168]
Vinyl acetate	ND	(5.6)	[1.114]	ND	(5.8)	[1.163]	ND	(5.7)	[1.133]	ND	(5.8)	[1.168]
Vinyl chloride	ND	(11)	[1.114]	ND	(12)	[1.163]	ND	(11)	[1.133]	ND	(12)	[1.168]
Xylenes	ND	(5.6)	[1.114]	ND	(5.8)	[1.163]	ND	(5.7)	[1.133]	ND	(5.8)	[1.168]
cis-1,3-Dichloropropene	ND	(5.6)	[1.114]	ND	(5.8)	[1.163]	ND	(5.7)	[1.133]	ND	(5.8)	[1.168]
trans-1,2-Dichloroethene	ND	(5.6)	[1.114]	ND	(5.8)	[1.163]	ND	(5.7)	[1.133]	ND	(5.8)	[1.168]
trans-1,3-Dichloropropene	ND	(5.6)	[1.114]	ND	(5.8)	[1.163]	ND	(5.7)	[1.133]	ND	(5.8)	[1.168]
trans-1,4-Dichloro-2-butene	ND	(11)	[1.114]	ND	(12)	[1.163]	ND	(11)	[1.133]	ND	(12)	[1.168]
SW8270 - Semivolatile Organics (ug/kg)												
1,2,4,5-Tetrachlorobenzene	ND	(370)	[.038]	ND	(12000)	[1.163]	ND	(380)	[.038]	ND	(390)	[.039]
1,2,4-Trichlorobenzene	ND	(370)	[.038]	ND	(12000)	[1.163]	ND	(380)	[.038]	ND	(390)	[.039]
1,2-Dichlorobenzene	ND	(370)	[.038]	ND	(12000)	[1.163]	ND	(380)	[.038]	ND	(390)	[.039]
1,2-Diphenylhydrazine	ND	(370)	[.038]	ND	(12000)	[1.163]	ND	(380)	[.038]	ND	(390)	[.039]
1,3-Dichlorobenzene	ND	(370)	[.038]	ND	(12000)	[1.163]	ND	(380)	[.038]	ND	(390)	[.039]
1,4-Dichlorobenzene	ND	(370)	[.038]	ND	(12000)	[1.163]	ND	(380)	[.038]	ND	(390)	[.039]
1-Chloronaphthalene	ND	(370)	[.038]	ND	(12000)	[1.163]	ND	(380)	[.038]	ND	(390)	[.039]
1-Naphthylamine	ND	(370)	[.038]	ND	(12000)	[1.163]	ND	(380)	[.038]	ND	(390)	[.039]
2,3,4,6-Tetrachlorophenol	ND	(750)	[.038]	ND	(23000)	[1.163]	ND	(750)	[.038]	ND	(780)	[.039]
2,4,5-Trichlorophenol	ND	(370)	[.038]	ND	(12000)	[1.163]	ND	(380)	[.038]	ND	(390)	[.039]
2,4,6-Trichlorophenol	ND	(370)	[.038]	ND	(12000)	[1.163]	ND	(380)	[.038]	ND	(390)	[.039]
2,4-Dichlorophenol	ND	(370)	[.038]	ND	(12000)	[1.163]	ND	(380)	[.038]	ND	(390)	[.039]
2,4-Dimethylphenol	ND	(370)	[.038]	ND	(12000)	[1.163]	ND	(380)	[.038]	ND	(390)	[.039]
2,4-Dinitrophenol	ND	(1900)	[.038]	ND	(58000)	[1.163]	ND	(1900)	[.038]	ND	(1900)	[.039]

Compiled: 8 Feb 1994 () = Reporting Limit [] = Factor = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 3A CAN97-3A-I 4 - 6			NONE 3A CAN97-3A-S 0 - 2			NONE 3B CAN97-3B-06 8 - 10			NONE 3B CAN97-3B-I 4 - 6		
2,4-Dinitrotoluene	ND	(370)	[.038]	ND	(12000)	[1.163]	ND	(380)	[.038]	ND	(390)	[.039]
2,6-Dichlorophenol	ND	(370)	[.038]	ND	(12000)	[1.163]	ND	(380)	[.038]	ND	(390)	[.039]
2,6-Dinitrotoluene	ND	(370)	[.038]	ND	(12000)	[1.163]	ND	(380)	[.038]	ND	(390)	[.039]
2-Chloronaphthalene	ND	(370)	[.038]	ND	(12000)	[1.163]	ND	(380)	[.038]	ND	(390)	[.039]
2-Chlorophenol	ND	(370)	[.038]	ND	(12000)	[1.163]	ND	(380)	[.038]	ND	(390)	[.039]
2-Methylnaphthalene	ND	(370)	[.038]	ND	(12000)	[1.163]	ND	(380)	[.038]	ND	(390)	[.039]
2-Methylphenol(o-cresol)	ND	(370)	[.038]	ND	(12000)	[1.163]	ND	(380)	[.038]	ND	(390)	[.039]
2-Naphthylamine	ND	(370)	[.038]	ND	(12000)	[1.163]	ND	(380)	[.038]	ND	(390)	[.039]
2-Nitroaniline	ND	(1900)	[.038]	ND	(58000)	[1.163]	ND	(1900)	[.038]	ND	(1900)	[.039]
2-Nitrophenol	ND	(370)	[.038]	ND	(12000)	[1.163]	ND	(380)	[.038]	ND	(390)	[.039]
2-Picoline	ND	(370)	[.038]	ND	(12000)	[1.163]	ND	(380)	[.038]	ND	(390)	[.039]
3,3'-Dichlorobenzidine	ND	(750)	[.038]	ND	(23000)	[1.163]	ND	(750)	[.038]	ND	(780)	[.039]
3-Methylcholanthrene	ND	(370)	[.038]	ND	(12000)	[1.163]	ND	(380)	[.038]	ND	(390)	[.039]
3-Nitroaniline	ND	(1900)	[.038]	ND	(58000)	[1.163]	ND	(1900)	[.038]	ND	(1900)	[.039]
4,6-Dinitro-2-methylphenol	ND	(1900)	[.038]	ND	(58000)	[1.163]	ND	(1900)	[.038]	ND	(1900)	[.039]
4-Aminobiphenyl	ND	(370)	[.038]	ND	(12000)	[1.163]	ND	(380)	[.038]	ND	(390)	[.039]
4-Bromophenyl phenyl ether	ND	(370)	[.038]	ND	(12000)	[1.163]	ND	(380)	[.038]	ND	(390)	[.039]
4-Chloro-3-methylphenol	ND	(370)	[.038]	ND	(12000)	[1.163]	ND	(380)	[.038]	ND	(390)	[.039]
4-Chlorophenyl phenyl ether	ND	(370)	[.038]	ND	(12000)	[1.163]	ND	(380)	[.038]	ND	(390)	[.039]
4-Methylphenol(p-cresol)	ND	(370)	[.038]	ND	(12000)	[1.163]	ND	(380)	[.038]	ND	(390)	[.039]
4-Nitroaniline	ND	(1900)	[.038]	ND	(58000)	[1.163]	ND	(1900)	[.038]	ND	(1900)	[.039]
4-Nitrophenol	ND	(1900)	[.038]	ND	(58000)	[1.163]	ND	(1900)	[.038]	ND	(1900)	[.039]
7,12-Dimethylbenz(a)anthracene	ND	(940)	[.038]	ND	(29000)	[1.163]	ND	(940)	[.038]	ND	(970)	[.039]
Acenaphthene	ND	(370)	[.038]	ND	(12000)	[1.163]	ND	(380)	[.038]	ND	(390)	[.039]
Acenaphthylene	ND	(370)	[.038]	ND	(12000)	[1.163]	ND	(380)	[.038]	ND	(390)	[.039]
Acetophenone	ND	(370)	[.038]	ND	(12000)	[1.163]	ND	(380)	[.038]	ND	(390)	[.039]
Aniline	ND	(370)	[.038]	ND	(12000)	[1.163]	ND	(380)	[.038]	ND	(390)	[.039]
Anthracene	ND	(370)	[.038]	ND	(12000)	[1.163]	ND	(380)	[.038]	ND	(390)	[.039]
Benzidine	ND	(370)	[.038]	ND	(12000)	[1.163]	ND	(380)	[.038]	ND	(390)	[.039]

Compiled: 8 February 1994 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID	LOCATION ID	SAMPLE ID	BEG. DEPTH - END DEPTH (FT.)												
	NONE	3A	CAN97-3A-I	4 - 6			NONE	3A	CAN97-3A-S	0 - 2			NONE	3B	CAN97-3B-06	8 - 10			NONE	3B	CAN97-3B-I	4 - 6		
Benzo(a)anthracene	ND	(370)	[	.038]	ND	(12000)	[	1.163]	ND	(380)	[	.038]	ND	(390)	[	.039]
Benzo(a)pyrene	ND	(370)	[	.038]	ND	(12000)	[	1.163]	ND	(380)	[	.038]	ND	(390)	[	.039]
Benzo(b)fluoranthene	ND	(370)	[	.038]	ND	(12000)	[	1.163]	ND	(380)	[	.038]	ND	(390)	[	.039]
Benzo(g,h,i)perylene	ND	(370)	[	.038]	ND	(12000)	[	1.163]	ND	(380)	[	.038]	ND	(390)	[	.039]
Benzo(k)fluoranthene	ND	(370)	[	.038]	ND	(12000)	[	1.163]	ND	(380)	[	.038]	ND	(390)	[	.039]
Benzoic acid	ND	(1900)	[	.038]	ND	(58000)	[	1.163]	ND	(1900)	[	.038]	ND	(1900)	[	.039]
Benzyl alcohol	ND	(370)	[	.038]	ND	(12000)	[	1.163]	ND	(380)	[	.038]	ND	(390)	[	.039]
Butylbenzylphthalate	ND	(370)	[	.038]	ND	(12000)	[	1.163]	ND	(380)	[	.038]	ND	(390)	[	.039]
Chrysene	ND	(370)	[	.038]	ND	(12000)	[	1.163]	ND	(380)	[	.038]	ND	(390)	[	.039]
Cyclohexenol B	NA				5800	(0)	[	1.163]	NA				NA			
Cyclohexenone	NA				5800	(0)	[	1.163]	NA				NA			
Di-n-octylphthalate	ND	(370)	[	.038]	ND	(12000)	[	1.163]	ND	(380)	[	.038]	ND	(390)	[	.039]
Dibenz(a,h)anthracene	ND	(370)	[	.038]	ND	(12000)	[	1.163]	ND	(380)	[	.038]	ND	(390)	[	.039]
Dibenz(a,j)acridine	ND	(370)	[	.038]	ND	(12000)	[	1.163]	ND	(380)	[	.038]	ND	(390)	[	.039]
Dibenzofuran	ND	(370)	[	.038]	ND	(12000)	[	1.163]	ND	(380)	[	.038]	ND	(390)	[	.039]
Dibutylphthalate	ND	(370)	[	.038]	ND	(12000)	[	1.163]	ND	(380)	[	.038]	ND	(390)	[	.039]
Diethylphthalate	ND	(370)	[	.038]	ND	(12000)	[	1.163]	ND	(380)	[	.038]	ND	(390)	[	.039]
Dimethylphenethylamine	ND	(370)	[	.038]	ND	(12000)	[	1.163]	ND	(380)	[	.038]	ND	(390)	[	.039]
Dimethylphthalate	ND	(370)	[	.038]	ND	(12000)	[	1.163]	ND	(380)	[	.038]	ND	(390)	[	.039]
Diphenylamine	ND	(370)	[	.038]	ND	(12000)	[	1.163]	ND	(380)	[	.038]	ND	(390)	[	.039]
Ethyl methanesulfonate	ND	(370)	[	.038]	ND	(12000)	[	1.163]	ND	(380)	[	.038]	ND	(390)	[	.039]
Fluoranthene	ND	(370)	[	.038]	ND	(12000)	[	1.163]	ND	(380)	[	.038]	ND	(390)	[	.039]
Fluorene	ND	(370)	[	.038]	ND	(12000)	[	1.163]	ND	(380)	[	.038]	ND	(390)	[	.039]
Hexachlorobenzene	ND	(370)	[	.038]	ND	(12000)	[	1.163]	ND	(380)	[	.038]	ND	(390)	[	.039]
Hexachlorobutadiene	ND	(370)	[	.038]	ND	(12000)	[	1.163]	ND	(380)	[	.038]	ND	(390)	[	.039]
Hexachlorocyclopentadiene	ND	(370)	[	.038]	ND	(12000)	[	1.163]	ND	(380)	[	.038]	ND	(390)	[	.039]
Hexachloroethane	ND	(370)	[	.038]	ND	(12000)	[	1.163]	ND	(380)	[	.038]	ND	(390)	[	.039]
Indeno(1,2,3-cd)pyrene	ND	(370)	[	.038]	ND	(12000)	[	1.163]	ND	(380)	[	.038]	ND	(390)	[	.039]
Isophorone	ND	(370)	[	.038]	ND	(12000)	[	1.163]	ND	(380)	[	.038]	ND	(390)	[	.039]

Compiled: 8 Fe' -y 1994 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 3A CAN97-3A-I 4 - 6			NONE 3A CAN97-3A-S 0 - 2			NONE 3B CAN97-3B-06 8 - 10			NONE 3B CAN97-3B-I 4 - 6		
Methyl methanesulfonate	ND	(370)	[.038]	ND	(12000)	[1.163]	ND	(380)	[.038]	ND	(390)	[.039]
N-Nitroso-di-n-butylamine	ND	(370)	[.038]	ND	(12000)	[1.163]	ND	(380)	[.038]	ND	(390)	[.039]
N-Nitrosodimethylamine	ND	(370)	[.038]	ND	(12000)	[1.163]	ND	(380)	[.038]	ND	(390)	[.039]
N-Nitrosodiphenylamine	ND	(370)	[.038]	ND	(12000)	[1.163]	ND	(380)	[.038]	ND	(390)	[.039]
N-Nitrosodipropylamine	ND	(370)	[.038]	ND	(12000)	[1.163]	ND	(380)	[.038]	ND	(390)	[.039]
N-Nitrosopiperidine	ND	(370)	[.038]	ND	(12000)	[1.163]	ND	(380)	[.038]	ND	(390)	[.039]
Naphthalene	ND	(370)	[.038]	ND	(12000)	[1.163]	ND	(380)	[.038]	ND	(390)	[.039]
Nitrobenzene	ND	(370)	[.038]	ND	(12000)	[1.163]	ND	(380)	[.038]	ND	(390)	[.039]
Pentachlorobenzene	ND	(370)	[.038]	ND	(12000)	[1.163]	ND	(380)	[.038]	ND	(390)	[.039]
Pentachloronitrobenzene	ND	(370)	[.038]	ND	(12000)	[1.163]	ND	(380)	[.038]	ND	(390)	[.039]
Pentachlorophenol	ND	(1900)	[.038]	ND	(58000)	[1.163]	ND	(1900)	[.038]	ND	(1900)	[.039]
Phenacetin	ND	(370)	[.038]	ND	(12000)	[1.163]	ND	(380)	[.038]	ND	(390)	[.039]
Phenanthrene	ND	(370)	[.038]	ND	(12000)	[1.163]	ND	(380)	[.038]	ND	(390)	[.039]
Phenol	ND	(370)	[.038]	ND	(12000)	[1.163]	ND	(380)	[.038]	ND	(390)	[.039]
Pronamide	ND	(370)	[.038]	ND	(12000)	[1.163]	ND	(380)	[.038]	ND	(390)	[.039]
Pyrene	ND	(370)	[.038]	ND	(12000)	[1.163]	ND	(380)	[.038]	ND	(390)	[.039]
Pyridine	ND	(370)	[.038]	ND	(12000)	[1.163]	ND	(380)	[.038]	ND	(390)	[.039]
Trichloropropene(s)	NA			NA			NA			190	(0)	[.039]
Unknown	190	(0)	[.038]	5800	(0)	[1.163]	560	(0)	[.038]	230	(0)	[.039]
Unknown cyclic ether	NA			NA			640	(0)	[.038]	310	(0)	[.039]
Unknown cyclic ether B	940	(0)	[.038]	9300	(0)	[1.163]	NA			NA		
Unknown ester	NA			8100	(0)	[1.163]	NA			NA		
bis(2-Chloroethoxy)methane	ND	(370)	[.038]	ND	(12000)	[1.163]	ND	(380)	[.038]	ND	(390)	[.039]
bis(2-Chloroethyl)ether	ND	(370)	[.038]	ND	(12000)	[1.163]	ND	(380)	[.038]	ND	(390)	[.039]
bis(2-Chloroisopropyl)ether	ND	(370)	[.038]	ND	(12000)	[1.163]	ND	(380)	[.038]	ND	(390)	[.039]
bis(2-Ethylhexyl)phthalate	ND	(370)	[.038]	6800 JB	(12000)	[1.163]	ND	(380)	[.038]	ND	(390)	[.039]
p-Chloroaniline	ND	(370)	[.038]	ND	(12000)	[1.163]	ND	(380)	[.038]	ND	(390)	[.039]
p-Dimethylaminoazobenzene	ND	(370)	[.038]	ND	(12000)	[1.163]	ND	(380)	[.038]	ND	(390)	[.039]

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TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 3B CAN97-3B-S 0 - 2			NONE 3C CAN97-3C-01 12 - 14			NONE 3C CAN97-3C-02 18 - 20			NONE 3C CAN97-3C-03 23 - 25		
EPA 418.1 - Total Recoverable Petroleum Hydrocarbons (mg/kg)												
Hydrocarbons	34 @	(29)	[5.741]	69 @	(28)	[5.504]	ND	(28)	[5.587]	4.4 @	(27)	[5.462]
SW8015 - Total Petroleum Hydrocarbons (ug/kg)												
Benzene (2)	7.6 J	(34)	[112.000]	ND	(32)	[106.000]	NA			NA		
Diesel (2)	6900 GB@	(5700)	[114.943]	44000 GB	(5100)	[101.010]	NA			NA		
Ethylbenzene (2)	19 J	(34)	[112.000]	ND	(32)	[106.000]	NA			NA		
Gasoline (2)	ND	(5600)	[112.000]	ND	(5300)	[106.000]	NA			NA		
Jet fuel (2)	ND	(11000)	[114.943]	ND	(10000)	[101.010]	NA			NA		
Kerosene (2)	ND	(11000)	[114.943]	ND	(10000)	[101.010]	NA			NA		
Toluene (2)	21 J	(34)	[112.000]	ND	(32)	[106.000]	NA			NA		
Xylenes (total) (2)	51 JC	(56)	[112.000]	ND	(53)	[106.000]	NA			NA		
SW8080 - Organochlorine Pesticides and PCBs (ug/kg)												
4,4'-DDD	0.59 @	(0.38)	[38.462]	3 @	(1.8)	[183.554]	ND	(0.37)	[37.453]	ND	(0.37)	[36.550]
4,4'-DDE	ND	(0.38)	[38.462]	ND	(1.8)	[183.554]	ND	(0.37)	[37.453]	ND	(0.37)	[36.550]
4,4'-DDT	1.1 G@	(0.77)	[38.462]	ND	(3.7)	[183.554]	ND	(0.75)	[37.453]	ND	(0.73)	[36.550]
Aldrin	ND	(0.38)	[38.462]	3 @	(1.8)	[183.554]	ND	(0.37)	[37.453]	ND	(0.37)	[36.550]
Chlordane	ND	(1.9)	[38.462]	ND	(9.2)	[183.554]	ND	(1.9)	[37.453]	ND	(1.8)	[36.550]
Dieldrin	ND	(0.38)	[38.462]	9.2 G	(1.8)	[183.554]	ND	(0.37)	[37.453]	ND	(0.37)	[36.550]
Endosulfan I	ND	(0.38)	[38.462]	ND	(1.8)	[183.554]	ND	(0.37)	[37.453]	ND	(0.37)	[36.550]
Endosulfan II	ND	(1.2)	[38.462]	1.7 J	(5.5)	[183.554]	ND	(1.1)	[37.453]	ND	(1.1)	[36.550]
Endosulfan Sulfate	ND	(1.9)	[38.462]	ND	(9.2)	[183.554]	ND	(1.9)	[37.453]	ND	(1.8)	[36.550]
Endrin	ND	(0.38)	[38.462]	1.9 G@	(1.8)	[183.554]	ND	(0.37)	[37.453]	ND	(0.37)	[36.550]
Endrin Aldehyde	ND	(0.77)	[38.462]	ND	(3.7)	[183.554]	ND	(0.75)	[37.453]	ND	(0.73)	[36.550]
Endrin Ketone	0.068 J	(1.9)	[38.462]	ND	(9.2)	[183.554]	ND	(1.9)	[37.453]	ND	(1.8)	[36.550]
Heptachlor	ND	(0.38)	[38.462]	5.8 G@	(1.8)	[183.554]	ND	(0.37)	[37.453]	ND	(0.37)	[36.550]
Heptachlor epoxide	0.45 G@	(0.38)	[38.462]	2.5 G@	(1.8)	[183.554]	0.21 J	(0.37)	[37.453]	ND	(0.37)	[36.550]
Methoxychlor	ND	(1.9)	[38.462]	ND	(9.2)	[183.554]	ND	(1.9)	[37.453]	ND	(1.8)	[36.550]
PCB-1016	ND	(3.8)	[38.462]	ND	(18)	[183.554]	ND	(3.7)	[37.453]	ND	(3.7)	[36.550]
PCB-1221	ND	(7.7)	[38.462]	ND	(37)	[183.554]	ND	(7.5)	[37.453]	ND	(7.3)	[36.550]

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TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 3B CAN97-3B-5 0 - 2			NONE 3C CAN97-3C-01 12 - 14			NONE 3C CAN97-3C-02 18 - 20			NONE 3C CAN97-3C-03 23 - 25		
PCB-1232	ND	(7.7)	[38.462]	ND	(37)	[183.554]	ND	(7.5)	[37.453]	ND	(7.3)	[36.550]
PCB-1242	ND	(3.8)	[38.462]	ND	(18)	[183.554]	ND	(3.7)	[37.453]	ND	(3.7)	[36.550]
PCB-1248	ND	(3.8)	[38.462]	ND	(18)	[183.554]	ND	(3.7)	[37.453]	ND	(3.7)	[36.550]
PCB-1254	ND	(7.7)	[38.462]	ND	(37)	[183.554]	ND	(7.5)	[37.453]	ND	(7.3)	[36.550]
PCB-1260	ND	(7.7)	[38.462]	ND	(37)	[183.554]	ND	(7.5)	[37.453]	ND	(7.3)	[36.550]
Toxaphene	ND	(19)	[38.462]	ND	(92)	[183.554]	ND	(19)	[37.453]	ND	(18)	[36.550]
alpha-BHC	ND	(0.38)	[38.462]	2.4 @	(1.8)	[183.554]	ND	(0.37)	[37.453]	ND	(0.37)	[36.550]
beta-BHC	ND	(0.38)	[38.462]	ND	(1.8)	[183.554]	4.3 G	(0.37)	[37.453]	ND	(0.37)	[36.550]
delta-BHC	ND	(0.38)	[38.462]	ND	(1.8)	[183.554]	ND	(0.37)	[37.453]	ND	(0.37)	[36.550]
gamma-BHC	ND	(0.38)	[38.462]	7.5 G@	(1.8)	[183.554]	ND	(0.37)	[37.453]	ND	(0.37)	[36.550]
SW8150 - Chlorinated Herbicides (ug/kg)												
2,4,5-T	ND	(7.7)	[38.300]	ND	(7.3)	[36.711]	NA			NA		
2,4,5-TP (Silvex)	ND	(6.5)	[38.300]	22 G@	(6.2)	[36.711]	NA			NA		
2,4-D	ND	(46)	[38.300]	ND	(44)	[36.711]	NA			NA		
2,4-DB	ND	(35)	[38.300]	ND	(33)	[36.711]	NA			NA		
Dalapon	ND	(220)	[38.300]	ND	(210)	[36.711]	NA			NA		
Dicamba	ND	(10)	[38.300]	ND	(9.9)	[36.711]	NA			NA		
Dichloroprop	ND	(25)	[38.300]	49 G@	(24)	[36.711]	NA			NA		
Dinoseb	ND	(5.7)	[38.300]	ND	(5.5)	[36.711]	NA			NA		
MCPA	ND	(9500)	[38.300]	ND	(9100)	[36.711]	NA			NA		
MCPP	ND	(7400)	[38.300]	9300 G@	(7000)	[36.711]	NA			NA		
SW8240 - Volatile Organics (ug/kg)												
1,1,1-Trichloroethane	ND	(5.8)	[1.155]	ND	(5.5)	[1.101]	ND	(5.6)	[1.119]	ND	(5.5)	[1.096]
1,1,2,2-Tetrachloroethane	ND	(5.8)	[1.155]	ND	(5.5)	[1.101]	ND	(5.6)	[1.119]	ND	(5.5)	[1.096]
1,1,2-Trichloroethane	ND	(5.8)	[1.155]	ND	(5.5)	[1.101]	ND	(5.6)	[1.119]	ND	(5.5)	[1.096]
1,1-Dichloroethane	ND	(5.8)	[1.155]	ND	(5.5)	[1.101]	ND	(5.6)	[1.119]	ND	(5.5)	[1.096]
1,1-Dichloroethene	ND	(5.8)	[1.155]	ND	(5.5)	[1.101]	ND	(5.6)	[1.119]	ND	(5.5)	[1.096]
1,2,3-Trichloropropane	ND	(5.8)	[1.155]	ND	(5.5)	[1.101]	ND	(5.6)	[1.119]	ND	(5.5)	[1.096]
1,2-Dichloroethane	ND	(5.8)	[1.155]	ND	(5.5)	[1.101]	ND	(5.6)	[1.119]	ND	(5.5)	[1.096]

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TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 3B CAN97-3B-S 0 - 2			NONE 3C CAN97-3C-01 12 - 14			NONE 3C CAN97-3C-02 18 - 20			NONE 3C CAN97-3C-03 23 - 25		
1,2-Dichloropropane	ND	(5.8)	[1.155]	ND	(5.5)	[1.101]	ND	(5.6)	[1.119]	ND	(5.5)	[1.096]
2-Chloroethyl vinyl ether	ND	(12)	[1.155]	ND	(11)	[1.101]	ND	(11)	[1.119]	ND	(11)	[1.096]
2-Hexanone	ND	(58)	[1.155]	ND	(55)	[1.101]	ND	(56)	[1.119]	ND	(55)	[1.096]
4-Methyl-2-pentanone(MIBK)	ND	(58)	[1.155]	ND	(55)	[1.101]	ND	(56)	[1.119]	ND	(55)	[1.096]
Acetone	ND	(120)	[1.155]	14 J	(110)	[1.101]	ND	(110)	[1.119]	ND	(110)	[1.096]
Acrolein	ND	(87)	[1.155]	ND	(83)	[1.101]	ND	(84)	[1.119]	ND	(82)	[1.096]
Acrylonitrile	ND	(58)	[1.155]	ND	(55)	[1.101]	ND	(56)	[1.119]	ND	(55)	[1.096]
Benzene	ND	(5.8)	[1.155]	ND	(5.5)	[1.101]	ND	(5.6)	[1.119]	ND	(5.5)	[1.096]
Bromodichloromethane	ND	(5.8)	[1.155]	ND	(5.5)	[1.101]	ND	(5.6)	[1.119]	ND	(5.5)	[1.096]
Bromomethane	ND	(12)	[1.155]	ND	(11)	[1.101]	ND	(11)	[1.119]	ND	(11)	[1.096]
Carbon disulfide	ND	(5.8)	[1.155]	ND	(5.5)	[1.101]	ND	(5.6)	[1.119]	ND	(5.5)	[1.096]
Carbon tetrachloride	ND	(5.8)	[1.155]	ND	(5.5)	[1.101]	ND	(5.6)	[1.119]	ND	(5.5)	[1.096]
Chlorobenzene	ND	(5.8)	[1.155]	ND	(5.5)	[1.101]	ND	(5.6)	[1.119]	ND	(5.5)	[1.096]
Chloroethane	ND	(12)	[1.155]	ND	(11)	[1.101]	ND	(11)	[1.119]	ND	(11)	[1.096]
Chloroform	ND	(5.8)	[1.155]	ND	(5.5)	[1.101]	ND	(5.6)	[1.119]	ND	(5.5)	[1.096]
Chloromethane	ND	(12)	[1.155]	ND	(11)	[1.101]	ND	(11)	[1.119]	ND	(11)	[1.096]
Decanal	NA			NA			NA			8.8	()	[1.096]
Dibromochloromethane	ND	(5.8)	[1.155]	ND	(5.5)	[1.101]	ND	(5.6)	[1.119]	ND	(5.5)	[1.096]
Dibromomethane	ND	(5.8)	[1.155]	ND	(5.5)	[1.101]	ND	(5.6)	[1.119]	ND	(5.5)	[1.096]
Dichlorodifluoromethane	ND	(23)	[1.155]	ND	(22)	[1.101]	ND	(22)	[1.119]	ND	(22)	[1.096]
Ethyl benzene	ND	(5.8)	[1.155]	ND	(5.5)	[1.101]	ND	(5.6)	[1.119]	ND	(5.5)	[1.096]
Ethyl methacrylate	ND	(17)	[1.155]	ND	(17)	[1.101]	ND	(17)	[1.119]	ND	(16)	[1.096]
Iodomethane	ND	(5.8)	[1.155]	ND	(5.5)	[1.101]	ND	(5.6)	[1.119]	ND	(5.5)	[1.096]
Methyl ethyl ketone	ND	(120)	[1.155]	ND	(110)	[1.101]	ND	(110)	[1.119]	ND	(110)	[1.096]
Methylene chloride	4.7 J	(5.8)	[1.155]	35	(5.5)	[1.101]	ND	(5.6)	[1.119]	ND	(5.5)	[1.096]
Nonanal	NA			NA			NA			22	()	[1.096]
Styrene	ND	(5.8)	[1.155]	ND	(5.5)	[1.101]	ND	(5.6)	[1.119]	ND	(5.5)	[1.096]
Tetrachloroethene	ND	(5.8)	[1.155]	ND	(5.5)	[1.101]	ND	(5.6)	[1.119]	ND	(5.5)	[1.096]
Toluene	0.4 J	(5.8)	[1.155]	1.9 J	(5.5)	[1.101]	ND	(5.6)	[1.119]	ND	(5.5)	[1.096]

Compiled: 8 Feb / 1994 () = Reporting Limit [] = Factor = Not Detected NA = Not Applicable

TABLE B1

RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID	LOCATION ID	SAMPLE ID	BEG. DEPTH - END DEPTH (FT.)											
	NONE	3B	CAN97-3B-S	0 - 2			NONE	3C	CAN97-3C-01	12 - 14			NONE	3C	CAN97-3C-02	18 - 20			NONE	3C	CAN97-3C-03	23 - 25		
Tribromomethane(Bromoform)	ND	(5.8)	[1.155]				ND	(5.5)	[1.101]				ND	(5.6)	[1.119]				ND	(5.5)	[1.096]			
Trichloroethene	ND	(5.8)	[1.155]				ND	(5.5)	[1.101]				ND	(5.6)	[1.119]				ND	(5.5)	[1.096]			
Trichlorofluoromethane	ND	(12)	[1.155]				ND	(11)	[1.101]				ND	(11)	[1.119]				ND	(11)	[1.096]			
Unknown	18	()	[1.155]				NA						NA						NA					
Vinyl acetate	ND	(5.8)	[1.155]				ND	(5.5)	[1.101]				ND	(5.6)	[1.119]				ND	(5.5)	[1.096]			
Vinyl chloride	ND	(12)	[1.155]				ND	(11)	[1.101]				ND	(11)	[1.119]				ND	(11)	[1.096]			
Xylenes	ND	(5.8)	[1.155]				ND	(5.5)	[1.101]				ND	(5.6)	[1.119]				ND	(5.5)	[1.096]			
cis-1,3-Dichloropropene	ND	(5.8)	[1.155]				ND	(5.5)	[1.101]				ND	(5.6)	[1.119]				ND	(5.5)	[1.096]			
trans-1,2-Dichloroethene	ND	(5.8)	[1.155]				ND	(5.5)	[1.101]				ND	(5.6)	[1.119]				ND	(5.5)	[1.096]			
trans-1,3-Dichloropropene	ND	(5.8)	[1.155]				ND	(5.5)	[1.101]				ND	(5.6)	[1.119]				ND	(5.5)	[1.096]			
trans-1,4-Dichloro-2-butene	ND	(12)	[1.155]				ND	(11)	[1.101]				ND	(11)	[1.119]				ND	(11)	[1.096]			
SW8270 - Semivolatile Organics (ug/kg)																								
1,2,4,5-Tetrachlorobenzene	ND	(380)	[.038]				ND	(370)	[.037]				ND	(370)	[.037]				ND	(370)	[.037]			
1,2,4-Trichlorobenzene	ND	(380)	[.038]				ND	(370)	[.037]				ND	(370)	[.037]				ND	(370)	[.037]			
1,2-Dichlorobenzene	ND	(380)	[.038]				ND	(370)	[.037]				ND	(370)	[.037]				ND	(370)	[.037]			
1,2-Diphenylhydrazine	ND	(380)	[.038]				ND	(370)	[.037]				ND	(370)	[.037]				ND	(370)	[.037]			
1,3-Dichlorobenzene	ND	(380)	[.038]				ND	(370)	[.037]				ND	(370)	[.037]				ND	(370)	[.037]			
1,4-Dichlorobenzene	ND	(380)	[.038]				ND	(370)	[.037]				ND	(370)	[.037]				ND	(370)	[.037]			
1-Chloronaphthalene	ND	(380)	[.038]				ND	(370)	[.037]				ND	(370)	[.037]				ND	(370)	[.037]			
1-Naphthylamine	ND	(380)	[.038]				ND	(370)	[.037]				ND	(370)	[.037]				ND	(370)	[.037]			
2,3,4,6-Tetrachlorophenol	ND	(770)	[.038]				ND	(730)	[.037]				ND	(750)	[.037]				ND	(730)	[.037]			
2,4,5-Trichlorophenol	ND	(380)	[.038]				ND	(370)	[.037]				ND	(370)	[.037]				ND	(370)	[.037]			
2,4,6-Trichlorophenol	ND	(380)	[.038]				ND	(370)	[.037]				ND	(370)	[.037]				ND	(370)	[.037]			
2,4-Dichlorophenol	ND	(380)	[.038]				ND	(370)	[.037]				ND	(370)	[.037]				ND	(370)	[.037]			
2,4-Dimethylphenol	ND	(380)	[.038]				ND	(370)	[.037]				ND	(370)	[.037]				ND	(370)	[.037]			
2,4-Dinitrophenol	ND	(1900)	[.038]				ND	(1800)	[.037]				ND	(1900)	[.037]				ND	(1800)	[.037]			
2,4-Dinitrotoluene	ND	(380)	[.038]				ND	(370)	[.037]				ND	(370)	[.037]				ND	(370)	[.037]			
2,6-Dichlorophenol	ND	(380)	[.038]				ND	(370)	[.037]				ND	(370)	[.037]				ND	(370)	[.037]			
2,6-Dinitrotoluene	ND	(380)	[.038]				ND	(370)	[.037]				ND	(370)	[.037]				ND	(370)	[.037]			

Compiled: 8 February 1994

() = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID	LOCATION ID	SAMPLE ID	BEG. DEPTH - END DEPTH (FT.)												
	NONE	3B	CAN97-3B-5	0 - 2			NONE	3C	CAN97-3C-01	12 - 14			NONE	3C	CAN97-3C-02	18 - 20			NONE	3C	CAN97-3C-03	23 - 25		
2-Chloronaphthalene	ND	(380)	[.038]		ND	(370)	[.037]		ND	(370)	[.037]		ND	(370)	[.037]		ND	(370)	[.037]
2-Chlorophenol	ND	(380)	[.038]		ND	(370)	[.037]		ND	(370)	[.037]		ND	(370)	[.037]		ND	(370)	[.037]
2-Methylnaphthalene	ND	(380)	[.038]		68 J	(370)	[.037]		ND	(370)	[.037]		ND	(370)	[.037]		ND	(370)	[.037]
2-Methylphenol(o-cresol)	ND	(380)	[.038]		ND	(370)	[.037]		ND	(370)	[.037]		ND	(370)	[.037]		ND	(370)	[.037]
2-Naphthylamine	ND	(380)	[.038]		ND	(370)	[.037]		ND	(370)	[.037]		ND	(370)	[.037]		ND	(370)	[.037]
2-Nitroaniline	ND	(1900)	[.038]		ND	(1800)	[.037]		ND	(1900)	[.037]		ND	(1800)	[.037]		ND	(1800)	[.037]
2-Nitrophenol	ND	(380)	[.038]		ND	(370)	[.037]		ND	(370)	[.037]		ND	(370)	[.037]		ND	(370)	[.037]
2-Picoline	ND	(380)	[.038]		ND	(370)	[.037]		ND	(370)	[.037]		ND	(370)	[.037]		ND	(370)	[.037]
3,3'-Dichlorobenzidine	ND	(770)	[.038]		ND	(730)	[.037]		ND	(750)	[.037]		ND	(730)	[.037]		ND	(730)	[.037]
3-Methylcholanthrene	ND	(380)	[.038]		ND	(370)	[.037]		ND	(370)	[.037]		ND	(370)	[.037]		ND	(370)	[.037]
3-Nitroaniline	ND	(1900)	[.038]		ND	(1800)	[.037]		ND	(1900)	[.037]		ND	(1800)	[.037]		ND	(1800)	[.037]
4,6-Dinitro-2-methylphenol	ND	(1900)	[.038]		ND	(1800)	[.037]		ND	(1900)	[.037]		ND	(1800)	[.037]		ND	(1800)	[.037]
4-Aminobiphenyl	ND	(380)	[.038]		ND	(370)	[.037]		ND	(370)	[.037]		ND	(370)	[.037]		ND	(370)	[.037]
4-Bromophenyl phenyl ether	ND	(380)	[.038]		ND	(370)	[.037]		ND	(370)	[.037]		ND	(370)	[.037]		ND	(370)	[.037]
4-Chloro-3-methylphenol	ND	(380)	[.038]		ND	(370)	[.037]		ND	(370)	[.037]		ND	(370)	[.037]		ND	(370)	[.037]
4-Chlorophenyl phenyl ether	ND	(380)	[.038]		ND	(370)	[.037]		ND	(370)	[.037]		ND	(370)	[.037]		ND	(370)	[.037]
4-Methylphenol(p-cresol)	ND	(380)	[.038]		ND	(370)	[.037]		ND	(370)	[.037]		ND	(370)	[.037]		ND	(370)	[.037]
4-Nitroaniline	ND	(1900)	[.038]		ND	(1800)	[.037]		ND	(1900)	[.037]		ND	(1800)	[.037]		ND	(1800)	[.037]
4-Nitrophenol	ND	(1900)	[.038]		ND	(1800)	[.037]		ND	(1900)	[.037]		ND	(1800)	[.037]		ND	(1800)	[.037]
7,12-Dimethylbenz(a)anthracene	ND	(960)	[.038]		ND	(920)	[.037]		ND	(930)	[.037]		ND	(910)	[.037]		ND	(910)	[.037]
Acenaphthene	ND	(380)	[.038]		ND	(370)	[.037]		ND	(370)	[.037]		ND	(370)	[.037]		ND	(370)	[.037]
Acenaphthylene	ND	(380)	[.038]		ND	(370)	[.037]		ND	(370)	[.037]		ND	(370)	[.037]		ND	(370)	[.037]
Acetophenone	ND	(380)	[.038]		ND	(370)	[.037]		ND	(370)	[.037]		ND	(370)	[.037]		ND	(370)	[.037]
Aniline	ND	(380)	[.038]		ND	(370)	[.037]		ND	(370)	[.037]		ND	(370)	[.037]		ND	(370)	[.037]
Anthracene	ND	(380)	[.038]		ND	(370)	[.037]		ND	(370)	[.037]		ND	(370)	[.037]		ND	(370)	[.037]
Benzidine	ND	(380)	[.038]		ND	(370)	[.037]		ND	(370)	[.037]		ND	(370)	[.037]		ND	(370)	[.037]
Benzo(a)anthracene	ND	(380)	[.038]		ND	(370)	[.037]		ND	(370)	[.037]		ND	(370)	[.037]		ND	(370)	[.037]
Benzo(a)pyrene	ND	(380)	[.038]		ND	(370)	[.037]		ND	(370)	[.037]		ND	(370)	[.037]		ND	(370)	[.037]
Benzo(b)fluoranthene	ND	(380)	[.038]		ND	(370)	[.037]		ND	(370)	[.037]		ND	(370)	[.037]		ND	(370)	[.037]

Compiled: 8 Fe y 1994 () = Reporting Limit [] = Factor = Not Detected NA = Not Applicable

TABLE B1

RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 3B CAN97-3B-S 0 - 2			NONE 3C CAN97-3C-01 12 - 14			NONE 3C CAN97-3C-02 18 - 20			NONE 3C CAN97-3C-03 23 - 25		
Benzo(g,h,i)perylene	ND	(380)	[.038]	ND	(370)	[.037]	ND	(370)	[.037]	ND	(370)	[.037]
Benzo(k)fluoranthene	ND	(380)	[.038]	ND	(370)	[.037]	ND	(370)	[.037]	ND	(370)	[.037]
Benzoic acid	ND	(1900)	[.038]	ND	(1800)	[.037]	ND	(1900)	[.037]	ND	(1800)	[.037]
Benzyl alcohol	ND	(380)	[.038]	ND	(370)	[.037]	ND	(370)	[.037]	ND	(370)	[.037]
Butylbenzylphthalate	ND	(380)	[.038]	ND	(370)	[.037]	ND	(370)	[.037]	ND	(370)	[.037]
C3-Naphthalene	NA			370	(0)	[.037]	NA			NA		
C4-Naphthalene	NA			370	(0)	[.037]	NA			NA		
C5-Naphthalene	NA			1100	(0)	[.037]	NA			NA		
Chrysene	ND	(380)	[.038]	ND	(370)	[.037]	ND	(370)	[.037]	ND	(370)	[.037]
Cyclohexene 8	NA			44000	(0)	[.037]	NA			NA		
Cyclohexenol	NA			NA			150	(0)	[.037]	360	(0)	[.037]
Cyclohexenone	NA			NA			NA			220	(0)	[.037]
Di-n-octylphthalate	ND	(380)	[.038]	ND	(370)	[.037]	ND	(370)	[.037]	ND	(370)	[.037]
Dibenz(a,h)anthracene	ND	(380)	[.038]	ND	(370)	[.037]	ND	(370)	[.037]	ND	(370)	[.037]
Dibenz(a,j)acridine	ND	(380)	[.038]	ND	(370)	[.037]	ND	(370)	[.037]	ND	(370)	[.037]
Dibenzofuran	ND	(380)	[.038]	ND	(370)	[.037]	ND	(370)	[.037]	ND	(370)	[.037]
Dibutylphthalate	ND	(380)	[.038]	ND	(370)	[.037]	ND	(370)	[.037]	ND	(370)	[.037]
Diethylphthalate	ND	(380)	[.038]	ND	(370)	[.037]	ND	(370)	[.037]	ND	(370)	[.037]
Dimethylphenethylamine	ND	(380)	[.038]	ND	(370)	[.037]	ND	(370)	[.037]	ND	(370)	[.037]
Dimethylphthalate	ND	(380)	[.038]	ND	(370)	[.037]	ND	(370)	[.037]	ND	(370)	[.037]
Diphenylamine	ND	(380)	[.038]	ND	(370)	[.037]	ND	(370)	[.037]	ND	(370)	[.037]
Ethyl methanesulfonate	ND	(380)	[.038]	ND	(370)	[.037]	ND	(370)	[.037]	ND	(370)	[.037]
Fluoranthene	ND	(380)	[.038]	ND	(370)	[.037]	ND	(370)	[.037]	ND	(370)	[.037]
Fluorene	ND	(380)	[.038]	ND	(370)	[.037]	ND	(370)	[.037]	ND	(370)	[.037]
Hexachlorobenzene	ND	(380)	[.038]	ND	(370)	[.037]	ND	(370)	[.037]	ND	(370)	[.037]
Hexachlorobutadiene	ND	(380)	[.038]	ND	(370)	[.037]	ND	(370)	[.037]	ND	(370)	[.037]
Hexachlorocyclopentadiene	ND	(380)	[.038]	ND	(370)	[.037]	ND	(370)	[.037]	ND	(370)	[.037]
Hexachloroethane	ND	(380)	[.038]	ND	(370)	[.037]	ND	(370)	[.037]	ND	(370)	[.037]
Indeno(1,2,3-cd)pyrene	ND	(380)	[.038]	ND	(370)	[.037]	ND	(370)	[.037]	ND	(370)	[.037]

Compiled: 8 February 1994

() = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B1

RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	NONE 3B CAN97-3B-S 0 - 2	NONE 3C CAN97-3C-01 12 - 14	NONE 3C CAN97-3C-02 18 - 20	NONE 3C CAN97-3C-03 23 - 25
Isophorone	ND (380) [.038]	ND (370) [.037]	ND (370) [.037]	ND (370) [.037]
Methyl methanesulfonate	ND (380) [.038]	ND (370) [.037]	ND (370) [.037]	ND (370) [.037]
N-Nitroso-di-n-butylamine	ND (380) [.038]	ND (370) [.037]	ND (370) [.037]	ND (370) [.037]
N-Nitrosodimethylamine	ND (380) [.038]	ND (370) [.037]	ND (370) [.037]	ND (370) [.037]
N-Nitrosodiphenylamine	ND (380) [.038]	ND (370) [.037]	ND (370) [.037]	ND (370) [.037]
N-Nitrosodipropylamine	ND (380) [.038]	ND (370) [.037]	ND (370) [.037]	ND (370) [.037]
N-Nitrosopiperidine	ND (380) [.038]	ND (370) [.037]	ND (370) [.037]	ND (370) [.037]
Naphthalene	ND (380) [.038]	36 J (370) [.037]	ND (370) [.037]	ND (370) [.037]
Nitrobenzene	ND (380) [.038]	ND (370) [.037]	ND (370) [.037]	ND (370) [.037]
Pentachlorobenzene	ND (380) [.038]	ND (370) [.037]	ND (370) [.037]	ND (370) [.037]
Pentachloronitrobenzene	ND (380) [.038]	ND (370) [.037]	ND (370) [.037]	ND (370) [.037]
Pentachlorophenol	ND (1900) [.038]	ND (1800) [.037]	ND (1900) [.037]	ND (1800) [.037]
Phenacetin	ND (380) [.038]	ND (370) [.037]	ND (370) [.037]	ND (370) [.037]
Phenanthrene	ND (380) [.038]	ND (370) [.037]	ND (370) [.037]	ND (370) [.037]
Phenol	ND (380) [.038]	ND (370) [.037]	ND (370) [.037]	ND (370) [.037]
Pronamide	ND (380) [.038]	ND (370) [.037]	ND (370) [.037]	ND (370) [.037]
Pyrene	ND (380) [.038]	ND (370) [.037]	ND (370) [.037]	ND (370) [.037]
Pyridine	ND (380) [.038]	ND (370) [.037]	ND (370) [.037]	ND (370) [.037]
Trichloropropene(s)	NA	NA	600 (0) [.037]	NA
Unknown	580 (0) [.038]	330 (0) [.037]	190 (0) [.037]	880 (0) [.037]
Unknown B	NA	370 (0) [.037]	NA	NA
Unknown alkane	NA	260 (0) [.037]	NA	NA
Unknown alkene	NA	NA	56000 (0) [.037]	62000 (0) [.037]
Unknown cyclic ether	310 (0) [.038]	NA	NA	NA
Unknown cyclic ether B	NA	NA	520 (0) [.037]	1500 (0) [.037]
Unknown silane	NA	920 (0) [.037]	NA	NA
bis(2-Chloroethoxy)methane	ND (380) [.038]	ND (370) [.037]	ND (370) [.037]	ND (370) [.037]
bis(2-Chloroethyl)ether	ND (380) [.038]	ND (370) [.037]	ND (370) [.037]	ND (370) [.037]
bis(2-Chloroisopropyl)ether	ND (380) [.038]	ND (370) [.037]	ND (370) [.037]	ND (370) [.037]

Compiled: 8 Fe[illegible] y 1994

() = Reporting Limit [] = Factor [illegible] = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 3B CAN97-3B-S 0 - 2			NONE 3C CAN97-3C-01 12 - 14			NONE 3C CAN97-3C-02 18 - 20			NONE 3C CAN97-3C-03 23 - 25		
bis(2-Ethylhexyl)phthalate	ND	(380)	[.038]	ND	(370)	[.037]	ND	(370)	[.037]	ND	(370)	[.037]
p-Chloroaniline	ND	(380)	[.038]	ND	(370)	[.037]	ND	(370)	[.037]	ND	(370)	[.037]
p-Dimethylaminoazobenzene	ND	(380)	[.038]	ND	(370)	[.037]	ND	(370)	[037]	ND	(370)	[.037]

TABLE B1

RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)												
	NONE 3C CAN97-3C-04 28 - 30			NONE 3C CAN97-3C-05 33 - 35			NONE 3C CAN97-3C-06 38 - 40			NONE 3C CAN97-3C-99 Dup of CAN97-3C-06 38 - 40		
EPA 418.1 - Total Recoverable Petroleum Hydrocarbons (mg/kg)												
Hydrocarbons	ND	(28)	[5.502]	49 @	(28)	[5.582]	11 @	(28)	[5.599]	ND	(28)	[5.569]
SW8015 - Total Petroleum Hydrocarbons (ug/kg)												
Benzene (2)	ND	(33)	[110.000]	NA			ND	(34)	[114.000]	ND	(33)	[111.000]
Diesel (2)	16000 GB@	(5500)	[109.890]	NA			19000 GB@	(5600)	[112.360]	24000 GB@	(5600)	[111.111]
Ethylbenzene (2)	ND	(33)	[110.000]	NA			ND	(34)	[114.000]	ND	(33)	[111.000]
Gasoline (2)	ND	(5500)	[110.000]	NA			ND	(5700)	[114.000]	ND	(5600)	[111.000]
Jet fuel (2)	ND	(11000)	[109.890]	NA			ND	(11000)	[112.360]	ND	(11000)	[111.111]
Kerosene (2)	ND	(11000)	[109.890]	NA			ND	(11000)	[112.360]	ND	(11000)	[111.111]
Toluene (2)	ND	(33)	[110.000]	NA			ND	(34)	[114.000]	ND	(33)	[111.000]
Xylenes (total) (2)	ND	(55)	[110.000]	NA			ND	(57)	[114.000]	ND	(56)	[111.000]
SW8080 - Organochlorine Pesticides and PCBs (ug/kg)												
4,4'-DDD	ND	(0.37)	[36.751]	ND	(0.37)	[37.453]	ND	(0.37)	[37.453]	ND	(0.37)	[37.037]
4,4'-DDE	ND	(0.37)	[36.751]	ND	(0.37)	[37.453]	0.41 @	(0.37)	[37.453]	ND	(0.37)	[37.037]
4,4'-DDT	ND	(0.74)	[36.751]	ND	(0.75)	[37.453]	0.52 J	(0.75)	[37.453]	ND	(0.74)	[37.037]
Aldrin	ND	(0.37)	[36.751]	ND	(0.37)	[37.453]	ND	(0.37)	[37.453]	ND	(0.37)	[37.037]
Chlordane	ND	(1.8)	[36.751]	ND	(1.9)	[37.453]	ND	(1.9)	[37.453]	ND	(1.9)	[37.037]
Dieldrin	ND	(0.37)	[36.751]	ND	(0.37)	[37.453]	ND	(0.37)	[37.453]	ND	(0.37)	[37.037]
Endosulfan I	ND	(0.37)	[36.751]	ND	(0.37)	[37.453]	ND	(0.37)	[37.453]	ND	(0.37)	[37.037]
Endosulfan II	ND	(1.1)	[36.751]	ND	(1.1)	[37.453]	ND	(1.1)	[37.453]	ND	(1.1)	[37.037]
Endosulfan Sulfate	ND	(1.8)	[36.751]	ND	(1.9)	[37.453]	ND	(1.9)	[37.453]	ND	(1.9)	[37.037]
Endrin	ND @	(0.37)	[36.751]	0.52 @	(0.37)	[37.453]	ND	(0.37)	[37.453]	ND	(0.37)	[37.037]
Endrin Aldehyde	ND	(0.74)	[36.751]	ND	(0.75)	[37.453]	ND	(0.75)	[37.453]	ND	(0.74)	[37.037]
Endrin Ketone	ND	(1.8)	[36.751]	ND	(1.9)	[37.453]	ND	(1.9)	[37.453]	ND	(1.9)	[37.037]
Heptachlor	ND	(0.37)	[36.751]	ND	(0.37)	[37.453]	ND	(0.37)	[37.453]	ND	(0.37)	[37.037]
Heptachlor epoxide	ND	(0.37)	[36.751]	ND	(0.37)	[37.453]	ND	(0.37)	[37.453]	ND	(0.37)	[37.037]
Methoxychlor	ND	(1.8)	[36.751]	ND	(1.9)	[37.453]	ND	(1.9)	[37.453]	ND	(1.9)	[37.037]
PCB-1016	ND	(3.7)	[36.751]	ND	(3.7)	[37.453]	ND	(3.7)	[37.453]	ND	(3.7)	[37.037]
PCB-1221	ND	(7.4)	[36.751]	ND	(7.5)	[37.453]	ND	(7.5)	[37.453]	ND	(7.4)	[37.037]

Compiled: 8 Fe y 1994

() = Reporting Limit [] = Factor (= Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 3C CAN97-3C-04 28 - 30			NONE 3C CAN97-3C-05 33 - 35			NONE 3C CAN97-3C-06 38 - 40			NONE 3C CAN97-3C-99 Dup of CAN97-3C-06 38 - 40		
PCB-1232	ND	(7.4)	[36.751]	ND	(7.5)	[37.453]	ND	(7.5)	[37.453]	ND	(7.4)	[37.037]
PCB-1242	ND	(3.7)	[36.751]	ND	(3.7)	[37.453]	ND	(3.7)	[37.453]	ND	(3.7)	[37.037]
PCB-1248	ND	(3.7)	[36.751]	ND	(3.7)	[37.453]	ND	(3.7)	[37.453]	ND	(3.7)	[37.037]
PCB-1254	ND	(7.4)	[36.751]	ND	(7.5)	[37.453]	ND	(7.5)	[37.453]	ND	(7.4)	[37.037]
PCB-1260	ND	(7.4)	[36.751]	ND	(7.5)	[37.453]	ND	(7.5)	[37.453]	ND	(7.4)	[37.037]
Toxaphene	ND	(18)	[36.751]	ND	(19)	[37.453]	ND	(19)	[37.453]	ND	(19)	[37.037]
alpha-BHC	ND	(0.37)	[36.751]	ND	(0.37)	[37.453]	ND	(0.37)	[37.453]	ND	(0.37)	[37.037]
beta-BHC	4.8 G	(0.37)	[36.751]	0.95 @	(0.37)	[37.453]	ND	(0.37)	[37.453]	4.7 G	(0.37)	[37.037]
delta-BHC	ND	(0.37)	[36.751]	ND	(0.37)	[37.453]	ND	(0.37)	[37.453]	ND	(0.37)	[37.037]
gamma-BHC	ND	(0.37)	[36.751]	ND	(0.37)	[37.453]	ND	(0.37)	[37.453]	ND	(0.37)	[37.037]
SW8150 - Chlorinated Herbicides (ug/kg)												
2,4,5-T	ND	(7.4)	[36.751]	NA			ND	(7.5)	[37.327]	ND	(7.4)	[37.161]
2,4,5-TP (Silvex)	ND	(6.2)	[36.751]	NA			ND	(6.3)	[37.327]	ND	(6.3)	[37.161]
2,4-D	ND	(44)	[36.751]	NA			ND	(45)	[37.327]	ND	(45)	[37.161]
2,4-DB	ND	(33)	[36.751]	NA			ND	(34)	[37.327]	ND	(34)	[37.161]
Dalapon	ND	(210)	[36.751]	NA			ND	(220)	[37.327]	ND	(220)	[37.161]
Dicamba	ND	(9.9)	[36.751]	NA			ND	(10)	[37.327]	ND	(10)	[37.161]
Dichloroprop	180 G	(24)	[36.751]	NA			670 G	(24)	[37.327]	ND	(24)	[37.161]
Dinoseb	ND	(5.5)	[36.751]	NA			ND	(5.6)	[37.327]	ND	(5.6)	[37.161]
MCPA	ND	(9200)	[36.751]	NA			ND	(9300)	[37.327]	ND	(9300)	[37.161]
MCPP	ND	(7100)	[36.751]	NA			ND	(7200)	[37.327]	ND	(7100)	[37.161]
SW8240 - Volatile Organics (ug/kg)												
1,1,1-Trichloroethane	ND	(5.5)	[1.103]	ND	(5.6)	[1.120]	ND	(5.6)	[1.117]	ND	(5.6)	[1.115]
1,1,2,2-Tetrachloroethane	ND	(5.5)	[1.103]	ND	(5.6)	[1.120]	ND	(5.6)	[1.117]	ND	(5.6)	[1.115]
1,1,2-Trichloroethane	ND	(5.5)	[1.103]	ND	(5.6)	[1.120]	ND	(5.6)	[1.117]	ND	(5.6)	[1.115]
1,1-Dichloroethane	ND	(5.5)	[1.103]	ND	(5.6)	[1.120]	ND	(5.6)	[1.117]	ND	(5.6)	[1.115]
1,1-Dichloroethene	ND	(5.5)	[1.103]	ND	(5.6)	[1.120]	ND	(5.6)	[1.117]	ND	(5.6)	[1.115]
1,2,3-Trichloropropane	ND	(5.5)	[1.103]	ND	(5.6)	[1.120]	ND	(5.6)	[1.117]	ND	(5.6)	[1.115]
1,2-Dichloroethane	ND	(5.5)	[1.103]	ND	(5.6)	[1.120]	ND	(5.6)	[1.117]	ND	(5.6)	[1.115]

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TABLE B1

RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 3C CAN97-3C-04 28 - 30			NONE 3C CAN97-3C-05 33 - 35			NONE 3C CAN97-3C-06 38 - 40			NONE 3C CAN97-3C-99 Dup of CAN97-3C-06 38 - 40		
1,2-Dichloropropane	ND	(5.5)	[1.103]	ND	(5.6)	[1.120]	ND	(5.6)	[1.117]	ND	(5.6)	[1.115]
2-Chloroethyl vinyl ether	ND	(11)	[1.103]	ND	(11)	[1.120]	ND	(11)	[1.117]	ND	(11)	[1.115]
2-Hexanone	ND	(55)	[1.103]	ND	(56)	[1.120]	ND	(56)	[1.117]	ND	(56)	[1.115]
4-Methyl-2-pentanone(MIBK)	ND	(55)	[1.103]	ND	(56)	[1.120]	ND	(56)	[1.117]	ND	(56)	[1.115]
Acetone	ND	(110)	[1.103]	ND	(110)	[1.120]	ND	(110)	[1.117]	ND	(110)	[1.115]
Acrolein	ND	(83)	[1.103]	ND	(84)	[1.120]	ND	(84)	[1.117]	ND	(84)	[1.115]
Acrylonitrile	ND	(55)	[1.103]	ND	(56)	[1.120]	ND	(56)	[1.117]	ND	(56)	[1.115]
Benzene	ND	(5.5)	[1.103]	ND	(5.6)	[1.120]	ND	(5.6)	[1.117]	ND	(5.6)	[1.115]
Bromodichloromethane	ND	(5.5)	[1.103]	ND	(5.6)	[1.120]	ND	(5.6)	[1.117]	ND	(5.6)	[1.115]
Bromomethane	ND	(11)	[1.103]	ND	(11)	[1.120]	ND	(11)	[1.117]	ND	(11)	[1.115]
Carbon disulfide	ND	(5.5)	[1.103]	ND	(5.6)	[1.120]	ND	(5.6)	[1.117]	ND	(5.6)	[1.115]
Carbon tetrachloride	ND	(5.5)	[1.103]	ND	(5.6)	[1.120]	ND	(5.6)	[1.117]	ND	(5.6)	[1.115]
Chlorobenzene	ND	(5.5)	[1.103]	ND	(5.6)	[1.120]	ND	(5.6)	[1.117]	ND	(5.6)	[1.115]
Chloroethane	ND	(11)	[1.103]	ND	(11)	[1.120]	ND	(11)	[1.117]	ND	(11)	[1.115]
Chloroform	ND	(5.5)	[1.103]	ND	(5.6)	[1.120]	ND	(5.6)	[1.117]	ND	(5.6)	[1.115]
Chloromethane	ND	(11)	[1.103]	ND	(11)	[1.120]	ND	(11)	[1.117]	ND	(11)	[1.115]
Decanal	13	()	[1.103]	NA			NA			6.7	()	[1.115]
Dibromochloromethane	ND	(5.5)	[1.103]	ND	(5.6)	[1.120]	ND	(5.6)	[1.117]	ND	(5.6)	[1.115]
Dibromomethane	ND	(5.5)	[1.103]	ND	(5.6)	[1.120]	ND	(5.6)	[1.117]	ND	(5.6)	[1.115]
Dichlorodifluoromethane	ND	(22)	[1.103]	ND	(22)	[1.120]	ND	(22)	[1.117]	ND	(22)	[1.115]
Ethyl benzene	ND	(5.5)	[1.103]	ND	(5.6)	[1.120]	ND	(5.6)	[1.117]	ND	(5.6)	[1.115]
Ethyl methacrylate	ND	(17)	[1.103]	ND	(17)	[1.120]	ND	(17)	[1.117]	ND	(17)	[1.115]
Iodomethane	ND	(5.5)	[1.103]	ND	(5.6)	[1.120]	ND	(5.6)	[1.117]	ND	(5.6)	[1.115]
Methyl ethyl ketone	ND	(110)	[1.103]	ND	(110)	[1.120]	ND	(110)	[1.117]	ND	(110)	[1.115]
Methylene chloride	ND	(5.5)	[1.103]	8.8 @	(5.6)	[1.120]	4.4 J	(5.6)	[1.117]	ND	(5.6)	[1.115]
Nonanal	23	()	[1.103]	NA			NA			5.6	()	[1.115]
Styrene	ND	(5.5)	[1.103]	ND	(5.6)	[1.120]	ND	(5.6)	[1.117]	ND	(5.6)	[1.115]
Tetrachloroethene	ND	(5.5)	[1.103]	ND	(5.6)	[1.120]	ND	(5.6)	[1.117]	ND	(5.6)	[1.115]
Toluene	ND	(5.5)	[1.103]	ND	(5.6)	[1.120]	ND	(5.6)	[1.117]	ND	(5.6)	[1.115]

Compiled: 8 Fe[illegible]y 1994

() = Reporting Limit [] = Factor ^ = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID	LOCATION ID	SAMPLE ID	BEG. DEPTH - END DEPTH (FT.)								
	NONE	3C	CAN97-3C-04	28 - 30	NONE	3C	CAN97-3C-05	33 - 35	NONE	3C	CAN97-3C-06	38 - 40	NONE	3C	CAN97-3C-99 Dup of CAN97-3C-06	38 - 40
Tribromomethane(Bromoform)	ND	(5.5)	[1.103]		ND	(5.6)	[1.120]		ND	(5.6)	[1.117]		ND	(5.6)	[1.115]	
Trichloroethene	ND	(5.5)	[1.103]		ND	(5.6)	[1.120]		ND	(5.6)	[1.117]		ND	(5.6)	[1.115]	
Trichlorofluoromethane	ND	(11)	[1.103]		ND	(11)	[1.120]		ND	(11)	[1.117]		ND	(11)	[1.115]	
Vinyl acetate	ND	(5.5)	[1.103]		ND	(5.6)	[1.120]		ND	(5.6)	[1.117]		ND	(5.6)	[1.115]	
Vinyl chloride	ND	(11)	[1.103]		ND	(11)	[1.120]		ND	(11)	[1.117]		ND	(11)	[1.115]	
Xylenes	ND	(5.5)	[1.103]		ND	(5.6)	[1.120]		ND	(5.6)	[1.117]		ND	(5.6)	[1.115]	
cis-1,3-Dichloropropene	ND	(5.5)	[1.103]		ND	(5.6)	[1.120]		ND	(5.6)	[1.117]		ND	(5.6)	[1.115]	
trans-1,2-Dichloroethene	ND	(5.5)	[1.103]		ND	(5.6)	[1.120]		ND	(5.6)	[1.117]		ND	(5.6)	[1.115]	
trans-1,3-Dichloropropene	ND	(5.5)	[1.103]		ND	(5.6)	[1.120]		ND	(5.6)	[1.117]		ND	(5.6)	[1.115]	
trans-1,4-Dichloro-2-butene	ND	(11)	[1.103]		ND	(11)	[1.120]		ND	(11)	[1.117]		ND	(11)	[1.115]	
SW8270 - Semivolatile Organics (ug/kg)																
1,2,4,5-Tetrachlorobenzene	ND	(370)	[.037]		ND	(370)	[.037]		ND	(370)	[.037]		ND	(370)	[.037]	
1,2,4-Trichlorobenzene	ND	(370)	[.037]		ND	(370)	[.037]		ND	(370)	[.037]		ND	(370)	[.037]	
1,2-Dichlorobenzene	ND	(370)	[.037]		ND	(370)	[.037]		ND	(370)	[.037]		ND	(370)	[.037]	
1,2-Diphenylhydrazine	ND	(370)	[.037]		ND	(370)	[.037]		ND	(370)	[.037]		ND	(370)	[.037]	
1,3-Dichlorobenzene	ND	(370)	[.037]		ND	(370)	[.037]		ND	(370)	[.037]		ND	(370)	[.037]	
1,4-Dichlorobenzene	ND	(370)	[.037]		ND	(370)	[.037]		ND	(370)	[.037]		ND	(370)	[.037]	
1-Chloronaphthalene	ND	(370)	[.037]		ND	(370)	[.037]		ND	(370)	[.037]		ND	(370)	[.037]	
1-Naphthylamine	ND	(370)	[.037]		ND	(370)	[.037]		ND	(370)	[.037]		ND	(370)	[.037]	
2,3,4,6-Tetrachlorophenol	ND	(740)	[.037]		ND	(750)	[.037]		ND	(750)	[.037]		ND	(740)	[.037]	
2,4,5-Trichlorophenol	ND	(370)	[.037]		ND	(370)	[.037]		ND	(370)	[.037]		ND	(370)	[.037]	
2,4,6-Trichlorophenol	ND	(370)	[.037]		ND	(370)	[.037]		ND	(370)	[.037]		ND	(370)	[.037]	
2,4-Dichlorophenol	ND	(370)	[.037]		ND	(370)	[.037]		ND	(370)	[.037]		ND	(370)	[.037]	
2,4-Dimethylphenol	ND	(370)	[.037]		ND	(370)	[.037]		ND	(370)	[.037]		ND	(370)	[.037]	
2,4-Dinitrophenol	ND	(1800)	[.037]		ND	(1900)	[.037]		ND	(1900)	[.037]		ND	(1900)	[.037]	
2,4-Dinitrotoluene	ND	(370)	[.037]		ND	(370)	[.037]		ND	(370)	[.037]		ND	(370)	[.037]	
2,6-Dichlorophenol	ND	(370)	[.037]		ND	(370)	[.037]		ND	(370)	[.037]		ND	(370)	[.037]	
2,6-Dinitrotoluene	ND	(370)	[.037]		ND	(370)	[.037]		ND	(370)	[.037]		ND	(370)	[.037]	
2-Chloronaphthalene	ND	(370)	[.037]		ND	(370)	[.037]		ND	(370)	[.037]		ND	(370)	[.037]	

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TABLE B1

RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID	LOCATION ID	SAMPLE ID	BEG. DEPTH - END DEPTH (FT.)												
	NONE	3C	CAN97-3C-04	28 - 30			NONE	3C	CAN97-3C-05	33 - 35			NONE	3C	CAN97-3C-06	38 - 40			NONE	3C	CAN97-3C-99 Dup of CAN97-3C-06	38 - 40		
2-Chlorophenol	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(370)	[	.037]
2-Methylnaphthalene	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(370)	[	.037]
2-Methylphenol(o-cresol)	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(370)	[	.037]
2-Naphthylamine	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(370)	[	.037]
2-Nitroaniline	ND	(1800)	[	.037]	ND	(1900)	[	.037]	ND	(1900)	[	.037]	ND	(1900)	[	.037]
2-Nitrophenol	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(370)	[	.037]
2-Picoline	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(370)	[	.037]
3,3'-Dichlorobenzidine	ND	(740)	[	.037]	ND	(750)	[	.037]	ND	(750)	[	.037]	ND	(740)	[	.037]
3-Methylcholanthrene	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(370)	[	.037]
3-Nitroaniline	ND	(1800)	[	.037]	ND	(1900)	[	.037]	ND	(1900)	[	.037]	ND	(1900)	[	.037]
4,6-Dinitro-2-methylphenol	ND	(1800)	[	.037]	ND	(1900)	[	.037]	ND	(1900)	[	.037]	ND	(1900)	[	.037]
4-Aminobiphenyl	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(370)	[	.037]
4-Bromophenyl phenyl ether	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(370)	[	.037]
4-Chloro-3-methylphenol	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(370)	[	.037]
4-Chlorophenyl phenyl ether	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(370)	[	.037]
4-Methylphenol(p-cresol)	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(370)	[	.037]
4-Nitroaniline	ND	(1800)	[	.037]	ND	(1900)	[	.037]	ND	(1900)	[	.037]	ND	(1900)	[	.037]
4-Nitrophenol	ND	(1800)	[	.037]	ND	(1900)	[	.037]	ND	(1900)	[	.037]	ND	(1900)	[	.037]
7,12-Dimethylbenz(a)anthracene	ND	(920)	[	.037]	ND	(930)	[	.037]	ND	(930)	[	.037]	ND	(930)	[	.037]
Acenaphthene	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(370)	[	.037]
Acenaphthylene	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(370)	[	.037]
Acetophenone	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(370)	[	.037]
Aniline	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(370)	[	.037]
Anthracene	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(370)	[	.037]
Benzidine	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(370)	[	.037]
Benzo(a)anthracene	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(370)	[	.037]
Benzo(a)pyrene	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(370)	[	.037]
Benzo(b)fluoranthene	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(370)	[	.037]
Benzo(g,h,i)perylene	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(370)	[	.037]

Compiled: 8 Fe[illegible]y 1994

() = Reporting Limit [] = Factor * Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID	NONE	NONE	NONE	NONE
	LOCATION ID	3C	3C	3C	3C
	SAMPLE ID	CAN97-3C-04	CAN97-3C-05	CAN97-3C-06	CAN97-3C-99 Dup of CAN97-3C-06
	BEG. DEPTH - END DEPTH (FT.)	28 - 30	33 - 35	38 - 40	38 - 40
Benzo(k)fluoranthene		ND (370) [.037]	ND (370) [.037]	ND (370) [.037]	ND (370) [.037]
Benzoic acid		ND (1800) [.037]	ND (1900) [.037]	ND (1900) [.037]	ND (1900) [.037]
Benzyl alcohol		ND (370) [.037]	ND (370) [.037]	ND (370) [.037]	ND (370) [.037]
Butylbenzylphthalate		ND (370) [.037]	ND (370) [.037]	ND (370) [.037]	ND (370) [.037]
Chrysene		ND (370) [.037]	ND (370) [.037]	ND (370) [.037]	ND (370) [.037]
Cyclohexenol		180 (0) [.037]	340 (0) [.037]	370 (0) [.037]	NA
Cyclohexenone		NA	150 (0) [.037]	190 (0) [.037]	180 (0) [.037]
Di-n-octylphthalate		ND (370) [.037]	ND (370) [.037]	ND (370) [.037]	ND (370) [.037]
Dibenz(a,h)anthracene		ND (370) [.037]	ND (370) [.037]	ND (370) [.037]	ND (370) [.037]
Dibenz(a,j)acridine		ND (370) [.037]	ND (370) [.037]	ND (370) [.037]	ND (370) [.037]
Dibenzofuran		ND (370) [.037]	ND (370) [.037]	ND (370) [.037]	ND (370) [.037]
Dibutylphthalate		ND (370) [.037]	ND (370) [.037]	ND (370) [.037]	ND (370) [.037]
Diethylphthalate		ND (370) [.037]	ND (370) [.037]	ND (370) [.037]	ND (370) [.037]
Dimethylphenethylamine		ND (370) [.037]	ND (370) [.037]	ND (370) [.037]	ND (370) [.037]
Dimethylphthalate		ND (370) [.037]	ND (370) [.037]	ND (370) [.037]	ND (370) [.037]
Diphenylamine		ND (370) [.037]	ND (370) [.037]	ND (370) [.037]	ND (370) [.037]
Ethyl methanesulfonate		ND (370) [.037]	ND (370) [.037]	ND (370) [.037]	ND (370) [.037]
Fluoranthene		ND (370) [.037]	ND (370) [.037]	ND (370) [.037]	ND (370) [.037]
Fluorene		ND (370) [.037]	ND (370) [.037]	ND (370) [.037]	ND (370) [.037]
Hexachlorobenzene		ND (370) [.037]	ND (370) [.037]	ND (370) [.037]	ND (370) [.037]
Hexachlorobutadiene		ND (370) [.037]	ND (370) [.037]	ND (370) [.037]	ND (370) [.037]
Hexachlorocyclopentadiene		ND (370) [.037]	ND (370) [.037]	ND (370) [.037]	ND (370) [.037]
Hexachloroethane		ND (370) [.037]	ND (370) [.037]	ND (370) [.037]	ND (370) [.037]
Indeno(1,2,3-cd)pyrene		ND (370) [.037]	ND (370) [.037]	ND (370) [.037]	ND (370) [.037]
Isophorone		ND (370) [.037]	ND (370) [.037]	ND (370) [.037]	ND (370) [.037]
Methyl methanesulfonate		ND (370) [.037]	ND (370) [.037]	ND (370) [.037]	ND (370) [.037]
N-Nitroso-di-n-butylamine		ND (370) [.037]	ND (370) [.037]	ND (370) [.037]	ND (370) [.037]
N-Nitrosodimethylamine		ND (370) [.037]	ND (370) [.037]	ND (370) [.037]	ND (370) [.037]
N-Nitrosodiphenylamine		ND (370) [.037]	ND (370) [.037]	ND (370) [.037]	ND (370) [.037]

Compiled: 8 February 1994 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B1

RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)																
	NONE 3C CAN97-3C-04 28 - 30				NONE 3C CAN97-3C-05 33 - 35				NONE 3C CAN97-3C-06 38 - 40				NONE 3C CAN97-3C-99 Dup of CAN97-3C-06 38 - 40			
N-Nitrosodipropylamine	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(370)	[	.037]
N-Nitrosopiperidine	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(370)	[	.037]
Naphthalene	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(370)	[	.037]
Nitrobenzene	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(370)	[	.037]
Pentachlorobenzene	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(370)	[	.037]
Pentachloronitrobenzene	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(370)	[	.037]
Pentachlorophenol	ND	(1800)	[	.037]	ND	(1900)	[	.037]	ND	(1900)	[	.037]	ND	(1900)	[	.037]
Phenacetin	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(370)	[	.037]
Phenanthrene	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(370)	[	.037]
Phenol	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(370)	[	.037]
Pronamide	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(370)	[	.037]
Pyrene	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(370)	[	.037]
Pyridine	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(370)	[	.037]
Unknown	220	(0)	[	.037]	410	(0)	[	.037]	410	(0)	[	.037]	300	(0)	[	.037]
Unknown alkene	48000	(0)	[	.037]	52000	(0)	[	.037]	56000	(0)	[	.037]	48000	(0)	[	.037]
Unknown cyclic ether B	700	(0)	[	.037]	1100	(0)	[	.037]	1300	(0)	[	.037]	1200	(0)	[	.037]
Unknown ester	NA				190	(0)	[	.037]	NA				NA			
bis(2-Chloroethoxy)methane	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(370)	[	.037]
bis(2-Chloroethyl)ether	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(370)	[	.037]
bis(2-Chloroisopropyl)ether	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(370)	[	.037]
bis(2-Ethylhexyl)phthalate	29 J	(370)	[	.037]	82 J	(370)	[	.037]	ND	(370)	[	.037]	52 J	(370)	[	.037]
p-Chloroaniline	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(370)	[	.037]
p-Dimethylaminoazobenzene	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(370)	[	.037]

Compiled: 8 F[illegible]y 1994

() = Reporting Limit [] = Factor [illegible] = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 3C CAN97-3C-07 43 - 45			NONE 3C CAN97-3C-08 48 - 50			NONE 3C CAN97-3C-09 53 - 55			NONE 3C CAN97-3C-10 58 - 60		
EPA 418.1 - Total Recoverable Petroleum Hydrocarbons (mg/kg)												
Hydrocarbons	4.5 @	(28)	[5.504]	22 @	(28)	[5.545]	4.6 @	(28)	[5.634]	4.4 @	(27)	[5.381]
SW8080 - Organochlorine Pesticides and PCBs (ug/kg)												
4,4'-DDD	ND	(0.37)	[36.751]	ND	(0.37)	[37.037]	ND	(0.37)	[37.453]	ND	(0.36)	[35.920]
4,4'-DDE	ND	(0.37)	[36.751]	ND	(0.37)	[37.037]	ND	(0.37)	[37.453]	ND	(0.36)	[35.920]
4,4'-DDT	0.5 J	(0.74)	[36.751]	ND	(0.74)	[37.037]	0.49 J	(0.75)	[37.453]	ND	(0.72)	[35.920]
Aldrin	ND	(0.37)	[36.751]	ND	(0.37)	[37.037]	ND	(0.37)	[37.453]	ND	(0.36)	[35.920]
Chlordane	ND	(1.8)	[36.751]	ND	(1.9)	[37.037]	ND	(1.9)	[37.453]	ND	(1.8)	[35.920]
Dieldrin	ND	(0.37)	[36.751]	ND	(0.37)	[37.037]	ND	(0.37)	[37.453]	ND	(0.36)	[35.920]
Endosulfan I	ND	(0.37)	[36.751]	ND	(0.37)	[37.037]	ND	(0.37)	[37.453]	ND	(0.36)	[35.920]
Endosulfan II	ND	(1.1)	[36.751]	ND	(1.1)	[37.037]	0.05 J	(1.1)	[37.453]	ND	(1.1)	[35.920]
Endosulfan Sulfate	ND	(1.8)	[36.751]	ND	(1.9)	[37.037]	ND	(1.9)	[37.453]	ND	(1.8)	[35.920]
Endrin	ND	(0.37)	[36.751]	ND	(0.37)	[37.037]	ND	(0.37)	[37.453]	ND	(0.36)	[35.920]
Endrin Aldehyde	ND	(0.74)	[36.751]	ND	(0.74)	[37.037]	ND	(0.75)	[37.453]	ND	(0.72)	[35.920]
Endrin Ketone	ND	(1.8)	[36.751]	ND	(1.9)	[37.037]	ND	(1.9)	[37.453]	ND	(1.8)	[35.920]
Heptachlor	ND	(0.37)	[36.751]	ND	(0.37)	[37.037]	ND	(0.37)	[37.453]	ND	(0.36)	[35.920]
Heptachlor epoxide	0.27 J	(0.37)	[36.751]	0.21 J	(0.37)	[37.037]	0.26 J	(0.37)	[37.453]	0.17 J	(0.36)	[35.920]
Methoxychlor	ND	(1.8)	[36.751]	ND	(1.9)	[37.037]	ND	(1.9)	[37.453]	ND	(1.8)	[35.920]
PCB-1016	ND	(3.7)	[36.751]	ND	(3.7)	[37.037]	ND	(3.7)	[37.453]	ND	(3.6)	[35.920]
PCB-1221	ND	(7.4)	[36.751]	ND	(7.4)	[37.037]	ND	(7.5)	[37.453]	ND	(7.2)	[35.920]
PCB-1232	ND	(7.4)	[36.751]	ND	(7.4)	[37.037]	ND	(7.5)	[37.453]	ND	(7.2)	[35.920]
PCB-1242	ND	(3.7)	[36.751]	ND	(3.7)	[37.037]	ND	(3.7)	[37.453]	ND	(3.6)	[35.920]
PCB-1248	ND	(3.7)	[36.751]	ND	(3.7)	[37.037]	ND	(3.7)	[37.453]	ND	(3.6)	[35.920]
PCB-1254	ND	(7.4)	[36.751]	ND	(7.4)	[37.037]	ND	(7.5)	[37.453]	ND	(7.2)	[35.920]
PCB-1260	ND	(7.4)	[36.751]	ND	(7.4)	[37.037]	ND	(7.5)	[37.453]	ND	(7.2)	[35.920]
Toxaphene	ND	(18)	[36.751]	ND	(19)	[37.037]	ND	(19)	[37.453]	ND	(18)	[35.920]
alpha-BHC	ND	(0.37)	[36.751]	ND	(0.37)	[37.037]	ND	(0.37)	[37.453]	ND	(0.36)	[35.920]
beta-BHC	ND	(0.37)	[36.751]	9.9 G	(0.37)	[37.037]	12 G	(0.37)	[37.453]	ND	(0.36)	[35.920]
delta-BHC	ND	(0.37)	[36.751]	ND	(0.37)	[37.037]	ND	(0.37)	[37.453]	ND	(0.36)	[35.920]

TABLE B1

RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 3C CAN97-3C-07 43 - 45			NONE 3C CAN97-3C-08 48 - 50			NONE 3C CAN97-3C-09 53 - 55			NONE 3C CAN97-3C-10 58 - 60		
gamma-BHC	ND	(0.37)	[36.751]	ND	(0.37)	[37.037]	ND	(0.37)	[37.453]	ND	(0.36)	[35.920]
SW8240 - Volatile Organics (ug/kg)												
1,1,1-Trichloroethane	ND	(5.5)	[1.103]	ND	(5.6)	[1.112]	ND	(5.6)	[1.127]	ND	(5.4)	[1.077]
1,1,2,2-Tetrachloroethane	ND	(5.5)	[1.103]	ND	(5.6)	[1.112]	ND	(5.6)	[1.127]	ND	(5.4)	[1.077]
1,1,2-Trichloroethane	ND	(5.5)	[1.103]	ND	(5.6)	[1.112]	ND	(5.6)	[1.127]	ND	(5.4)	[1.077]
1,1-Dichloroethane	ND	(5.5)	[1.103]	ND	(5.6)	[1.112]	ND	(5.6)	[1.127]	ND	(5.4)	[1.077]
1,1-Dichloroethene	ND	(5.5)	[1.103]	ND	(5.6)	[1.112]	ND	(5.6)	[1.127]	ND	(5.4)	[1.077]
1,2,3-Trichloropropane	ND	(5.5)	[1.103]	ND	(5.6)	[1.112]	ND	(5.6)	[1.127]	ND	(5.4)	[1.077]
1,2-Dichloroethane	ND	(5.5)	[1.103]	ND	(5.6)	[1.112]	ND	(5.6)	[1.127]	ND	(5.4)	[1.077]
1,2-Dichloropropane	ND	(5.5)	[1.103]	ND	(5.6)	[1.112]	ND	(5.6)	[1.127]	ND	(5.4)	[1.077]
2-Chloroethyl vinyl ether	ND	(11)	[1.103]	ND	(11)	[1.112]	ND	(11)	[1.127]	ND	(11)	[1.077]
2-Hexanone	2.4 J	(55)	[1.103]	ND	(56)	[1.112]	ND	(56)	[1.127]	ND	(54)	[1.077]
4-Methyl-2-pentanone(MIBK)	ND	(55)	[1.103]	ND	(56)	[1.112]	ND	(56)	[1.127]	ND	(54)	[1.077]
Acetone	ND	(110)	[1.103]	ND	(110)	[1.112]	ND	(110)	[1.127]	ND	(110)	[1.077]
Acrolein	ND	(83)	[1.103]	ND	(83)	[1.112]	ND	(85)	[1.127]	ND	(81)	[1.077]
Acrylonitrile	ND	(55)	[1.103]	ND	(56)	[1.112]	ND	(56)	[1.127]	ND	(54)	[1.077]
Benzene	ND	(5.5)	[1.103]	ND	(5.6)	[1.112]	ND	(5.6)	[1.127]	ND	(5.4)	[1.077]
Bromodichloromethane	ND	(5.5)	[1.103]	ND	(5.6)	[1.112]	ND	(5.6)	[1.127]	ND	(5.4)	[1.077]
Bromomethane	ND	(11)	[1.103]	ND	(11)	[1.112]	ND	(11)	[1.127]	ND	(11)	[1.077]
Carbon disulfide	ND	(5.5)	[1.103]	ND	(5.6)	[1.112]	ND	(5.6)	[1.127]	ND	(5.4)	[1.077]
Carbon tetrachloride	ND	(5.5)	[1.103]	ND	(5.6)	[1.112]	ND	(5.6)	[1.127]	ND	(5.4)	[1.077]
Chlorobenzene	ND	(5.5)	[1.103]	ND	(5.6)	[1.112]	ND	(5.6)	[1.127]	ND	(5.4)	[1.077]
Chloroethane	ND	(11)	[1.103]	ND	(11)	[1.112]	ND	(11)	[1.127]	ND	(11)	[1.077]
Chloroform	ND	(5.5)	[1.103]	ND	(5.6)	[1.112]	ND	(5.6)	[1.127]	ND	(5.4)	[1.077]
Chloromethane	ND	(11)	[1.103]	ND	(11)	[1.112]	ND	(11)	[1.127]	ND	(11)	[1.077]
Decanal	NA			5.6	()	[1.112]	9	()	[1.127]	8.6	()	[1.077]
Dibromochloromethane	ND	(5.5)	[1.103]	ND	(5.6)	[1.112]	ND	(5.6)	[1.127]	ND	(5.4)	[1.077]
Dibromomethane	ND	(5.5)	[1.103]	ND	(5.6)	[1.112]	ND	(5.6)	[1.127]	ND	(5.4)	[1.077]
Dichlorodifluoromethane	ND	(22)	[1.103]	ND	(22)	[1.112]	ND	(23)	[1.127]	ND	(22)	[1.077]

Compiled: 8 F[illegible]y 1994

() = Reporting Limit [] = Factor [illegible] = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID	LOCATION ID	SAMPLE ID	BEG. DEPTH - END DEPTH (FT.)												
	NONE	3C	CAN97-3C-07	43 - 45			NONE	3C	CAN97-3C-08	48 - 50			NONE	3C	CAN97-3C-09	53 - 55			NONE	3C	CAN97-3C-10	58 - 60		
Ethyl acetate		NA						NA						NA					78			()	[	1.077]
Ethyl benzene	ND		(5.5)	[	1.103]	ND		(5.6)	[	1.112]	ND		(5.6)	[	1.127]	ND		(5.4)	[	1.077]
Ethyl methacrylate	ND		(17)	[	1.103]	ND		(17)	[	1.112]	ND		(17)	[	1.127]	ND		(16)	[	1.077]
Iodomethane	ND		(5.5)	[	1.103]	ND		(5.6)	[	1.112]	ND		(5.6)	[	1.127]	ND		(5.4)	[	1.077]
Methyl ethyl ketone	ND		(110)	[	1.103]	ND		(110)	[	1.112]	ND		(110)	[	1.127]	ND		(110)	[	1.077]
Methylene chloride	ND		(5.5)	[	1.103]	ND		(5.6)	[	1.112]	ND		(5.6)	[	1.127]	ND		(5.4)	[	1.077]
Nonanal		NA				5.6		()	[	1.112]	9		()	[	1.127]	11		()	[	1.077]
Styrene	ND		(5.5)	[	1.103]	ND		(5.6)	[	1.112]	ND		(5.6)	[	1.127]	ND		(5.4)	[	1.077]
Tetrachloroethene	ND		(5.5)	[	1.103]	ND		(5.6)	[	1.112]	ND		(5.6)	[	1.127]	ND		(5.4)	[	1.077]
Toluene	ND		(5.5)	[	1.103]	ND		(5.6)	[	1.112]	ND		(5.6)	[	1.127]	ND		(5.4)	[	1.077]
Tribromomethane(Bromoform)	ND		(5.5)	[	1.103]	ND		(5.6)	[	1.112]	ND		(5.6)	[	1.127]	ND		(5.4)	[	1.077]
Trichloroethene	ND		(5.5)	[	1.103]	ND		(5.6)	[	1.112]	ND		(5.6)	[	1.127]	ND		(5.4)	[	1.077]
Trichlorofluoromethane	ND		(11)	[	1.103]	ND		(11)	[	1.112]	ND		(11)	[	1.127]	ND		(11)	[	1.077]
Unknown		NA						NA						NA					12			()	[	1.077]
Vinyl acetate	ND		(5.5)	[	1.103]	ND		(5.6)	[	1.112]	ND		(5.6)	[	1.127]	ND		(5.4)	[	1.077]
Vinyl chloride	ND		(11)	[	1.103]	ND		(11)	[	1.112]	ND		(11)	[	1.127]	ND		(11)	[	1.077]
Xylenes	ND		(5.5)	[	1.103]	ND		(5.6)	[	1.112]	ND		(5.6)	[	1.127]	ND		(5.4)	[	1.077]
cis-1,3-Dichloropropene	ND		(5.5)	[	1.103]	ND		(5.6)	[	1.112]	ND		(5.6)	[	1.127]	ND		(5.4)	[	1.077]
trans-1,2-Dichloroethene	ND		(5.5)	[	1.103]	ND		(5.6)	[	1.112]	ND		(5.6)	[	1.127]	ND		(5.4)	[	1.077]
trans-1,3-Dichloropropene	ND		(5.5)	[	1.103]	ND		(5.6)	[	1.112]	ND		(5.6)	[	1.127]	ND		(5.4)	[	1.077]
trans-1,4-Dichloro-2-butene	ND		(11)	[	1.103]	ND		(11)	[	1.112]	ND		(11)	[	1.127]	ND		(11)	[	1.077]
SW8270 - Semivolatile Organics (ug/kg)																								
1,2,4,5-Tetrachlorobenzene	ND		(370)	[	.037]	ND		(370)	[	.037]	ND		(380)	[	.038]	ND		(360)	[	.036]
1,2,4-Trichlorobenzene	ND		(370)	[	.037]	ND		(370)	[	.037]	ND		(380)	[	.038]	ND		(360)	[	.036]
1,2-Dichlorobenzene	ND		(370)	[	.037]	ND		(370)	[	.037]	ND		(380)	[	.038]	ND		(360)	[	.036]
1,2-Diphenylhydrazine	ND		(370)	[	.037]	ND		(370)	[	.037]	ND		(380)	[	.038]	ND		(360)	[	.036]
1,3-Dichlorobenzene	ND		(370)	[	.037]	ND		(370)	[	.037]	ND		(380)	[	.038]	ND		(360)	[	.036]
1,4-Dichlorobenzene	ND		(370)	[	.037]	ND		(370)	[	.037]	ND		(380)	[	.038]	ND		(360)	[	.036]
1-Chloronaphthalene	ND		(370)	[	.037]	ND		(370)	[	.037]	ND		(380)	[	.038]	ND		(360)	[	.036]

Compiled: 8 February 1994 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B1

RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)														
	NONE 3C CAN97-3C-07 43 - 45				NONE 3C CAN97-3C-08 48 - 50				NONE 3C CAN97-3C-09 53 - 55				NONE 3C CAN97-3C-10 58 - 60		
1-Naphthylamine	ND	(370)	[.037]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(360)	[.036]
2,3,4,6-Tetrachlorophenol	ND	(740)	[.037]	ND	(740)	[.037]	ND	(750)	[.038]	ND	(720)	[.036]
2,4,5-Trichlorophenol	ND	(370)	[.037]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(360)	[.036]
2,4,6-Trichlorophenol	ND	(370)	[.037]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(360)	[.036]
2,4-Dichlorophenol	ND	(370)	[.037]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(360)	[.036]
2,4-Dimethylphenol	ND	(370)	[.037]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(360)	[.036]
2,4-Dinitrophenol	ND	(1800)	[.037]	ND	(1900)	[.037]	ND	(1900)	[.038]	ND	(1800)	[.036]
2,4-Dinitrotoluene	ND	(370)	[.037]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(360)	[.036]
2,6-Dichlorophenol	ND	(370)	[.037]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(360)	[.036]
2,6-Dinitrotoluene	ND	(370)	[.037]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(360)	[.036]
2-Chloronaphthalene	ND	(370)	[.037]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(360)	[.036]
2-Chlorophenol	ND	(370)	[.037]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(360)	[.036]
2-Methylnaphthalene	ND	(370)	[.037]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(360)	[.036]
2-Methylphenol(o-cresol)	ND	(370)	[.037]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(360)	[.036]
2-Naphthylamine	ND	(370)	[.037]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(360)	[.036]
2-Nitroaniline	ND	(1800)	[.037]	ND	(1900)	[.037]	ND	(1900)	[.038]	ND	(1800)	[.036]
2-Nitrophenol	ND	(370)	[.037]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(360)	[.036]
2-Picoline	ND	(370)	[.037]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(360)	[.036]
3,3'-Dichlorobenzidine	ND	(740)	[.037]	ND	(740)	[.037]	ND	(750)	[.038]	ND	(720)	[.036]
3-Methylcholanthrene	ND	(370)	[.037]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(360)	[.036]
3-Nitroaniline	ND	(1800)	[.037]	ND	(1900)	[.037]	ND	(1900)	[.038]	ND	(1800)	[.036]
4,6-Dinitro-2-methylphenol	ND	(1800)	[.037]	ND	(1900)	[.037]	ND	(1900)	[.038]	ND	(1800)	[.036]
4-Aminobiphenyl	ND	(370)	[.037]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(360)	[.036]
4-Bromophenyl phenyl ether	ND	(370)	[.037]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(360)	[.036]
4-Chloro-3-methylphenol	ND	(370)	[.037]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(360)	[.036]
4-Chlorophenyl phenyl ether	ND	(370)	[.037]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(360)	[.036]
4-Methylphenol(p-cresol)	ND	(370)	[.037]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(360)	[.036]
4-Nitroaniline	ND	(1800)	[.037]	ND	(1900)	[.037]	ND	(1900)	[.038]	ND	(1800)	[.036]
4-Nitrophenol	ND	(1800)	[.037]	ND	(1900)	[.037]	ND	(1900)	[.038]	ND	(1800)	[.036]

Compiled: 8 F ry 1994

() = Reporting Limit [] = Factor = Not Detected NA = Not Applicable

TABLE B1

RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)														
	NONE 3C CAN97-3C-07 43 - 45				NONE 3C CAN97-3C-08 48 - 50				NONE 3C CAN97-3C-09 53 - 55				NONE 3C CAN97-3C-10 58 - 60			
7,12-Dimethylbenz(a)anthracene	ND	(920)	[	.037]	ND	(930)	[	.037]	ND	(940)	[	.038]	ND	(900)	[	.036]
Acenaphthene	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(360)	[	.036]
Acenaphthylene	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(360)	[	.036]
Acetophenone	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(360)	[	.036]
Aniline	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(360)	[	.036]
Anthracene	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(360)	[	.036]
Benzidine	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(360)	[	.036]
Benzo(a)anthracene	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(360)	[	.036]
Benzo(a)pyrene	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(360)	[	.036]
Benzo(b)fluoranthene	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(360)	[	.036]
Benzo(g,h,i)perylene	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(360)	[	.036]
Benzo(k)fluoranthene	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(360)	[	.036]
Benzoic acid	ND	(1800)	[	.037]	ND	(1900)	[	.037]	ND	(1900)	[	.038]	ND	(1800)	[	.036]
Benzyl alcohol	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(360)	[	.036]
Butylbenzylphthalate	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(360)	[	.036]
Chrysene	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(360)	[	.036]
Di-n-octylphthalate	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(360)	[	.036]
Dibenz(a,h)anthracene	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(360)	[	.036]
Dibenz(a,j)acridine	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(360)	[	.036]
Dibenzofuran	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(360)	[	.036]
Dibutylphthalate	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(360)	[	.036]
Diethylphthalate	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(360)	[	.036]
Dimethylphenethylamine	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(360)	[	.036]
Dimethylphthalate	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(360)	[	.036]
Diphenylamine	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(360)	[	.036]
Ethyl methanesulfonate	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(360)	[	.036]
Fluoranthene	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(360)	[	.036]
Fluorene	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(360)	[	.036]
Hexachlorobenzene	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(360)	[	.036]

Compiled: 8 February 1994

() = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

	SITE ID																							
	LOCATION ID																							
	SAMPLE ID																							
	BEG. DEPTH - END DEPTH (FT.)																							
PARAMETER	NONE 3C CAN97-3C-07 43 - 45				NONE 3C CAN97-3C-08 48 - 50				NONE 3C CAN97-3C-09 53 - 55				NONE 3C CAN97-3C-10 58 - 60			
Hexachlorobutadiene	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(360)	[	.036]
Hexachlorocyclopentadiene	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(360)	[	.036]
Hexachloroethane	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(360)	[	.036]
Indeno(1,2,3-cd)pyrene	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(360)	[	.036]
Isophorone	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(360)	[	.036]
Methyl methanesulfonate	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(360)	[	.036]
N-Nitroso-di-n-butylamine	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(360)	[	.036]
N-Nitrosodimethylamine	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(360)	[	.036]
N-Nitrosodiphenylamine	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(360)	[	.036]
N-Nitrosodipropylamine	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(360)	[	.036]
N-Nitrosopiperidine	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(360)	[	.036]
Naphthalene	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(360)	[	.036]
Nitrobenzene	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(360)	[	.036]
Pentachlorobenzene	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(360)	[	.036]
Pentachloronitrobenzene	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(360)	[	.036]
Pentachlorophenol	ND	(1800)	[	.037]	ND	(1900)	[	.037]	ND	(1900)	[	.038]	ND	(1800)	[	.036]
Phenacetin	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(360)	[	.036]
Phenanthrene	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(360)	[	.036]
Phenol	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(360)	[	.036]
Pronamide	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(360)	[	.036]
Pyrene	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(360)	[	.036]
Pyridine	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(360)	[	.036]
Trichloropropene(s)	480	(0)	[	.037]	NA				NA				NA			
Unknown	180	(0)	[	.037]	330	(0)	[	.037]	220	(0)	[	.038]	470	(0)	[	.036]
Unknown alkene	55000	(0)	[	.037]	NA				NA				NA			
Unknown cyclic ether B	370	(0)	[	.037]	NA				NA				NA			
bis(2-Chloroethoxy)methane	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(360)	[	.036]
bis(2-Chloroethyl)ether	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(360)	[	.036]
bis(2-Chloroisopropyl)ether	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(380)	[	.038]	ND	(360)	[	.036]

Compiled: 8 F[illegible]y 1994 () = Reporting Limit [] = Factor [illegible] = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)														
	NONE 3C CAN97-3C-07 43 - 45			NONE 3C CAN97-3C-08 48 - 50			NONE 3C CAN97-3C-09 53 - 55			NONE 3C CAN97-3C-10 58 - 60		
bis(2-Ethylhexyl)phthalate	ND	(370)	[.037]	270 J	(370)	[.037]	21 J	(380)	[.038]	36 J	(360)	[.036]
p-Chloroaniline	ND	(370)	[.037]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(360)	[.036]
p-Dimethylaminoazobenzene	ND	(370)	[.037]	ND	(370)	[.037]	ND	(380)	[.038]	ND	(360)	[.036]

TABLE B1

RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID	LOCATION ID	SAMPLE ID	BEG. DEPTH - END DEPTH (FT.)												
	NONE	3C	CAN97-3C-11	63 - 65			NONE	3C	CAN97-3C-12	68 - 70			NONE	3C	CAN97-3C-13	71 - 73			NONE	4A	CAN97-4A-06	8 - 10		
EPA 418.1 - Total Recoverable Petroleum Hydrocarbons (mg/kg)																								
Hydrocarbons	ND		(26)	[5.234]	ND		(26)	[5.262]	ND		(26)	[5.279]	ND		(27)	[5.417]
SW8080 - Organochlorine Pesticides and PCBs (ug/kg)																								
4,4'-DDD	ND		(0.35)	[34.941]	ND		(0.35)	[35.162]	ND		(0.35)	[35.236]	0.41	GBQ	(0.36)	[36.101]
4,4'-DDE	ND		(0.35)	[34.941]	ND		(0.35)	[35.162]	ND		(0.35)	[35.236]	ND		(0.36)	[36.101]
4,4'-DDT	ND		(0.7)	[34.941]	ND		(0.7)	[35.162]	ND		(0.7)	[35.236]	0.53	J	(0.72)	[36.101]
Aldrin	ND		(0.35)	[34.941]	ND		(0.35)	[35.162]	ND		(0.35)	[35.236]	ND		(0.36)	[36.101]
Chlordane	ND		(1.7)	[34.941]	ND		(1.8)	[35.162]	ND		(1.8)	[35.236]	ND		(1.8)	[36.101]
Dieldrin	ND		(0.35)	[34.941]	ND		(0.35)	[35.162]	ND		(0.35)	[35.236]	ND		(0.36)	[36.101]
Endosulfan I	ND		(0.35)	[34.941]	ND		(0.35)	[35.162]	ND		(0.35)	[35.236]	ND		(0.36)	[36.101]
Endosulfan II	ND		(1)	[34.941]	ND		(1.1)	[35.162]	ND		(1.1)	[35.236]	ND		(1.1)	[36.101]
Endosulfan Sulfate	ND		(1.7)	[34.941]	ND		(1.8)	[35.162]	ND		(1.8)	[35.236]	ND		(1.8)	[36.101]
Endrin	ND		(0.35)	[34.941]	ND		(0.35)	[35.162]	ND		(0.35)	[35.236]	ND		(0.36)	[36.101]
Endrin Aldehyde	ND		(0.7)	[34.941]	ND		(0.7)	[35.162]	ND		(0.7)	[35.236]	ND		(0.72)	[36.101]
Endrin Ketone	ND		(1.7)	[34.941]	ND		(1.8)	[35.162]	ND		(1.8)	[35.236]	ND		(1.8)	[36.101]
Heptachlor	ND		(0.35)	[34.941]	ND		(0.35)	[35.162]	ND		(0.35)	[35.236]	0.11	J	(0.36)	[36.101]
Heptachlor epoxide	0.18	J	(0.35)	[34.941]	ND		(0.35)	[35.162]	0.19	J	(0.35)	[35.236]	ND		(0.36)	[36.101]
Methoxychlor	ND		(1.7)	[34.941]	ND		(1.8)	[35.162]	ND		(1.8)	[35.236]	ND		(1.8)	[36.101]
PCB-1016	ND		(3.5)	[34.941]	ND		(3.5)	[35.162]	ND		(3.5)	[35.236]	ND		(3.6)	[36.101]
PCB-1221	ND		(7)	[34.941]	ND		(7)	[35.162]	ND		(7)	[35.236]	ND		(7.2)	[36.101]
PCB-1232	ND		(7)	[34.941]	ND		(7)	[35.162]	ND		(7)	[35.236]	ND		(7.2)	[36.101]
PCB-1242	ND		(3.5)	[34.941]	ND		(3.5)	[35.162]	ND		(3.5)	[35.236]	ND		(3.6)	[36.101]
PCB-1248	ND		(3.5)	[34.941]	ND		(3.5)	[35.162]	ND		(3.5)	[35.236]	ND		(3.6)	[36.101]
PCB-1254	ND		(7)	[34.941]	ND		(7)	[35.162]	ND		(7)	[35.236]	ND		(7.2)	[36.101]
PCB-1260	ND		(7)	[34.941]	ND		(7)	[35.162]	ND		(7)	[35.236]	ND		(7.2)	[36.101]
Toxaphene	ND		(17)	[34.941]	ND		(18)	[35.162]	ND		(18)	[35.236]	ND		(18)	[36.101]
alpha-BHC	ND		(0.35)	[34.941]	ND		(0.35)	[35.162]	ND		(0.35)	[35.236]	ND		(0.36)	[36.101]
beta-BHC	ND		(0.35)	[34.941]	ND		(0.35)	[35.162]	ND		(0.35)	[35.236]	ND		(0.36)	[36.101]
delta-BHC	ND		(0.35)	[34.941]	ND		(0.35)	[35.162]	ND		(0.35)	[35.236]	ND		(0.36)	[36.101]

Compiled: 8 F ry 1994

() = Reporting Limit [] = Factor = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID	LOCATION ID	SAMPLE ID	BEG. DEPTH - END DEPTH (FT.)											
	NONE	3C	CAN97-3C-11	63 - 65			NONE	3C	CAN97-3C-12	68 - 70			NONE	3C	CAN97-3C-13	71 - 73			NONE	4A	CAN97-4A-06	8 - 10		
gamma-BHC	ND	(0.35)	[34.941]				ND	(0.35)	[35.162]				ND	(0.35)	[35.236]				ND	(0.36)	[36.101]			
SW8240 - Volatile Organics (ug/kg)																								
1,1,1-Trichloroethane	ND	(5.2)	[1.048]				ND	(5.3)	[1.054]				ND	(5.3)	[1.057]				ND	(5.4)	[1.084]			
1,1,2,2-Tetrachloroethane	ND	(5.2)	[1.048]				ND	(5.3)	[1.054]				ND	(5.3)	[1.057]				ND	(5.4)	[1.084]			
1,1,2-Trichloroethane	ND	(5.2)	[1.048]				ND	(5.3)	[1.054]				ND	(5.3)	[1.057]				ND	(5.4)	[1.084]			
1,1-Dichloroethane	ND	(5.2)	[1.048]				ND	(5.3)	[1.054]				ND	(5.3)	[1.057]				ND	(5.4)	[1.084]			
1,1-Dichloroethene	ND	(5.2)	[1.048]				ND	(5.3)	[1.054]				ND	(5.3)	[1.057]				ND	(5.4)	[1.084]			
1,2,3-Trichloropropane	ND	(5.2)	[1.048]				ND	(5.3)	[1.054]				ND	(5.3)	[1.057]				ND	(5.4)	[1.084]			
1,2-Dichloroethane	ND	(5.2)	[1.048]				ND	(5.3)	[1.054]				ND	(5.3)	[1.057]				ND	(5.4)	[1.084]			
1,2-Dichloropropane	ND	(5.2)	[1.048]				ND	(5.3)	[1.054]				ND	(5.3)	[1.057]				ND	(5.4)	[1.084]			
2-Chloroethyl vinyl ether	ND	(10)	[1.048]				ND	(11)	[1.054]				ND	(11)	[1.057]				ND	(11)	[1.084]			
2-Hexanone	ND	(52)	[1.048]				ND	(53)	[1.054]				ND	(53)	[1.057]				2.2	J (54)	[1.084]			
4-Methyl-2-pentanone(MIBK)	ND	(52)	[1.048]				ND	(53)	[1.054]				ND	(53)	[1.057]				ND	(54)	[1.084]			
Acetone	ND	(100)	[1.048]				ND	(110)	[1.054]				ND	(110)	[1.057]				ND	(110)	[1.084]			
Acrolein	ND	(79)	[1.048]				ND	(79)	[1.054]				ND	(79)	[1.057]				ND	(81)	[1.084]			
Acrylonitrile	ND	(52)	[1.048]				ND	(53)	[1.054]				ND	(53)	[1.057]				ND	(54)	[1.084]			
Benzene	ND	(5.2)	[1.048]				ND	(5.3)	[1.054]				ND	(5.3)	[1.057]				ND	(5.4)	[1.084]			
Bromodichloromethane	ND	(5.2)	[1.048]				ND	(5.3)	[1.054]				ND	(5.3)	[1.057]				ND	(5.4)	[1.084]			
Bromomethane	ND	(10)	[1.048]				ND	(11)	[1.054]				ND	(11)	[1.057]				ND	(11)	[1.084]			
Carbon disulfide	ND	(5.2)	[1.048]				ND	(5.3)	[1.054]				ND	(5.3)	[1.057]				ND	(5.4)	[1.084]			
Carbon tetrachloride	ND	(5.2)	[1.048]				ND	(5.3)	[1.054]				ND	(5.3)	[1.057]				ND	(5.4)	[1.084]			
Chlorobenzene	ND	(5.2)	[1.048]				ND	(5.3)	[1.054]				ND	(5.3)	[1.057]				ND	(5.4)	[1.084]			
Chloroethane	ND	(10)	[1.048]				ND	(11)	[1.054]				ND	(11)	[1.057]				ND	(11)	[1.084]			
Chloroform	ND	(5.2)	[1.048]				ND	(5.3)	[1.054]				ND	(5.3)	[1.057]				ND	(5.4)	[1.084]			
Chloromethane	ND	(10)	[1.048]				ND	(11)	[1.054]				ND	(11)	[1.057]				ND	(11)	[1.084]			
Decanal	7.3	()	[1.048]				6.3	()	[1.054]				5.3	()	[1.057]				NA					
Dibromochloromethane	ND	(5.2)	[1.048]				ND	(5.3)	[1.054]				ND	(5.3)	[1.057]				ND	(5.4)	[1.084]			
Dibromomethane	ND	(5.2)	[1.048]				ND	(5.3)	[1.054]				ND	(5.3)	[1.057]				ND	(5.4)	[1.084]			
Dichlorodifluoromethane	ND	(21)	[1.048]				ND	(21)	[1.054]				ND	(21)	[1.057]				ND	(22)	[1.084]			

Compiled: 8 February 1994 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B1

RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID	LOCATION ID	SAMPLE ID	BEG. DEPTH - END DEPTH (FT.)												
	NONE	3C	CAN97-3C-11	63 - 65	NONE	3C	CAN97-3C-12	68 - 70	NONE	3C	CAN97-3C-13	71 - 73	NONE	4A	CAN97-4A-06	8 - 10
Ethyl acetate	31	()	[1.048]		7.4	()	[1.054]		NA				NA			
Ethyl benzene	ND	(5.2)	[1.048]		ND	(5.3)	[1.054]		ND	(5.3)	[1.057]		ND	(5.4)	[1.084]	
Ethyl methacrylate	ND	(16)	[1.048]		ND	(16)	[1.054]		ND	(16)	[1.057]		ND	(16)	[1.084]	
Iodomethane	ND	(5.2)	[1.048]		ND	(5.3)	[1.054]		ND	(5.3)	[1.057]		ND	(5.4)	[1.084]	
Methyl ethyl ketone	ND	(100)	[1.048]		ND	(110)	[1.054]		ND	(110)	[1.057]		ND	(110)	[1.084]	
Methylene chloride	ND	(5.2)	[1.048]		ND	(5.3)	[1.054]		ND	(5.3)	[1.057]		4.2 J	(5.4)	[1.084]	
Nonanal	7.3	()	[1.048]		8.4	()	[1.054]		NA				NA			
Styrene	ND	(5.2)	[1.048]		ND	(5.3)	[1.054]		ND	(5.3)	[1.057]		ND	(5.4)	[1.084]	
Tetrachloroethene	ND	(5.2)	[1.048]		ND	(5.3)	[1.054]		ND	(5.3)	[1.057]		ND	(5.4)	[1.084]	
Toluene	ND	(5.2)	[1.048]		ND	(5.3)	[1.054]		ND	(5.3)	[1.057]		0.66 J	(5.4)	[1.084]	
Tribromomethane(Bromoform)	ND	(5.2)	[1.048]		ND	(5.3)	[1.054]		ND	(5.3)	[1.057]		ND	(5.4)	[1.084]	
Trichloroethene	ND	(5.2)	[1.048]		ND	(5.3)	[1.054]		ND	(5.3)	[1.057]		ND	(5.4)	[1.084]	
Trichlorofluoromethane	ND	(10)	[1.048]		ND	(11)	[1.054]		ND	(11)	[1.057]		ND	(11)	[1.084]	
Unknown	17	()	[1.048]		5.3	()	[1.054]		NA				NA			
Vinyl acetate	ND	(5.2)	[1.048]		ND	(5.3)	[1.054]		ND	(5.3)	[1.057]		ND	(5.4)	[1.084]	
Vinyl chloride	ND	(10)	[1.048]		ND	(11)	[1.054]		ND	(11)	[1.057]		ND	(11)	[1.084]	
Xylenes	ND	(5.2)	[1.048]		ND	(5.3)	[1.054]		ND	(5.3)	[1.057]		ND	(5.4)	[1.084]	
cis-1,3-Dichloropropene	ND	(5.2)	[1.048]		ND	(5.3)	[1.054]		ND	(5.3)	[1.057]		ND	(5.4)	[1.084]	
trans-1,2-Dichloroethene	ND	(5.2)	[1.048]		ND	(5.3)	[1.054]		ND	(5.3)	[1.057]		ND	(5.4)	[1.084]	
trans-1,3-Dichloropropene	ND	(5.2)	[1.048]		ND	(5.3)	[1.054]		ND	(5.3)	[1.057]		ND	(5.4)	[1.084]	
trans-1,4-Dichloro-2-butene	ND	(10)	[1.048]		ND	(11)	[1.054]		ND	(11)	[1.057]		ND	(11)	[1.084]	
SW8270 - Semivolatile Organics (ug/kg)																
1,2,4,5-Tetrachlorobenzene	ND	(350)	[.035]		ND	(350)	[.035]		ND	(350)	[.035]		ND	(360)	[.036]	
1,2,4-Trichlorobenzene	ND	(350)	[.035]		ND	(350)	[.035]		ND	(350)	[.035]		ND	(360)	[.036]	
1,2-Dichlorobenzene	ND	(350)	[.035]		ND	(350)	[.035]		ND	(350)	[.035]		ND	(360)	[.036]	
1,2-Diphenylhydrazine	ND	(350)	[.035]		ND	(350)	[.035]		ND	(350)	[.035]		ND	(360)	[.036]	
1,3-Dichlorobenzene	ND	(350)	[.035]		ND	(350)	[.035]		ND	(350)	[.035]		ND	(360)	[.036]	
1,4-Dichlorobenzene	ND	(350)	[.035]		ND	(350)	[.035]		ND	(350)	[.035]		ND	(360)	[.036]	
1-Chloronaphthalene	ND	(350)	[.035]		ND	(350)	[.035]		ND	(350)	[.035]		ND	(360)	[.036]	

Compiled: 8 F ry 1994

() = Reporting Limit [] = Factor = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)														
	NONE 3C CAN97-3C-11 63 - 65				NONE 3C CAN97-3C-12 68 - 70				NONE 3C CAN97-3C-13 71 - 73				NONE 4A CAN97-4A-06 8 - 10			
1-Naphthylamine	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
2,3,4,6-Tetrachlorophenol	ND	(700)	[	.035]	ND	(700)	[	.035]	ND	(700)	[	.035]	ND	(720)	[	.036]
2,4,5-Trichlorophenol	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
2,4,6-Trichlorophenol	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
2,4-Dichlorophenol	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
2,4-Dimethylphenol	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
2,4-Dinitrophenol	ND	(1700)	[	.035]	ND	(1800)	[	.035]	ND	(1800)	[	.035]	ND	(1800)	[	.036]
2,4-Dinitrotoluene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
2,6-Dichlorophenol	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
2,6-Dinitrotoluene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
2-Chloronaphthalene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
2-Chlorophenol	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
2-Methylnaphthalene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
2-Methylphenol(o-cresol)	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
2-Naphthylamine	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
2-Nitroaniline	ND	(1700)	[	.035]	ND	(1800)	[	.035]	ND	(1800)	[	.035]	ND	(1800)	[	.036]
2-Nitrophenol	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
2-Picoline	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
3,3'-Dichlorobenzidine	ND	(700)	[	.035]	ND	(700)	[	.035]	ND	(700)	[	.035]	ND	(720)	[	.036]
3-Methylcholanthrene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
3-Nitroaniline	ND	(1700)	[	.035]	ND	(1800)	[	.035]	ND	(1800)	[	.035]	ND	(1800)	[	.036]
4,6-Dinitro-2-methylphenol	ND	(1700)	[	.035]	ND	(1800)	[	.035]	ND	(1800)	[	.035]	ND	(1800)	[	.036]
4-Aminobiphenyl	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
4-Bromophenyl phenyl ether	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
4-Chloro-3-methylphenol	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
4-Chlorophenyl phenyl ether	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
4-Methylphenol(p-cresol)	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
4-Nitroaniline	ND	(1700)	[	.035]	ND	(1800)	[	.035]	ND	(1800)	[	.035]	ND	(1800)	[	.036]
4-Nitrophenol	ND	(1700)	[	.035]	ND	(1800)	[	.035]	ND	(1800)	[	.035]	ND	(1800)	[	.036]

Compiled: 8 February 1994 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B1

RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID	LOCATION ID	SAMPLE ID	BEG. DEPTH - END DEPTH (FT.)												
	NONE	3C	CAN97-3C-11	63 - 65			NONE	3C	CAN97-3C-12	68 - 70			NONE	3C	CAN97-3C-13	71 - 73			NONE	4A	CAN97-4A-06	8 - 10		
7,12-Dimethylbenz(a)anthracene	ND	(870)	[	.035]	ND	(880)	[	.035]	ND	(880)	[	.035]	ND	(900)	[	.036]
Acenaphthene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Acenaphthylene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Acetophenone	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Aniline	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Anthracene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Benzidine	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Benzo(a)anthracene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Benzo(a)pyrene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Benzo(b)fluoranthene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Benzo(g,h,i)perylene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Benzo(k)fluoranthene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Benzoic acid	ND	(1700)	[	.035]	ND	(1800)	[	.035]	ND	(1800)	[	.035]	ND	(1800)	[	.036]
Benzyl alcohol	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Butylbenzylphthalate	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Chrysene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Cyclohexanol	NA				420	(0)	[	.035]	NA				NA			
Cyclohexene B	NA				NA				46000	(0)	[	.035]	NA			
Cyclohexenol	NA				NA				280	(0)	[	.035]	NA			
Cyclohexenone	NA				280	(0)	[	.035]	180	(0)	[	.035]	NA			
Di-n-octylphthalate	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Dibenz(a,h)anthracene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Dibenz(a,j)acridine	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Dibenzofuran	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Dibutylphthalate	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Diethylphthalate	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Dimethylphenethylamine	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Dimethylphthalate	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Diphenylamine	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]

Compiled: 8 Fe[illegible]y 1994

() = Reporting Limit [] = Factor - Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)															
	NONE 3C CAN97-3C-11 63 - 65				NONE 3C CAN97-3C-12 68 - 70				NONE 3C CAN97-3C-13 71 - 73				NONE 4A CAN97-4A-06 8 - 10			
Ethyl methanesulfonate	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Fluoranthene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Fluorene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Hexachlorobenzene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Hexachlorobutadiene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Hexachlorocyclopentadiene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Hexachloroethane	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Indeno(1,2,3-cd)pyrene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Isophorone	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Methyl methanesulfonate	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
N-Nitroso-di-n-butylamine	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
N-Nitrosodimethylamine	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
N-Nitrosodiphenylamine	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
N-Nitrosodipropylamine	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
N-Nitrosopiperidine	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Naphthalene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Nitrobenzene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Pentachlorobenzene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Pentachloronitrobenzene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Pentachlorophenol	ND	(1700)	[	.035]	ND	(1800)	[	.035]	ND	(1800)	[	.035]	ND	(1800)	[	.036]
Phenacetin	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Phenanthrene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Phenol	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Pronamide	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Pyrene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Pyridine	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Trichloropropene(s)	420	(0)	[	.035]	390	(0)	[	.035]	NA				NA			
Unknown	210	(0)	[	.035]	1200	(0)	[	.035]	1400	(0)	[	.035]	180	(0)	[	.036]
Unknown alkene	45000	(0)	[	.035]	46000	(0)	[	.035]	NA				NA			

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TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)																
	NONE 3C CAN97-3C-11 63 - 65				NONE 3C CAN97-3C-12 68 - 70				NONE 3C CAN97-3C-13 71 - 73				NONE 4A CAN97-4A-06 8 - 10			
Unknown cyclic ether B	240	(0)	[	.035]	2000	(0)	[	.035]	NA				NA			
bis(2-Chloroethoxy)methane	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
bis(2-Chloroethyl)ether	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
bis(2-Chloroisopropyl)ether	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
bis(2-Ethylhexyl)phthalate	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
p-Chloroaniline	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
p-Dimethylaminoazobenzene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]

TABLE BI

RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 4A CAN97-4A-I 4 - 5			NONE 4A CAN97-4A-S 0.5 - 1			NONE 4A CAN97-4A-99 Dup of CAN97-4A-S 0.5 - 1			NONE 4B CAN97-4B-06 8 - 10		
EPA 418.1 - Total Recoverable Petroleum Hydrocarbons (mg/kg)												
Hydrocarbons	ND	(27)	[5.441]	3.8 @	(26)	[5.297]	ND	(27)	[5.319]	38 @	(27)	[5.359]
SW8015 - Total Petroleum Hydrocarbons (ug/kg)												
Benzene (2)	ND	(31)	[102.000]	NA			NA			NA		
Diesel (2)	3700 J	(5400)	[108.696]	NA			NA			NA		
Ethylbenzene (2)	ND	(31)	[102.000]	NA			NA			NA		
Gasoline (2)	ND	(5100)	[102.000]	NA			NA			NA		
Jet fuel (2)	ND	(11000)	[108.696]	NA			NA			NA		
Kerosene (2)	ND	(11000)	[108.696]	NA			NA			NA		
Toluene (2)	ND	(31)	[102.000]	NA			NA			NA		
Xylenes (total) (2)	ND	(51)	[102.000]	NA			NA			NA		
SW8080 - Organochlorine Pesticides and PCBs (ug/kg)												
4,4'-DDD	0.39 GB@	(0.36)	[36.219]	0.43 GB@	(0.35)	[35.273]	ND	(0.35)	[35.411]	0.4 G@	(0.36)	[35.714]
4,4'-DDE	0.097 J	(0.36)	[36.219]	0.5 @	(0.35)	[35.273]	1.2 @	(0.35)	[35.411]	0.059 J	(0.36)	[35.714]
4,4'-DDT	0.4 J	(0.72)	[36.219]	1.6 @	(0.71)	[35.273]	0.84 @	(0.71)	[35.411]	0.46 J	(0.71)	[35.714]
Aldrin	ND	(0.36)	[36.219]	1.2 G@	(0.35)	[35.273]	1.3 G@	(0.35)	[35.411]	ND	(0.36)	[35.714]
Chlordane	ND	(1.8)	[36.219]	ND	(1.8)	[35.273]	ND	(1.8)	[35.411]	ND	(1.8)	[35.714]
Dieldrin	ND	(0.36)	[36.219]	0.15 J	(0.35)	[35.273]	ND	(0.35)	[35.411]	ND	(0.36)	[35.714]
Endosulfan I	ND	(0.36)	[36.219]	ND	(0.35)	[35.273]	0.2 J	(0.35)	[35.411]	ND	(0.36)	[35.714]
Endosulfan II	ND	(1.1)	[36.219]	ND	(1.1)	[35.273]	ND	(1.1)	[35.411]	ND	(1.1)	[35.714]
Endosulfan Sulfate	ND	(1.8)	[36.219]	ND	(1.8)	[35.273]	ND	(1.8)	[35.411]	ND	(1.8)	[35.714]
Endrin	ND	(0.36)	[36.219]	ND	(0.35)	[35.273]	ND	(0.35)	[35.411]	0.13 J	(0.36)	[35.714]
Endrin Aldehyde	ND	(0.72)	[36.219]	ND	(0.71)	[35.273]	ND	(0.71)	[35.411]	ND	(0.71)	[35.714]
Endrin Ketone	ND	(1.8)	[36.219]	0.0084 J	(1.8)	[35.273]	ND	(1.8)	[35.411]	ND	(1.8)	[35.714]
Heptachlor	0.041 J	(0.36)	[36.219]	ND	(0.35)	[35.273]	ND	(0.35)	[35.411]	0.057 J	(0.36)	[35.714]
Heptachlor epoxide	ND	(0.36)	[36.219]	0.7 GB@	(0.35)	[35.273]	0.86 GB@	(0.35)	[35.411]	ND	(0.36)	[35.714]
Methoxychlor	ND	(1.8)	[36.219]	ND	(1.8)	[35.273]	ND	(1.8)	[35.411]	ND	(1.8)	[35.714]
PCB-1016	ND	(3.6)	[36.219]	ND	(3.5)	[35.273]	ND	(3.5)	[35.411]	ND	(3.6)	[35.714]
PCB-1221	ND	(7.2)	[36.219]	ND	(7.1)	[35.273]	ND	(7.1)	[35.411]	ND	(7.1)	[35.714]

Compiled: 8 February 1994

() = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B1

RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 4A CAN97-4A-I 4 - 6			NONE 4A CAN97-4A-S 0.5 - 1			NONE 4A CAN97-4A-99 Dup of CAN97-4A-S 0.5 - 1			NONE 4B CAN97-4B-06 8 - 10		
PCB-1232	ND	(7.2)	[36.219]	ND	(7.1)	[35.273]	ND	(7.1)	[35.411]	ND	(7.1)	[35.714]
PCB-1242	ND	(3.6)	[36.219]	ND	(3.5)	[35.273]	ND	(3.5)	[35.411]	ND	(3.6)	[35.714]
PCB-1248	ND	(3.6)	[36.219]	ND	(3.5)	[35.273]	ND	(3.5)	[35.411]	ND	(3.6)	[35.714]
PCB-1254	ND	(7.2)	[36.219]	ND	(7.1)	[35.273]	ND	(7.1)	[35.411]	ND	(7.1)	[35.714]
PCB-1260	ND	(7.2)	[36.219]	ND	(7.1)	[35.273]	ND	(7.1)	[35.411]	ND	(7.1)	[35.714]
Toxaphene	ND	(18)	[36.219]	ND	(18)	[35.273]	ND	(18)	[35.411]	ND	(18)	[35.714]
alpha-BHC	ND	(0.36)	[36.219]	ND	(0.35)	[35.273]	ND	(0.35)	[35.411]	ND	(0.36)	[35.714]
beta-BHC	ND	(0.36)	[36.219]	ND	(0.35)	[35.273]	ND	(0.35)	[35.411]	ND	(0.36)	[35.714]
delta-BHC	ND	(0.36)	[36.219]	0.54 @	(0.35)	[35.273]	0.97 @	(0.35)	[35.411]	ND	(0.36)	[35.714]
gamma-BHC	ND	(0.36)	[36.219]	3.5 G	(0.35)	[35.273]	ND	(0.35)	[35.411]	ND	(0.36)	[35.714]
SW8150 - Chlorinated Herbicides (ug/kg)												
2,4,5-T	ND	(7.2)	[36.193]	NA			NA			NA		
2,4,5-TP (Silvex)	ND	(6.2)	[36.193]	NA			NA			NA		
2,4-D	ND	(43)	[36.193]	NA			NA			NA		
2,4-DB	ND	(33)	[36.193]	NA			NA			NA		
Dalapon	ND	(210)	[36.193]	NA			NA			NA		
Dicamba	ND	(9.8)	[36.193]	NA			NA			NA		
Dichloroprop	ND	(24)	[36.193]	NA			NA			NA		
Dinoseb	ND	(5.4)	[36.193]	NA			NA			NA		
MCPA	ND	(9000)	[36.193]	NA			NA			NA		
MCPP	ND	(6900)	[36.193]	NA			NA			NA		
SW8240 - Volatile Organics (ug/kg)												
1,1,1-Trichloroethane	ND	(5.3)	[1.053]	ND	(5.3)	[1.059]	ND	(5.3)	[1.064]	ND	(5.4)	[1.072]
1,1,2,2-Tetrachloroethane	ND	(5.3)	[1.053]	ND	(5.3)	[1.059]	ND	(5.3)	[1.064]	ND	(5.4)	[1.072]
1,1,2-Trichloroethane	ND	(5.3)	[1.053]	ND	(5.3)	[1.059]	ND	(5.3)	[1.064]	ND	(5.4)	[1.072]
1,1-Dichloroethane	ND	(5.3)	[1.053]	ND	(5.3)	[1.059]	ND	(5.3)	[1.064]	ND	(5.4)	[1.072]
1,1-Dichloroethene	ND	(5.3)	[1.053]	ND	(5.3)	[1.059]	ND	(5.3)	[1.064]	ND	(5.4)	[1.072]
1,2,3-Trichloropropane	ND	(5.3)	[1.053]	ND	(5.3)	[1.059]	ND	(5.3)	[1.064]	ND	(5.4)	[1.072]
1,2-Dichloroethane	ND	(5.3)	[1.053]	ND	(5.3)	[1.059]	ND	(5.3)	[1.064]	ND	(5.4)	[1.072]

Compiled: 8 F ry 1994

() = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 4A CAN97-4A-I 4 - 6			NONE 4A CAN97-4A-S 0.5 - 1			NONE 4A CAN97-4A-99 Dup of CAN97-4A-S 0.5 - 1			NONE 4B CAN97-4B-06 8 - 10		
1,2-Dichloropropane	ND	(5.3)	[1.053]	ND	(5.3)	[1.059]	ND	(5.3)	[1.064]	ND	(5.4)	[1.072]
2-Chloroethyl vinyl ether	ND	(11)	[1.053]	ND	(11)	[1.059]	ND	(11)	[1.064]	ND	(11)	[1.072]
2-Hexanone	ND	(53)	[1.053]	ND	(53)	[1.059]	ND	(53)	[1.064]	ND	(54)	[1.072]
4-Methyl-2-pentanone(MIBK)	ND	(53)	[1.053]	ND	(53)	[1.059]	ND	(53)	[1.064]	ND	(54)	[1.072]
Acetone	780	(110)	[1.053]	ND	(110)	[1.059]	ND	(110)	[1.064]	ND	(110)	[1.072]
Acrolein	ND	(79)	[1.053]	ND	(79)	[1.059]	ND	(80)	[1.064]	ND	(80)	[1.072]
Acrylonitrile	ND	(53)	[1.053]	ND	(53)	[1.059]	ND	(53)	[1.064]	ND	(54)	[1.072]
Benzene	ND	(5.3)	[1.053]	ND	(5.3)	[1.059]	ND	(5.3)	[1.064]	ND	(5.4)	[1.072]
Bromodichloromethane	ND	(5.3)	[1.053]	ND	(5.3)	[1.059]	ND	(5.3)	[1.064]	ND	(5.4)	[1.072]
Bromomethane	ND	(11)	[1.053]	ND	(11)	[1.059]	ND	(11)	[1.064]	ND	(11)	[1.072]
Carbon disulfide	ND	(5.3)	[1.053]	ND	(5.3)	[1.059]	ND	(5.3)	[1.064]	ND	(5.4)	[1.072]
Carbon tetrachloride	ND	(5.3)	[1.053]	ND	(5.3)	[1.059]	ND	(5.3)	[1.064]	ND	(5.4)	[1.072]
Chlorobenzene	ND	(5.3)	[1.053]	ND	(5.3)	[1.059]	ND	(5.3)	[1.064]	ND	(5.4)	[1.072]
Chloroethane	ND	(11)	[1.053]	ND	(11)	[1.059]	ND	(11)	[1.064]	ND	(11)	[1.072]
Chloroform	ND	(5.3)	[1.053]	ND	(5.3)	[1.059]	ND	(5.3)	[1.064]	ND	(5.4)	[1.072]
Chloromethane	ND	(11)	[1.053]	ND	(11)	[1.059]	ND	(11)	[1.064]	ND	(11)	[1.072]
Decanal B	NA			NA			NA			5.4	()	[1.072]
Dibromochloromethane	ND	(5.3)	[1.053]	ND	(5.3)	[1.059]	ND	(5.3)	[1.064]	ND	(5.4)	[1.072]
Dibromomethane	ND	(5.3)	[1.053]	ND	(5.3)	[1.059]	ND	(5.3)	[1.064]	ND	(5.4)	[1.072]
Dichlorodifluoromethane	ND	(21)	[1.053]	ND	(21)	[1.059]	ND	(21)	[1.064]	ND	(21)	[1.072]
Ethyl benzene	ND	(5.3)	[1.053]	ND	(5.3)	[1.059]	ND	(5.3)	[1.064]	ND	(5.4)	[1.072]
Ethyl methacrylate	ND	(16)	[1.053]	ND	(16)	[1.059]	ND	(16)	[1.064]	ND	(16)	[1.072]
Iodomethane	ND	(5.3)	[1.053]	ND	(5.3)	[1.059]	ND	(5.3)	[1.064]	ND	(5.4)	[1.072]
Methyl ethyl ketone	ND	(110)	[1.053]	ND	(110)	[1.059]	ND	(110)	[1.064]	ND	(110)	[1.072]
Methylene chloride	ND	(5.3)	[1.053]	ND	(5.3)	[1.059]	3.8 J	(5.3)	[1.064]	ND	(5.4)	[1.072]
Styrene	ND	(5.3)	[1.053]	ND	(5.3)	[1.059]	ND	(5.3)	[1.064]	ND	(5.4)	[1.072]
Tetrachloroethene	ND	(5.3)	[1.053]	ND	(5.3)	[1.059]	ND	(5.3)	[1.064]	ND	(5.4)	[1.072]
Toluene	ND	(5.3)	[1.053]	0.86 J	(5.3)	[1.059]	1.3 J	(5.3)	[1.064]	ND	(5.4)	[1.072]
Tribromomethane(Bromoform)	ND	(5.3)	[1.053]	ND	(5.3)	[1.059]	ND	(5.3)	[1.064]	ND	(5.4)	[1.072]

Compiled: 8 February 1994 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID	LOCATION ID	SAMPLE ID	BEG. DEPTH - END DEPTH (FT.)												
	NONE	4A	CAN97-4A-1	4 - 6	NONE	4A	CAN97-4A-S	0.5 - 1	NONE	4A	CAN97-4A-99 Dup of CAN97-4A-S	0.5 - 1	NONE	4B	CAN97-4B-06	8 - 10
Trichloroethene	ND	(5.3)	[1.053]		ND	(5.3)	[1.059]		ND	(5.3)	[1.064]		ND	(5.4)	[1.072]	
Trichlorofluoromethane	ND	(11)	[1.053]		ND	(11)	[1.059]		ND	(11)	[1.064]		ND	(11)	[1.072]	
Unknown	44	()	[1.053]		NA				NA				9.6	()	[1.072]	
Vinyl acetate	ND	(5.3)	[1.053]		ND	(5.3)	[1.059]		ND	(5.3)	[1.064]		ND	(5.4)	[1.072]	
Vinyl chloride	ND	(11)	[1.053]		ND	(11)	[1.059]		ND	(11)	[1.064]		ND	(11)	[1.072]	
Xylenes	ND	(5.3)	[1.053]		ND	(5.3)	[1.059]		ND	(5.3)	[1.064]		ND	(5.4)	[1.072]	
cis-1,3-Dichloropropene	ND	(5.3)	[1.053]		ND	(5.3)	[1.059]		ND	(5.3)	[1.064]		ND	(5.4)	[1.072]	
trans-1,2-Dichloroethene	ND	(5.3)	[1.053]		ND	(5.3)	[1.059]		ND	(5.3)	[1.064]		ND	(5.4)	[1.072]	
trans-1,3-Dichloropropene	ND	(5.3)	[1.053]		ND	(5.3)	[1.059]		ND	(5.3)	[1.064]		ND	(5.4)	[1.072]	
trans-1,4-Dichloro-2-butene	ND	(11)	[1.053]		ND	(11)	[1.059]		ND	(11)	[1.064]		ND	(11)	[1.072]	
SW8270 - Semivolatile Organics (ug/kg)																
1,2,4,5-Tetrachlorobenzene	ND	(360)	[.036]		ND	(350)	[.035]		ND	(350)	[.035]		ND	(360)	[.036]	
1,2,4-Trichlorobenzene	ND	(360)	[.036]		ND	(350)	[.035]		ND	(350)	[.035]		ND	(360)	[.036]	
1,2-Dichlorobenzene	ND	(360)	[.036]		ND	(350)	[.035]		ND	(350)	[.035]		ND	(360)	[.036]	
1,2-Diphenylhydrazine	ND	(360)	[.036]		ND	(350)	[.035]		ND	(350)	[.035]		ND	(360)	[.036]	
1,3-Dichlorobenzene	ND	(360)	[.036]		ND	(350)	[.035]		ND	(350)	[.035]		ND	(360)	[.036]	
1,4-Dichlorobenzene	ND	(360)	[.036]		ND	(350)	[.035]		ND	(350)	[.035]		ND	(360)	[.036]	
1-Chloronaphthalene	ND	(360)	[.036]		ND	(350)	[.035]		ND	(350)	[.035]		ND	(360)	[.036]	
1-Naphthylamine	ND	(360)	[.036]		ND	(350)	[.035]		ND	(350)	[.035]		ND	(360)	[.036]	
2,3,4,6-Tetrachlorophenol	ND	(730)	[.036]		ND	(710)	[.035]		ND	(710)	[.035]		ND	(710)	[.036]	
2,4,5-Trichlorophenol	ND	(360)	[.036]		ND	(350)	[.035]		ND	(350)	[.035]		ND	(360)	[.036]	
2,4,6-Trichlorophenol	ND	(360)	[.036]		ND	(350)	[.035]		ND	(350)	[.035]		ND	(360)	[.036]	
2,4-Dichlorophenol	ND	(360)	[.036]		ND	(350)	[.035]		ND	(350)	[.035]		ND	(360)	[.036]	
2,4-Dimethylphenol	ND	(360)	[.036]		ND	(350)	[.035]		ND	(350)	[.035]		ND	(360)	[.036]	
2,4-Dinitrophenol	ND	(1800)	[.036]		ND	(1800)	[.035]		ND	(1800)	[.035]		ND	(1800)	[.036]	
2,4-Dinitrotoluene	ND	(360)	[.036]		ND	(350)	[.035]		ND	(350)	[.035]		ND	(360)	[.036]	
2,6-Dichlorophenol	ND	(360)	[.036]		ND	(350)	[.035]		ND	(350)	[.035]		ND	(360)	[.036]	
2,6-Dinitrotoluene	ND	(360)	[.036]		ND	(350)	[.035]		ND	(350)	[.035]		ND	(360)	[.036]	
2-Chloronaphthalene	ND	(360)	[.036]		ND	(350)	[.035]		ND	(350)	[.035]		ND	(360)	[.036]	

Compiled: 8 Fe y 1994 () = Reporting Limit [] = Factor Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)																
	NONE 4A CAN97-4A-I 4 - 6				NONE 4A CAN97-4A-S 0.5 - 1				NONE 4A CAN97-4A-99 Dup of CAN97-4A-S 0.5 - 1				NONE 4B CAN97-4B-06 8 - 10			
2-Chlorophenol	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
2-Methylnaphthalene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
2-Methylphenol(o-cresol)	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
2-Naphthylamine	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
2-Nitroaniline	ND	(1800)	[	.036]	ND	(1800)	[	.035]	ND	(1800)	[	.035]	ND	(1800)	[	.036]
2-Nitrophenol	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
2-Picoline	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
3,3'-Dichlorobenzidine	ND	(730)	[	.036]	ND	(710)	[	.035]	ND	(710)	[	.035]	ND	(710)	[	.036]
3-Methylcholanthrene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
3-Nitroaniline	ND	(1800)	[	.036]	ND	(1800)	[	.035]	ND	(1800)	[	.035]	ND	(1800)	[	.036]
4,6-Dinitro-2-methylphenol	ND	(1800)	[	.036]	ND	(1800)	[	.035]	ND	(1800)	[	.035]	ND	(1800)	[	.036]
4-Aminobiphenyl	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
4-Bromophenyl phenyl ether	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
4-Chloro-3-methylphenol	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
4-Chlorophenyl phenyl ether	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
4-Methylphenol(p-cresol)	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
4-Nitroaniline	ND	(1800)	[	.036]	ND	(1800)	[	.035]	ND	(1800)	[	.035]	ND	(1800)	[	.036]
4-Nitrophenol	ND	(1800)	[	.036]	ND	(1800)	[	.035]	ND	(1800)	[	.035]	ND	(1800)	[	.036]
7,12-Dimethylbenz(a)anthracene	ND	(910)	[	.036]	ND	(880)	[	.035]	ND	(890)	[	.035]	ND	(890)	[	.036]
Acenaphthene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Acenaphthylene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Acetophenone	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Aniline	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Anthracene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Benzidine	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Benzo(a)anthracene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Benzo(a)pyrene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Benzo(b)fluoranthene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Benzo(g,h,i)perylene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]

Compiled: 8 February 1994 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B1

RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID																							
	LOCATION ID	NONE				NONE				NONE				NONE										
	SAMPLE ID	4A				4A				4A				4B										
		CAN97-4A-I				CAN97-4A-S				CAN97-4A-99 Dup of CAN97-4A-S				CAN97-4B-06										
	BEG. DEPTH - END DEPTH (FT.)	4 - 6				0.5 - 1				0.5 - 1				8 - 10										
Benzo(k)fluoranthene		ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]							
Benzoic acid		ND	(1800)	[	.036]	ND	(1800)	[	.035]	ND	(1800)	[	.035]	ND	(1800)	[	.036]							
Benzyl alcohol		ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]							
Butylbenzylphthalate		ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]							
Chrysene		ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]							
Cyclohexenone		NA				180	(0)	[	.035]	NA				NA										
Di-n-octylphthalate		ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]							
Dibenz(a,h)anthracene		ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]							
Dibenz(a,j)acridine		ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]							
Dibenzofuran		ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]							
Dibutylphthalate		ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]							
Diethylphthalate		ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]							
Dimethylphenethylamine		ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]							
Dimethylphthalate		ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]							
Diphenylamine		ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]							
Ethyl methanesulfonate		ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]							
Fluoranthene		ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]							
Fluorene		ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]							
Hexachlorobenzene		ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]							
Hexachlorobutadiene		ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]							
Hexachlorocyclopentadiene		ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]							
Hexachloroethane		ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]							
Indeno(1,2,3-cd)pyrene		ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]							
Isophorone		ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]							
Methyl methanesulfonate		ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]							
N-Nitroso-di-n-butylamine		ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]							
N-Nitrosodimethylamine		ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]							
N-Nitrosodiphenylamine		ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]							
N-Nitrosodipropylamine		ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]							

Compiled: 8 Fe[illegible]y 1994

() = Reporting Limit [] = Factor [illegible] = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 4A CAN97-4A-I 4 - 6			NONE 4A CAN97-4A-S 0.5 - 1			NONE 4A CAN97-4A-99 Dup of CAN97-4A-S 0.5 - 1			NONE 4B CAN97-4B-06 8 - 10		
N-Nitrosopiperidine	ND	(360)	[.036]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
Naphthalene	ND	(360)	[.036]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
Nitrobenzene	ND	(360)	[.036]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
Pentachlorobenzene	ND	(360)	[.036]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
Pentachloronitrobenzene	ND	(360)	[.036]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
Pentachlorophenol	ND	(1800)	[.036]	ND	(1800)	[.035]	ND	(1800)	[.035]	ND	(1800)	[.036]
Phenacetin	ND	(360)	[.036]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
Phenanthrene	ND	(360)	[.036]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
Phenol	ND	(360)	[.036]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
Pronamide	ND	(360)	[.036]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
Pyrene	ND	(360)	[.036]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
Pyridine	ND	(360)	[.036]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
Trichloropropene(s)	NA			NA			NA			280	(0)	[.036]
Unknown	360	(0)	[.036]	210	(0)	[.035]	280	(0)	[.035]	210	(0)	[.036]
Unknown cyclic ether	NA			NA			NA			680	(0)	[.036]
bis(2-Chloroethoxy)methane	ND	(360)	[.036]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
bis(2-Chloroethyl)ether	ND	(360)	[.036]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
bis(2-Chloroisopropyl)ether	ND	(360)	[.036]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
bis(2-Ethylhexyl)phthalate	ND	(360)	[.036]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
p-Chloroaniline	ND	(360)	[.036]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
p-Dimethylaminoazobenzene	ND	(360)	[.036]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]

TABLE 81 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	NONE 4B CAN97-4B-I 4 - 6			NONE 4B CAN97-4B-S 0 - 2			NONE 8A CAN97-8A-06 8 - 10			NONE 8A CAN97-8A-I 4 - 6		
EPA 418.1 - Total Recoverable Petroleum Hydrocarbons (mg/kg)												
Hydrocarbons	29 @	(27)	[5.366]	85 @	(26)	[5.244]	30 @	(28)	[5.545]	39 @	(27)	[5.412]
SW8015 - Total Petroleum Hydrocarbons (ug/kg)												
Benzene (2)	ND	(32)	[107.000]	NA			NA			4.8 J	(33)	[109.000]
Diesel (2)	7200 G@@	(5400)	[107.527]	NA			NA			4300 J	(5500)	[109.529]
Ethylbenzene (2)	ND	(32)	[107.000]	NA			NA			12 J	(33)	[109.000]
Gasoline (2)	ND	(5400)	[107.000]	NA			NA			ND	(5400)	[109.000]
Jet fuel (2)	ND	(11000)	[107.527]	NA			NA			ND	(11000)	[109.529]
Kerosene (2)	ND	(11000)	[107.527]	NA			NA			ND	(11000)	[109.529]
Toluene (2)	8.3 J	(32)	[107.000]	NA			NA			17 J	(33)	[109.000]
Xylenes (total) (2)	6.5 J	(54)	[107.000]	NA			NA			33 J	(54)	[109.000]
SW8080 - Organochlorine Pesticides and PCBs (ug/kg)												
4,4'-DDD	ND	(0.36)	[35.842]	ND	(3.5)	[349.773]	ND	(0.37)	[37.161]	0.028 J	(0.37)	[36.510]
4,4'-DDE	ND	(0.36)	[35.842]	6.1 @	(3.5)	[349.773]	ND	(0.37)	[37.161]	17	(0.37)	[36.510]
4,4'-DDT	0.41 J	(0.72)	[35.842]	3.8 J	(7)	[349.773]	0.62 J	(0.74)	[37.161]	8.4	(0.73)	[36.510]
Aldrin	ND	(0.36)	[35.842]	ND	(3.5)	[349.773]	ND	(0.37)	[37.161]	ND	(0.37)	[36.510]
Chlordane	ND	(1.8)	[35.842]	ND	(17)	[349.773]	ND	(1.9)	[37.161]	ND	(1.8)	[36.510]
Dieldrin	ND	(0.36)	[35.842]	ND	(3.5)	[349.773]	ND	(0.37)	[37.161]	ND	(0.37)	[36.510]
Endosulfan I	ND	(0.36)	[35.842]	ND	(3.5)	[349.773]	ND	(0.37)	[37.161]	ND	(0.37)	[36.510]
Endosulfan II	ND	(1.1)	[35.842]	ND	(10)	[349.773]	ND	(1.1)	[37.161]	ND	(1.1)	[36.510]
Endosulfan Sulfate	ND	(1.8)	[35.842]	ND	(17)	[349.773]	ND	(1.9)	[37.161]	ND	(1.8)	[36.510]
Endrin	ND	(0.36)	[35.842]	ND	(3.5)	[349.773]	ND	(0.37)	[37.161]	ND	(0.37)	[36.510]
Endrin Aldehyde	0.07 J	(0.72)	[35.842]	ND	(7)	[349.773]	ND	(0.74)	[37.161]	ND	(0.73)	[36.510]
Endrin Ketone	ND	(1.8)	[35.842]	ND	(17)	[349.773]	ND	(1.9)	[37.161]	ND	(1.8)	[36.510]
Heptachlor	ND	(0.36)	[35.842]	ND	(3.5)	[349.773]	0.16 J	(0.37)	[37.161]	ND	(0.37)	[36.510]
Heptachlor epoxide	ND	(0.36)	[35.842]	ND	(3.5)	[349.773]	9.6 G	(0.37)	[37.161]	ND	(0.37)	[36.510]
Methoxychlor	ND	(1.8)	[35.842]	ND	(17)	[349.773]	ND	(1.9)	[37.161]	ND	(1.8)	[36.510]
PCB-1016	ND	(3.6)	[35.842]	ND	(35)	[349.773]	ND	(3.7)	[37.161]	ND	(3.7)	[36.510]
PCB-1221	ND	(7.2)	[35.842]	ND	(70)	[349.773]	ND	(7.4)	[37.161]	ND	(7.3)	[36.510]

Compiled: 8 Fe ry 1994 () = Reporting Limit [] = Factor = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)														
	NONE 4B CAN97-4B-1 4 - 6			NONE 4B CAN97-4B-S 0 - 2			NONE 8A CAN97-8A-06 8 - 10			NONE 8A CAN97-8A-1 4 - 6					
PCB-1232	ND	(7.2)	[35.842]	ND	(70)	[349.773]	ND	(7.4)	[37.161]	ND	(7.3)	[36.510]			
PCB-1242	ND	(3.6)	[35.842]	ND	(35)	[349.773]	ND	(3.7)	[37.161]	ND	(3.7)	[36.510]			
PCB-1248	ND	(3.6)	[35.842]	ND	(35)	[349.773]	ND	(3.7)	[37.161]	ND	(3.7)	[36.510]			
PCB-1254	ND	(7.2)	[35.842]	ND	(70)	[349.773]	ND	(7.4)	[37.161]	ND	(7.3)	[36.510]			
PCB-1260	ND	(7.2)	[35.842]	ND	(70)	[349.773]	ND	(7.4)	[37.161]	ND	(7.3)	[36.510]			
Toxaphene	ND	(18)	[35.842]	ND	(170)	[349.773]	ND	(19)	[37.161]	ND	(18)	[36.510]			
alpha-BHC	ND	(0.36)	[35.842]	ND	(3.5)	[349.773]	ND	(0.37)	[37.161]	ND	(0.37)	[36.510]			
beta-BHC	ND	(0.36)	[35.842]	ND	(3.5)	[349.773]	ND	(0.37)	[37.161]	ND	(0.37)	[36.510]			
delta-BHC	ND	(0.36)	[35.842]	ND	(3.5)	[349.773]	1 @	(0.37)	[37.161]	ND	(0.37)	[36.510]			
gamma-BHC	ND	(0.36)	[35.842]	ND	(3.5)	[349.773]	ND	(0.37)	[37.161]	0.36 J	(0.37)	[36.510]			
SW8150 - Chlorinated Herbicides (ug/kg)															
2,4,5-T	ND	(7.2)	[35.842]	NA			NA			ND	(7.2)	[35.791]			
2,4,5-TP (Silvex)	ND	(6.1)	[35.842]	NA			NA			ND	(6.1)	[35.791]			
2,4-D	ND	(43)	[35.842]	NA			NA			ND	(43)	[35.791]			
2,4-DB	ND	(33)	[35.842]	NA			NA			ND	(33)	[35.791]			
Dalapon	ND	(210)	[35.842]	NA			NA			ND	(210)	[35.791]			
Dicamba	ND	(9.7)	[35.842]	NA			NA			ND	(9.7)	[35.791]			
Dichloroprop	2.8 J	(23)	[35.842]	NA			NA			ND	(23)	[35.791]			
Dinoseb	ND	(5.4)	[35.842]	NA			NA			ND	(5.4)	[35.791]			
MCPA	ND	(8900)	[35.842]	NA			NA			ND	(8900)	[35.791]			
MCPP	ND	(6900)	[35.842]	NA			NA			ND	(6900)	[35.791]			
SW8240 - Volatile Organics (ug/kg)															
1,1,1-Trichloroethane	ND	(5.4)	[1.077]	ND	(5.2)	[1.050]	ND	(5.6)	[1.115]	ND	(5.4)	[1.078]			
1,1,2,2-Tetrachloroethane	ND	(5.4)	[1.077]	ND	(5.2)	[1.050]	ND	(5.6)	[1.115]	ND	(5.4)	[1.078]			
1,1,2-Trichloroethane	ND	(5.4)	[1.077]	ND	(5.2)	[1.050]	ND	(5.6)	[1.115]	ND	(5.4)	[1.078]			
1,1-Dichloroethane	ND	(5.4)	[1.077]	ND	(5.2)	[1.050]	ND	(5.6)	[1.115]	ND	(5.4)	[1.078]			
1,1-Dichloroethene	ND	(5.4)	[1.077]	ND	(5.2)	[1.050]	ND	(5.6)	[1.115]	ND	(5.4)	[1.078]			
1,2,3-Trichloropropane	ND	(5.4)	[1.077]	ND	(5.2)	[1.050]	ND	(5.6)	[1.115]	ND	(5.4)	[1.078]			
1,2-Dichloroethane	ND	(5.4)	[1.077]	ND	(5.2)	[1.050]	ND	(5.6)	[1.115]	ND	(5.4)	[1.078]			

Compiled: 8 February 1994 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B1

RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)														
	NONE 4B CAN97-4B-1 4 - 6			NONE 4B CAN97-4B-S 0 - 2			NONE 8A CAN97-8A-06 8 - 10			NONE 8A CAN97-8A-1 4 - 6					
1,2-Dichloropropane	ND	(5.4)	[1.077]	ND	(5.2)	[1.050]	ND	(5.6)	[1.115]	ND	(5.4)	[1.078]			
2-Chloroethyl vinyl ether	ND	(11)	[1.077]	ND	(10)	[1.050]	ND	(11)	[1.115]	ND	(11)	[1.078]			
2-Hexanone	ND	(54)	[1.077]	ND	(52)	[1.050]	ND	(56)	[1.115]	ND	(54)	[1.078]			
4-Methyl-2-pentanone(MIBK)	ND	(54)	[1.077]	ND	(52)	[1.050]	ND	(56)	[1.115]	ND	(54)	[1.078]			
Acetone	ND	(110)	[1.077]	ND	(100)	[1.050]	ND	(110)	[1.115]	150 @	(110)	[1.078]			
Acrolein	ND	(81)	[1.077]	ND	(79)	[1.050]	ND	(84)	[1.115]	ND	(81)	[1.078]			
Acrylonitrile	ND	(54)	[1.077]	ND	(52)	[1.050]	ND	(56)	[1.115]	ND	(54)	[1.078]			
Benzene	ND	(5.4)	[1.077]	ND	(5.2)	[1.050]	ND	(5.6)	[1.115]	ND	(5.4)	[1.078]			
Bromodichloromethane	ND	(5.4)	[1.077]	ND	(5.2)	[1.050]	ND	(5.6)	[1.115]	ND	(5.4)	[1.078]			
Bromomethane	ND	(11)	[1.077]	ND	(10)	[1.050]	ND	(11)	[1.115]	ND	(11)	[1.078]			
Carbon disulfide	ND	(5.4)	[1.077]	ND	(5.2)	[1.050]	ND	(5.6)	[1.115]	ND	(5.4)	[1.078]			
Carbon tetrachloride	ND	(5.4)	[1.077]	ND	(5.2)	[1.050]	ND	(5.6)	[1.115]	ND	(5.4)	[1.078]			
Chlorobenzene	ND	(5.4)	[1.077]	ND	(5.2)	[1.050]	ND	(5.6)	[1.115]	ND	(5.4)	[1.078]			
Chloroethane	ND	(11)	[1.077]	ND	(10)	[1.050]	ND	(11)	[1.115]	ND	(11)	[1.078]			
Chloroform	ND	(5.4)	[1.077]	ND	(5.2)	[1.050]	ND	(5.6)	[1.115]	ND	(5.4)	[1.078]			
Chloromethane	ND	(11)	[1.077]	ND	(10)	[1.050]	ND	(11)	[1.115]	ND	(11)	[1.078]			
Dibromochloromethane	ND	(5.4)	[1.077]	ND	(5.2)	[1.050]	ND	(5.6)	[1.115]	ND	(5.4)	[1.078]			
Dibromomethane	ND	(5.4)	[1.077]	ND	(5.2)	[1.050]	ND	(5.6)	[1.115]	ND	(5.4)	[1.078]			
Dichlorodifluoromethane	ND	(22)	[1.077]	ND	(21)	[1.050]	ND	(22)	[1.115]	ND	(22)	[1.078]			
Ethyl benzene	ND	(5.4)	[1.077]	ND	(5.2)	[1.050]	ND	(5.6)	[1.115]	ND	(5.4)	[1.078]			
Ethyl methacrylate	ND	(16)	[1.077]	ND	(16)	[1.050]	ND	(17)	[1.115]	ND	(16)	[1.078]			
Iodomethane	ND	(5.4)	[1.077]	ND	(5.2)	[1.050]	ND	(5.6)	[1.115]	ND	(5.4)	[1.078]			
Methyl ethyl ketone	ND	(110)	[1.077]	ND	(100)	[1.050]	ND	(110)	[1.115]	ND	(110)	[1.078]			
Methylene chloride	ND	(5.4)	[1.077]	ND	(5.2)	[1.050]	ND	(5.6)	[1.115]	ND	(5.4)	[1.078]			
Styrene	ND	(5.4)	[1.077]	ND	(5.2)	[1.050]	ND	(5.6)	[1.115]	ND	(5.4)	[1.078]			
Tetrachloroethene	ND	(5.4)	[1.077]	ND	(5.2)	[1.050]	ND	(5.6)	[1.115]	ND	(5.4)	[1.078]			
Toluene	0.18 J	(5.4)	[1.077]	3.5 J	(5.2)	[1.050]	ND	(5.6)	[1.115]	ND	(5.4)	[1.078]			
Tribromomethane(Bromoform)	ND	(5.4)	[1.077]	ND	(5.2)	[1.050]	ND	(5.6)	[1.115]	ND	(5.4)	[1.078]			
Trichloroethene	ND	(5.4)	[1.077]	ND	(5.2)	[1.050]	ND	(5.6)	[1.115]	ND	(5.4)	[1.078]			

Compiled: 8 F ıry 1994

() = Reporting Limit [] = Factor ' = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID				LOCATION ID				SAMPLE ID				BEG. DEPTH - END DEPTH (FT.)			
	NONE				NONE				NONE				NONE			
	4B				4B				8A				8A			
	CAN97-4B-I				CAN97-4B-S				CAN97-8A-06				CAN97-8A-I			
	4 - 6				0 - 2				8 - 10				4 - 6			
Trichlorofluoromethane	ND	(11)	[	1.077]	ND	(10)	[	1.050]	ND	(11)	[	1.115]	ND	(11)	[	1.078]
Unknown	34	()	[	1.077]	NA				48	()	[	1.115]	32	()	[	1.078]
Vinyl acetate	ND	(5.4)	[	1.077]	ND	(5.2)	[	1.050]	ND	(5.6)	[	1.115]	ND	(5.4)	[	1.078]
Vinyl chloride	ND	(11)	[	1.077]	ND	(10)	[	1.050]	ND	(11)	[	1.115]	ND	(11)	[	1.078]
Xylenes	ND	(5.4)	[	1.077]	1.2 J	(5.2)	[	1.050]	ND	(5.6)	[	1.115]	ND	(5.4)	[	1.078]
cis-1,3-Dichloropropene	ND	(5.4)	[	1.077]	ND	(5.2)	[	1.050]	ND	(5.6)	[	1.115]	ND	(5.4)	[	1.078]
trans-1,2-Dichloroethene	ND	(5.4)	[	1.077]	ND	(5.2)	[	1.050]	ND	(5.6)	[	1.115]	ND	(5.4)	[	1.078]
trans-1,3-Dichloropropene	ND	(5.4)	[	1.077]	ND	(5.2)	[	1.050]	ND	(5.6)	[	1.115]	ND	(5.4)	[	1.078]
trans-1,4-Dichloro-2-butene	ND	(11)	[	1.077]	ND	(10)	[	1.050]	ND	(11)	[	1.115]	ND	(11)	[	1.078]
SW8270 - Semivolatile Organics (ug/kg)																
1,2,4,5-Tetrachlorobenzene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(360)	[	.037]
1,2,4-Trichlorobenzene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(360)	[	.037]
1,2-Dichlorobenzene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(360)	[	.037]
1,2-Diphenylhydrazine	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(360)	[	.037]
1,3-Dichlorobenzene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(360)	[	.037]
1,4-Dichlorobenzene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(360)	[	.037]
1-Chloronaphthalene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(360)	[	.037]
1-Naphthylamine	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(360)	[	.037]
2,3,4,6-Tetrachlorophenol	ND	(720)	[	.036]	ND	(700)	[	.035]	ND	(740)	[	.037]	ND	(730)	[	.037]
2,4,5-Trichlorophenol	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(360)	[	.037]
2,4,6-Trichlorophenol	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(360)	[	.037]
2,4-Dichlorophenol	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(360)	[	.037]
2,4-Dimethylphenol	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(360)	[	.037]
2,4-Dinitrophenol	ND	(1800)	[	.036]	ND	(1700)	[	.035]	ND	(1900)	[	.037]	ND	(1800)	[	.037]
2,4-Dinitrotoluene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(360)	[	.037]
2,6-Dichlorophenol	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(360)	[	.037]
2,6-Dinitrotoluene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(360)	[	.037]
2-Chloronaphthalene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(360)	[	.037]
2-Chlorophenol	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(360)	[	.037]

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TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)														
	NONE 4B CAN97-4B-I 4 - 6				NONE 4B CAN97-4B-S 0 - 2				NONE 8A CAN97-8A-06 8 - 10				NONE 8A CAN97-8A-I 4 - 6			
2-Methylnaphthalene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(360)	[	.037]
2-Methylphenol(o-cresol)	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(360)	[	.037]
2-Naphthylamine	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(360)	[	.037]
2-Nitroaniline	ND	(1800)	[	.036]	ND	(1700)	[	.035]	ND	(1900)	[	.037]	ND	(1800)	[	.037]
2-Nitrophenol	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(360)	[	.037]
2-Picoline	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(360)	[	.037]
3,3'-Dichlorobenzidine	ND	(720)	[	.036]	ND	(700)	[	.035]	ND	(740)	[	.037]	ND	(730)	[	.037]
3-Methylcholanthrene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(360)	[	.037]
3-Nitroaniline	ND	(1800)	[	.036]	ND	(1700)	[	.035]	ND	(1900)	[	.037]	ND	(1800)	[	.037]
4,6-Dinitro-2-methylphenol	ND	(1800)	[	.036]	ND	(1700)	[	.035]	ND	(1900)	[	.037]	ND	(1800)	[	.037]
4-Aminobiphenyl	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(360)	[	.037]
4-Bromophenyl phenyl ether	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(360)	[	.037]
4-Chloro-3-methylphenol	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(360)	[	.037]
4-Chlorophenyl phenyl ether	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(360)	[	.037]
4-Methylphenol(p-cresol)	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(360)	[	.037]
4-Nitroaniline	ND	(1800)	[	.036]	ND	(1700)	[	.035]	ND	(1900)	[	.037]	ND	(1800)	[	.037]
4-Nitrophenol	ND	(1800)	[	.036]	ND	(1700)	[	.035]	ND	(1900)	[	.037]	ND	(1800)	[	.037]
7,12-Dimethylbenz(a)anthracene	ND	(900)	[	.036]	ND	(870)	[	.035]	ND	(930)	[	.037]	ND	(910)	[	.037]
Acenaphthene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(360)	[	.037]
Acenaphthylene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(360)	[	.037]
Acetophenone	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(360)	[	.037]
Aniline	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(360)	[	.037]
Anthracene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(360)	[	.037]
Benzidine	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(360)	[	.037]
Benzo(a)anthracene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(360)	[	.037]
Benzo(a)pyrene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(360)	[	.037]
Benzo(b)fluoranthene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(360)	[	.037]
Benzo(g,h,i)perylene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(360)	[	.037]
Benzo(k)fluoranthene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(360)	[	.037]

Compiled: 8 [illegible]ary 1994 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)																
	NONE 4B CAN97-4B-I 4 - 6				NONE 4B CAN97-4B-S 0 - 2				NONE 8A CAN97-8A-06 8 - 10				NONE 8A CAN97-8A-I 4 - 6			
Benzoic acid	ND	(1800)	[	.036]	ND	(1700)	[	.035]	ND	(1900)	[	.037]	ND	(1800)	[	.037]
Benzyl alcohol	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(360)	[	.037]
Butylbenzylphthalate	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(360)	[	.037]
Chlorocyclohexanol	NA				NA				180	(0)	[	.037]	NA			
Chrysene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(360)	[	.037]
Cyclohexenol	NA				280	(0)	[	.035]	NA				NA			
Cyclohexenone	NA				NA				180	(0)	[	.037]	NA			
Di-n-octylphthalate	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(360)	[	.037]
Dibenz(a,h)anthracene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(360)	[	.037]
Dibenz(a,j)acridine	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(360)	[	.037]
Dibenzofuran	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(360)	[	.037]
Dibutylphthalate	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(360)	[	.037]
Diethylphthalate	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(360)	[	.037]
Dimethylphenethylamine	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(360)	[	.037]
Dimethylphthalate	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(360)	[	.037]
Diphenylamine	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(360)	[	.037]
Ethyl methanesulfonate	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(360)	[	.037]
Fluoranthene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(360)	[	.037]
Fluorene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(360)	[	.037]
Hexachlorobenzene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(360)	[	.037]
Hexachlorobutadiene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(360)	[	.037]
Hexachlorocyclopentadiene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(360)	[	.037]
Hexachloroethane	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(360)	[	.037]
Indeno(1,2,3-cd)pyrene	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(360)	[	.037]
Isophorone	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(360)	[	.037]
Methyl methanesulfonate	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(360)	[	.037]
N-Nitroso-di-n-butylamine	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(360)	[	.037]
N-Nitrosodimethylamine	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(360)	[	.037]
N-Nitrosodiphenylamine	ND	(360)	[	.036]	ND	(350)	[	.035]	ND	(370)	[	.037]	ND	(360)	[	.037]

Compiled: 8 February 1994 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	NONE 4B CAN97-4B-1 4 - 6			NONE 4B CAN97-4B-S 0 - 2			NONE 8A CAN97-8A-06 8 - 10			NONE 8A CAN97-8A-1 4 - 6		
N-Nitrosodipropylamine	ND	(360)	[.036]	ND	(350)	[.035]	ND	(370)	[.037]	ND	(360)	[.037]
N-Nitrosopiperidine	ND	(360)	[.036]	ND	(350)	[.035]	ND	(370)	[.037]	ND	(360)	[.037]
Naphthalene	ND	(360)	[.036]	ND	(350)	[.035]	ND	(370)	[.037]	ND	(360)	[.037]
Nitrobenzene	ND	(360)	[.036]	ND	(350)	[.035]	ND	(370)	[.037]	ND	(360)	[.037]
Pentachlorobenzene	ND	(360)	[.036]	ND	(350)	[.035]	ND	(370)	[.037]	ND	(360)	[.037]
Pentachloronitrobenzene	ND	(360)	[.036]	ND	(350)	[.035]	ND	(370)	[.037]	ND	(360)	[.037]
Pentachlorophenol	ND	(1800)	[.036]	ND	(1700)	[.035]	ND	(1900)	[.037]	ND	(1800)	[.037]
Phenacetin	ND	(360)	[.036]	ND	(350)	[.035]	ND	(370)	[.037]	ND	(360)	[.037]
Phenanthrene	ND	(360)	[.036]	ND	(350)	[.035]	ND	(370)	[.037]	ND	(360)	[.037]
Phenol	ND	(360)	[.036]	ND	(350)	[.035]	ND	(370)	[.037]	ND	(360)	[.037]
Pronamide	ND	(360)	[.036]	ND	(350)	[.035]	ND	(370)	[.037]	ND	(360)	[.037]
Pyrene	ND	(360)	[.036]	ND	(350)	[.035]	ND	(370)	[.037]	ND	(360)	[.037]
Pyridine	ND	(360)	[.036]	ND	(350)	[.035]	ND	(370)	[.037]	ND	(360)	[.037]
Trichloropropene(s)	NA			NA			260	(0)	[.037]	NA		
Unknown	220	(0)	[.036]	170	(0)	[.035]	410	(0)	[.037]	360	(0)	[.037]
Unknown aldehyde	NA			170	(0)	[.035]	NA			NA		
Unknown alkane	NA			170	(0)	[.035]	NA			NA		
Unknown cyclic ether	570	(0)	[.036]	280	(0)	[.035]	1400	(0)	[.037]	NA		
Unknown trichloropropene	NA			NA			NA			140	(0)	[.037]
bis(2-Chloroethoxy)methane	ND	(360)	[.036]	ND	(350)	[.035]	ND	(370)	[.037]	ND	(360)	[.037]
bis(2-Chloroethyl)ether	ND	(360)	[.036]	ND	(350)	[.035]	ND	(370)	[.037]	ND	(360)	[.037]
bis(2-Chloroisopropyl)ether	ND	(360)	[.036]	ND	(350)	[.035]	ND	(370)	[.037]	ND	(360)	[.037]
bis(2-Ethylhexyl)phthalate	120 J	(360)	[.036]	ND	(350)	[.035]	48 J	(370)	[.037]	ND	(360)	[.037]
p-Chloroaniline	ND	(360)	[.036]	ND	(350)	[.035]	ND	(370)	[.037]	ND	(360)	[.037]
p-Dimethylaminoazobenzene	ND	(360)	[.036]	ND	(350)	[.035]	ND	(370)	[.037]	ND	(360)	[.037]

SITE ID
LOCATION ID
SAMPLE ID
BEG. DEPTH - END DEPTH (FT.)

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)															
	NONE 8A CAN97-8A-S 0.5 - 1				NONE 8B CAN97-8B-01 4 - 6				NONE 8B CAN97-8B-02 8 - 10				NONE 8B CAN97-8B-03 14 - 16			
EPA 418.1 - Total Recoverable Petroleum Hydrocarbons (mg/kg)																
Hydrocarbons	87 @	(27)	[5.369]		9.6 @	(27)	[5.434]		9.6 @	(27)	[5.441]		33 @	(27)	[5.498]	
SW8015 - Total Petroleum Hydrocarbons (ug/kg)																
Benzene (2)	NA				NA				NA				ND	(32)	[106.000]	
Diesel (2)	NA				NA				NA				18000 GB@	(5300)	[105.263]	
Ethylbenzene (2)	NA				NA				NA				ND	(32)	[106.000]	
Gasoline (2)	NA				NA				NA				ND	(5300)	[106.000]	
Jet fuel (2)	NA				NA				NA				ND	(11000)	[105.263]	
Kerosene (2)	NA				NA				NA				ND	(11000)	[105.263]	
Toluene (2)	NA				NA				NA				8.4 J	(32)	[106.000]	
Xylenes (total) (2)	NA				NA				NA				8.1 J	(53)	[106.000]	
SW8080 - Organochlorine Pesticides and PCBs (ug/kg)																
4,4'-DDD	ND	(3.6)	[358.551]		1.1 G@	(0.36)	[36.350]		ND	(0.36)	[36.311]		0.55 G@	(0.37)	[36.644]	
4,4'-DDE	35	(3.6)	[358.551]		16	(0.36)	[36.350]		ND	(0.36)	[36.311]		ND	(0.37)	[36.644]	
4,4'-DDT	19 @	(7.2)	[358.551]		41	(0.73)	[36.350]		ND	(0.73)	[36.311]		0.97 @	(0.73)	[36.644]	
Aldrin	ND	(3.6)	[358.551]		ND	(0.36)	[36.350]		ND	(0.36)	[36.311]		ND	(0.37)	[36.644]	
Chlordane	ND	(18)	[358.551]		9.4	(1.8)	[36.350]		ND	(1.8)	[36.311]		ND	(1.8)	[36.644]	
Dieldrin	ND	(3.6)	[358.551]		ND	(0.36)	[36.350]		ND	(0.36)	[36.311]		0.15 J	(0.37)	[36.644]	
Endosulfan I	ND	(3.6)	[358.551]		ND	(0.36)	[36.350]		ND	(0.36)	[36.311]		ND	(0.37)	[36.644]	
Endosulfan II	ND	(11)	[358.551]		ND	(1.1)	[36.350]		ND	(1.1)	[36.311]		ND	(1.1)	[36.644]	
Endosulfan Sulfate	ND	(18)	[358.551]		ND	(1.8)	[36.350]		ND	(1.8)	[36.311]		ND	(1.8)	[36.644]	
Endrin	ND	(3.6)	[358.551]		ND	(0.36)	[36.350]		ND	(0.36)	[36.311]		0.28 J	(0.37)	[36.644]	
Endrin Aldehyde	ND	(7.2)	[358.551]		ND	(0.73)	[36.350]		ND	(0.73)	[36.311]		ND	(0.73)	[36.644]	
Endrin Ketone	ND	(18)	[358.551]		ND	(1.8)	[36.350]		ND	(1.8)	[36.311]		ND	(1.8)	[36.644]	
Heptachlor	ND	(3.6)	[358.551]		ND	(0.36)	[36.350]		ND	(0.36)	[36.311]		0.16 J	(0.37)	[36.644]	
Heptachlor epoxide	ND	(3.6)	[358.551]		ND	(0.36)	[36.350]		ND	(0.36)	[36.311]		ND	(0.37)	[36.644]	
Methoxychlor	ND	(18)	[358.551]		ND	(1.8)	[36.350]		ND	(1.8)	[36.311]		ND	(1.8)	[36.644]	
PCB-1016	ND	(36)	[358.551]		ND	(3.6)	[36.350]		ND	(3.6)	[36.311]		ND	(3.7)	[36.644]	
PCB-1221	ND	(72)	[358.551]		ND	(7.3)	[36.350]		ND	(7.3)	[36.311]		ND	(7.3)	[36.644]	

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TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)														
	NONE 8A CAN97-8A-S 0.5 - 1			NONE 8B CAN97-8B-01 4 - 6			NONE 8B CAN97-8B-02 8 - 10			NONE 8B CAN97-8B-03 14 - 16					
PCB-1232	ND	(72)	[358.551]	ND	(7.3)	[36.350]	ND	(7.3)	[36.311]	ND	(7.3)	[36.644]			
PCB-1242	ND	(36)	[358.551]	ND	(3.6)	[36.350]	ND	(3.6)	[36.311]	ND	(3.7)	[36.644]			
PCB-1248	ND	(36)	[358.551]	ND	(3.6)	[36.350]	ND	(3.6)	[36.311]	ND	(3.7)	[36.644]			
PCB-1254	ND	(72)	[358.551]	ND	(7.3)	[36.350]	ND	(7.3)	[36.311]	ND	(7.3)	[36.644]			
PCB-1260	ND	(72)	[358.551]	ND	(7.3)	[36.350]	ND	(7.3)	[36.311]	ND	(7.3)	[36.644]			
Toxaphene	ND	(180)	[358.551]	ND	(18)	[36.350]	ND	(18)	[36.311]	ND	(18)	[36.644]			
alpha-BHC	ND	(3.6)	[358.551]	ND	(0.36)	[36.350]	ND	(0.36)	[36.311]	ND	(0.37)	[36.644]			
beta-BHC	ND	(3.6)	[358.551]	ND	(0.36)	[36.350]	ND	(0.36)	[36.311]	ND	(0.37)	[36.644]			
delta-BHC	ND	(3.6)	[358.551]	0.42 @	(0.36)	[36.350]	ND	(0.36)	[36.311]	ND	(0.37)	[36.644]			
gamma-BHC	ND	(3.6)	[358.551]	ND	(0.36)	[36.350]	ND	(0.36)	[36.311]	ND	(0.37)	[36.644]			
SW8150 - Chlorinated Herbicides (ug/kg)															
2,4,5-T	NA			NA			NA			ND	(7.3)	[36.724]			
2,4,5-TP (Silvex)	NA			NA			NA			ND	(6.2)	[36.724]			
2,4-D	NA			NA			NA			ND	(44)	[36.724]			
2,4-DB	NA			NA			NA			ND	(33)	[36.724]			
Dalapon	NA			NA			NA			ND	(210)	[36.724]			
Dicamba	NA			NA			NA			ND	(9.9)	[36.724]			
Dichloroprop	NA			NA			NA			3.2 J	(24)	[36.724]			
Dinoseb	NA			NA			NA			ND	(5.5)	[36.724]			
MCPA	NA			NA			NA			ND	(9100)	[36.724]			
MCPP	NA			NA			NA			ND	(7100)	[36.724]			
SW8240 - Volatile Organics (ug/kg)															
1,1,1-Trichloroethane	ND	(5.4)	[1.076]	ND	(5.5)	[1.090]	ND	(5.3)	[1.066]	ND	(5.5)	[1.102]			
1,1,2,2-Tetrachloroethane	ND	(5.4)	[1.076]	ND	(5.5)	[1.090]	ND	(5.3)	[1.066]	ND	(5.5)	[1.102]			
1,1,2-Trichloroethane	ND	(5.4)	[1.076]	ND	(5.5)	[1.090]	ND	(5.3)	[1.066]	ND	(5.5)	[1.102]			
1,1-Dichloroethane	ND	(5.4)	[1.076]	ND	(5.5)	[1.090]	ND	(5.3)	[1.066]	ND	(5.5)	[1.102]			
1,1-Dichloroethene	ND	(5.4)	[1.076]	ND	(5.5)	[1.090]	ND	(5.3)	[1.066]	ND	(5.5)	[1.102]			
1,2,3-Trichloropropane	ND	(5.4)	[1.076]	ND	(5.5)	[1.090]	ND	(5.3)	[1.066]	ND	(5.5)	[1.102]			
1,2-Dichloroethane	ND	(5.4)	[1.076]	ND	(5.5)	[1.090]	ND	(5.3)	[1.066]	ND	(5.5)	[1.102]			

Compiled: 8 Fe y 1994 () = Reporting Limit [] = Factor (= Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 8A CAN97-8A-S 0.5 - 1			NONE 8B CAN97-8B-01 4 - 6			NONE 8B CAN97-8B-02 8 - 10			NONE 8B CAN97-8B-03 14 - 16		
1,2-Dichloropropane	ND	(5.4)	[1.076]	ND	(5.5)	[1.090]	ND	(5.3)	[1.066]	ND	(5.5)	[1.102]
2-Chloroethyl vinyl ether	ND	(11)	[1.076]	ND	(11)	[1.090]	ND	(11)	[1.066]	ND	(11)	[1.102]
2-Hexanone	ND	(54)	[1.076]	ND	(55)	[1.090]	ND	(53)	[1.066]	ND	(55)	[1.102]
4-Methyl-2-pentanone(MIBK)	ND	(54)	[1.076]	ND	(55)	[1.090]	ND	(53)	[1.066]	ND	(55)	[1.102]
Acetone	ND	(110)	[1.076]	ND	(110)	[1.090]	83 J	(110)	[1.066]	9.7 J	(110)	[1.102]
Acrolein	ND	(81)	[1.076]	ND	(82)	[1.090]	ND	(80)	[1.066]	ND	(83)	[1.102]
Acrylonitrile	ND	(54)	[1.076]	ND	(55)	[1.090]	ND	(53)	[1.066]	ND	(55)	[1.102]
Benzene	ND	(5.4)	[1.076]	ND	(5.5)	[1.090]	ND	(5.3)	[1.066]	ND	(5.5)	[1.102]
Bromodichloromethane	ND	(5.4)	[1.076]	ND	(5.5)	[1.090]	ND	(5.3)	[1.066]	ND	(5.5)	[1.102]
Bromomethane	ND	(11)	[1.076]	ND	(11)	[1.090]	ND	(11)	[1.066]	ND	(11)	[1.102]
Carbon disulfide	ND	(5.4)	[1.076]	ND	(5.5)	[1.090]	ND	(5.3)	[1.066]	ND	(5.5)	[1.102]
Carbon tetrachloride	ND	(5.4)	[1.076]	ND	(5.5)	[1.090]	ND	(5.3)	[1.066]	ND	(5.5)	[1.102]
Chlorobenzene	ND	(5.4)	[1.076]	ND	(5.5)	[1.090]	ND	(5.3)	[1.066]	ND	(5.5)	[1.102]
Chloroethane	ND	(11)	[1.076]	ND	(11)	[1.090]	ND	(11)	[1.066]	ND	(11)	[1.102]
Chloroform	ND	(5.4)	[1.076]	ND	(5.5)	[1.090]	ND	(5.3)	[1.066]	ND	(5.5)	[1.102]
Chloromethane	ND	(11)	[1.076]	ND	(11)	[1.090]	ND	(11)	[1.066]	ND	(11)	[1.102]
Dibromochloromethane	ND	(5.4)	[1.076]	ND	(5.5)	[1.090]	ND	(5.3)	[1.066]	ND	(5.5)	[1.102]
Dibromomethane	ND	(5.4)	[1.076]	ND	(5.5)	[1.090]	ND	(5.3)	[1.066]	ND	(5.5)	[1.102]
Dichlorodifluoromethane	ND	(22)	[1.076]	ND	(22)	[1.090]	ND	(21)	[1.066]	ND	(22)	[1.102]
Ethyl acetate	NA			NA			NA			5.5	()	[1.102]
Ethyl benzene	ND	(5.4)	[1.076]	ND	(5.5)	[1.090]	ND	(5.3)	[1.066]	ND	(5.5)	[1.102]
Ethyl methacrylate	ND	(16)	[1.076]	ND	(16)	[1.090]	ND	(16)	[1.066]	ND	(17)	[1.102]
Iodomethane	ND	(5.4)	[1.076]	ND	(5.5)	[1.090]	ND	(5.3)	[1.066]	ND	(5.5)	[1.102]
Methyl ethyl ketone	ND	(110)	[1.076]	ND	(110)	[1.090]	ND	(110)	[1.066]	ND	(110)	[1.102]
Methylene chloride	ND	(5.4)	[1.076]	3.2 J	(5.5)	[1.090]	ND	(5.3)	[1.066]	ND	(5.5)	[1.102]
Styrene	ND	(5.4)	[1.076]	ND	(5.5)	[1.090]	ND	(5.3)	[1.066]	ND	(5.5)	[1.102]
Tetrachloroethene	ND	(5.4)	[1.076]	ND	(5.5)	[1.090]	ND	(5.3)	[1.066]	ND	(5.5)	[1.102]
Toluene	5.2 J	(5.4)	[1.076]	5.2 J	(5.5)	[1.090]	ND	(5.3)	[1.066]	ND	(5.5)	[1.102]
Tribromomethane(Bromoform)	ND	(5.4)	[1.076]	ND	(5.5)	[1.090]	ND	(5.3)	[1.066]	ND	(5.5)	[1.102]

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TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID	LOCATION ID	SAMPLE ID	BEG. DEPTH - END DEPTH (FT.)												
	NONE	8A	CAN97-8A-S	0.5 - 1			NONE	8B	CAN97-8B-01	4 - 6			NONE	8B	CAN97-8B-02	8 - 10			NONE	8B	CAN97-8B-03	14 - 16		
Trichloroethene	ND		(5.4)	[	1.076]		ND		(5.5)	[	1.090]		ND		(5.3)	[	1.066]		ND		(5.5)	[	1.102]	
Trichlorofluoromethane	ND		(11)	[	1.076]		ND		(11)	[	1.090]		ND		(11)	[	1.066]		ND		(11)	[	1.102]	
Unknown		NA						NA						NA					44		()	[	1.102]	
Vinyl acetate	ND		(5.4)	[	1.076]		ND		(5.5)	[	1.090]		ND		(5.3)	[	1.066]		ND		(5.5)	[	1.102]	
Vinyl chloride	ND		(11)	[	1.076]		ND		(11)	[	1.090]		ND		(11)	[	1.066]		ND		(11)	[	1.102]	
Xylenes	1.7 J		(5.4)	[	1.076]		ND		(5.5)	[	1.090]		ND		(5.3)	[	1.066]		ND		(5.5)	[	1.102]	
cis-1,3-Dichloropropene	ND		(5.4)	[	1.076]		ND		(5.5)	[	1.090]		ND		(5.3)	[	1.066]		ND		(5.5)	[	1.102]	
trans-1,2-Dichloroethene	ND		(5.4)	[	1.076]		ND		(5.5)	[	1.090]		ND		(5.3)	[	1.066]		ND		(5.5)	[	1.102]	
trans-1,3-Dichloropropene	ND		(5.4)	[	1.076]		ND		(5.5)	[	1.090]		ND		(5.3)	[	1.066]		ND		(5.5)	[	1.102]	
trans-1,4-Dichloro-2-butene	ND		(11)	[	1.076]		ND		(11)	[	1.090]		ND		(11)	[	1.066]		ND		(11)	[	1.102]	*
SW8270 - Semivolatile Organics (ug/kg)																								
1,2,4,5-Tetrachlorobenzene	ND		(360)	[	.036]		ND		(360)	[	.036]		ND		(360)	[	.036]		ND		(370)	[	.037]	
1,2,4-Trichlorobenzene	ND		(360)	[	.036]		ND		(360)	[	.036]		ND		(360)	[	.036]		ND		(370)	[	.037]	
1,2-Dichlorobenzene	ND		(360)	[	.036]		ND		(360)	[	.036]		ND		(360)	[	.036]		ND		(370)	[	.037]	
1,2-Diphenylhydrazine	ND		(360)	[	.036]		ND		(360)	[	.036]		ND		(360)	[	.036]		ND		(370)	[	.037]	
1,3-Dichlorobenzene	ND		(360)	[	.036]		ND		(360)	[	.036]		ND		(360)	[	.036]		ND		(370)	[	.037]	
1,4-Dichlorobenzene	ND		(360)	[	.036]		ND		(360)	[	.036]		ND		(360)	[	.036]		ND		(370)	[	.037]	
1-Chloronaphthalene	ND		(360)	[	.036]		ND		(360)	[	.036]		ND		(360)	[	.036]		ND		(370)	[	.037]	
1-Naphthylamine	ND		(360)	[	.036]		ND		(360)	[	.036]		ND		(360)	[	.036]		ND		(370)	[	.037]	
2,3,4,6-Tetrachlorophenol	ND		(720)	[	.036]		ND		(730)	[	.036]		ND		(730)	[	.036]		ND		(730)	[	.037]	
2,4,5-Trichlorophenol	ND		(360)	[	.036]		ND		(360)	[	.036]		ND		(360)	[	.036]		ND		(370)	[	.037]	
2,4,6-Trichlorophenol	ND		(360)	[	.036]		ND		(360)	[	.036]		ND		(360)	[	.036]		ND		(370)	[	.037]	
2,4-Dichlorophenol	ND		(360)	[	.036]		ND		(360)	[	.036]		ND		(360)	[	.036]		ND		(370)	[	.037]	
2,4-Dimethylphenol	ND		(360)	[	.036]		ND		(360)	[	.036]		ND		(360)	[	.036]		ND		(370)	[	.037]	
2,4-Dinitrophenol	ND		(1800)	[	.036]		ND		(1800)	[	.036]		ND		(1800)	[	.036]		ND		(1800)	[	.037]	
2,4-Dinitrotoluene	ND		(360)	[	.036]		ND		(360)	[	.036]		ND		(360)	[	.036]		ND		(370)	[	.037]	
2,6-Dichlorophenol	ND		(360)	[	.036]		ND		(360)	[	.036]		ND		(360)	[	.036]		ND		(370)	[	.037]	
2,6-Dinitrotoluene	ND		(360)	[	.036]		ND		(360)	[	.036]		ND		(360)	[	.036]		ND		(370)	[	.037]	
2-Chloronaphthalene	ND		(360)	[	.036]		ND		(360)	[	.036]		ND		(360)	[	.036]		ND		(370)	[	.037]	

Compiled: 8 Fe ry 1994 () = Reporting Limit [] = Factor * Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)														
	NONE 8A CAN97-8A-S 0.5 - 1				NONE 8B CAN97-8B-01 4 - 6				NONE 8B CAN97-8B-02 8 - 10				NONE 8B CAN97-8B-03 14 - 16			
2-Chlorophenol	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(370)	[	.037]
2-Methylnaphthalene	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(370)	[	.037]
2-Methylphenol(o-cresol)	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(370)	[	.037]
2-Naphthylamine	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(370)	[	.037]
2-Nitroaniline	ND	(1800)	[	.036]	ND	(1800)	[	.036]	ND	(1800)	[	.036]	ND	(1800)	[	.037]
2-Nitrophenol	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(370)	[	.037]
2-Picoline	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(370)	[	.037]
3,3'-Dichlorobenzidine	ND	(720)	[	.036]	ND	(730)	[	.036]	ND	(730)	[	.036]	ND	(730)	[	.037]
3-Methylcholanthrene	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(370)	[	.037]
3-Nitroaniline	ND	(1800)	[	.036]	ND	(1800)	[	.036]	ND	(1800)	[	.036]	ND	(1800)	[	.037]
4,6-Dinitro-2-methylphenol	ND	(1800)	[	.036]	ND	(1800)	[	.036]	ND	(1800)	[	.036]	ND	(1800)	[	.037]
4-Aminobiphenyl	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(370)	[	.037]
4-Bromophenyl phenyl ether	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(370)	[	.037]
4-Chloro-3-methylphenol	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(370)	[	.037]
4-Chlorophenyl phenyl ether	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(370)	[	.037]
4-Methylphenol(p-cresol)	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(370)	[	.037]
4-Nitroaniline	ND	(1800)	[	.036]	ND	(1800)	[	.036]	ND	(1800)	[	.036]	ND	(1800)	[	.037]
4-Nitrophenol	ND	(1800)	[	.036]	ND	(1800)	[	.036]	ND	(1800)	[	.036]	ND	(1800)	[	.037]
7,12-Dimethylbenz(a)anthracene	ND	(900)	[	.036]	ND	(910)	[	.036]	ND	(910)	[	.036]	ND	(920)	[	.037]
Acenaphthene	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(370)	[	.037]
Acenaphthylene	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(370)	[	.037]
Acetophenone	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(370)	[	.037]
Aniline	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(370)	[	.037]
Anthracene	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(370)	[	.037]
Benzidine	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(370)	[	.037]
Benzo(a)anthracene	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(370)	[	.037]
Benzo(a)pyrene	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(370)	[	.037]
Benzo(b)fluoranthene	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(370)	[	.037]
Benzo(g,h,i)perylene	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(370)	[	.037]

Compiled: 8 February 1994 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)																
	NONE 8A CAN97-8A-S 0.5 - 1				NONE 8B CAN97-8B-01 4 - 6				NONE 8B CAN97-8B-02 8 - 10				NONE 8B CAN97-8B-03 14 - 16			
Benzo(k)fluoranthene	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(370)	[	.037]
Benzoic acid	ND	(1800)	[	.036]	ND	(1800)	[	.036]	ND	(1800)	[	.036]	ND	(1800)	[	.037]
Benzyl alcohol	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(370)	[	.037]
Butylbenzylphthalate	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(370)	[	.037]
Chrysene	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(370)	[	.037]
Cyclohexenone	140	(0)	[	.036]	NA				NA				NA			
Di-n-octylphthalate	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(370)	[	.037]
Dibenz(a,h)anthracene	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(370)	[	.037]
Dibenz(a,j)acridine	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(370)	[	.037]
Dibenzofuran	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(370)	[	.037]
Dibutylphthalate	31 J	(360)	[	.036]	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(370)	[	.037]
Diethylphthalate	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(370)	[	.037]
Dimethylphenethylamine	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(370)	[	.037]
Dimethylphthalate	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(370)	[	.037]
Diphenylamine	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(370)	[	.037]
Ethyl methanesulfonate	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(370)	[	.037]
Fluoranthene	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(370)	[	.037]
Fluorene	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(370)	[	.037]
Hexachlorobenzene	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(370)	[	.037]
Hexachlorobutadiene	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(370)	[	.037]
Hexachlorocyclopentadiene	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(370)	[	.037]
Hexachloroethane	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(370)	[	.037]
Indeno(1,2,3-cd)pyrene	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(370)	[	.037]
Isophorone	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(370)	[	.037]
Methyl methanesulfonate	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(370)	[	.037]
N-Nitroso-di-n-butylamine	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(370)	[	.037]
N-Nitrosodimethylamine	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(370)	[	.037]
N-Nitrosodiphenylamine	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(370)	[	.037]
N-Nitrosodipropylamine	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(360)	[	.036]	ND	(370)	[	.037]

Compiled: 8 Fe[illegible]y 1994 () = Reporting Limit [] = Factor (= Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID: NONE LOCATION ID: 8A SAMPLE ID: CAN97-8A-S BEG. DEPTH - END DEPTH (FT.): 0.5 - 1			SITE ID: NONE LOCATION ID: 8B SAMPLE ID: CAN97-8B-01 BEG. DEPTH - END DEPTH (FT.): 4 - 6			SITE ID: NONE LOCATION ID: 8B SAMPLE ID: CAN97-8B-02 BEG. DEPTH - END DEPTH (FT.): 8 - 10			SITE ID: NONE LOCATION ID: 8B SAMPLE ID: CAN97-8B-03 BEG. DEPTH - END DEPTH (FT.): 14 - 16		
N-Nitrosopiperidine	ND	(360)	[.036]	ND	(360)	[.036]	ND	(360)	[.036]	ND	(370)	[.037]
Naphthalene	ND	(360)	[.036]	ND	(360)	[.036]	ND	(360)	[.036]	ND	(370)	[.037]
Nitrobenzene	ND	(360)	[.036]	ND	(360)	[.036]	ND	(360)	[.036]	ND	(370)	[.037]
Pentachlorobenzene	ND	(360)	[.036]	ND	(360)	[.036]	ND	(360)	[.036]	ND	(370)	[.037]
Pentachloronitrobenzene	ND	(360)	[.036]	ND	(360)	[.036]	ND	(360)	[.036]	ND	(370)	[.037]
Pentachlorophenol	ND	(1800)	[.036]	ND	(1800)	[.036]	ND	(1800)	[.036]	ND	(1800)	[.037]
Phenacetin	ND	(360)	[.036]	ND	(360)	[.036]	ND	(360)	[.036]	ND	(370)	[.037]
Phenanthrene	ND	(360)	[.036]	ND	(360)	[.036]	ND	(360)	[.036]	ND	(370)	[.037]
Phenol	ND	(360)	[.036]	ND	(360)	[.036]	ND	(360)	[.036]	ND	(370)	[.037]
Pronamide	ND	(360)	[.036]	ND	(360)	[.036]	ND	(360)	[.036]	ND	(370)	[.037]
Pyrene	ND	(360)	[.036]	ND	(360)	[.036]	ND	(360)	[.036]	ND	(370)	[.037]
Pyridine	ND	(360)	[.036]	ND	(360)	[.036]	ND	(360)	[.036]	ND	(370)	[.037]
Trichloropropene(s)	NA			140	(0)	[.036]	NA			150	(0)	[.037]
Unknown	360	(0)	[.036]	250	(0)	[.036]	NA			220	(0)	[.037]
Unknown B	NA			NA			140	(0)	[.036]	NA		
Unknown aldehyde	220	(0)	[.036]	NA			NA			NA		
Unknown alkane	180	(0)	[.036]	NA			NA			NA		
Unknown cyclic ether	360	(0)	[.036]	NA			NA			730	(0)	[.037]
Unknown cyclic ether B	NA			470	(0)	[.036]	NA			NA		
bis(2-Chloroethoxy)methane	ND	(360)	[.036]	ND	(360)	[.036]	ND	(360)	[.036]	ND	(370)	[.037]
bis(2-Chloroethyl)ether	ND	(360)	[.036]	ND	(360)	[.036]	ND	(360)	[.036]	ND	(370)	[.037]
bis(2-Chloroisopropyl)ether	ND	(360)	[.036]	ND	(360)	[.036]	ND	(360)	[.036]	ND	(370)	[.037]
bis(2-Ethylhexyl)phthalate	ND	(360)	[.036]	ND	(360)	[.036]	79 JB	(360)	[.036]	ND	(370)	[.037]
p-Chloroaniline	ND	(360)	[.036]	ND	(360)	[.036]	ND	(360)	[.036]	ND	(370)	[.037]
p-Dimethylaminoazobenzene	ND	(360)	[.036]	ND	(360)	[.036]	ND	(360)	[.036]	ND	(370)	[.037]

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 8B CAN97-8B-04 19 - 21			NONE 8B CAN97-8B-05 24 - 26			NONE 8B CAN97-8B-06 29 - 31			NONE 8B CAN97-8B-07 34 - 36		
EPA 418.1 - Total Recoverable Petroleum Hydrocarbons (mg/kg)												
Hydrocarbons	ND	(27)	[5.496]	51 @	(28)	[5.526]	35 @	(27)	[5.331]	7.1 @	(26)	[5.284]
SW8015 - Total Petroleum Hydrocarbons (ug/kg)												
Benzene (2)	NA			NA			NA			4.2 J	(31)	[102.000]
Diesel (2)	7100 GB@	(5500)	[109.890]	NA			NA			21000 GB@	(5300)	[105.263]
Ethylbenzene (2)	NA			NA			NA			13 J	(31)	[102.000]
Gasoline (2)	NA			NA			NA			ND	(5100)	[102.000]
Jet fuel (2)	ND	(11000)	[109.890]	NA			NA			ND	(11000)	[105.263]
Kerosene (2)	ND	(11000)	[109.890]	NA			NA			ND	(11000)	[105.263]
Toluene (2)	NA			NA			NA			15 J	(31)	[102.000]
Xylenes (total) (2)	NA			NA			NA			41 J	(51)	[102.000]
SW8080 - Organochlorine Pesticides and PCBs (ug/kg)												
4,4'-DDD	0.42 G@	(0.37)	[36.711]	0.4 G@	(0.37)	[36.819]	0.43 G@	(0.36)	[35.575]	ND	(0.35)	[35.236]
4,4'-DDE	0.072 J	(0.37)	[36.711]	0.075 J	(0.37)	[36.819]	ND	(0.36)	[35.575]	0.43 @	(0.35)	[35.236]
4,4'-DDT	0.55 J	(0.73)	[36.711]	0.34 J	(0.74)	[36.819]	ND	(0.71)	[35.575]	0.62 J	(0.7)	[35.236]
Aldrin	ND	(0.37)	[36.711]	ND	(0.37)	[36.819]	ND	(0.36)	[35.575]	ND	(0.35)	[35.236]
Chlordane	ND	(1.8)	[36.711]	ND	(1.8)	[36.819]	ND	(1.8)	[35.575]	ND	(1.8)	[35.236]
Dieldrin	ND	(0.37)	[36.711]	ND	(0.37)	[36.819]	ND	(0.36)	[35.575]	ND	(0.35)	[35.236]
Endosulfan I	ND	(0.37)	[36.711]	ND	(0.37)	[36.819]	ND	(0.36)	[35.575]	ND	(0.35)	[35.236]
Endosulfan II	ND	(1.1)	[36.711]	ND	(1.1)	[36.819]	ND	(1.1)	[35.575]	ND	(1.1)	[35.236]
Endosulfan Sulfate	ND	(1.8)	[36.711]	ND	(1.8)	[36.819]	ND	(1.8)	[35.575]	ND	(1.8)	[35.236]
Endrin	0.13 J	(0.37)	[36.711]	0.11 J	(0.37)	[36.819]	ND	(0.36)	[35.575]	ND	(0.35)	[35.236]
Endrin Aldehyde	ND	(0.73)	[36.711]	ND	(0.74)	[36.819]	ND	(0.71)	[35.575]	ND	(0.7)	[35.236]
Endrin Ketone	ND	(1.8)	[36.711]	ND	(1.8)	[36.819]	ND	(1.8)	[35.575]	ND	(1.8)	[35.236]
Heptachlor	0.06 J	(0.37)	[36.711]	0.067 J	(0.37)	[36.819]	0.12 J	(0.36)	[35.575]	ND	(0.35)	[35.236]
Heptachlor epoxide	ND	(0.37)	[36.711]	ND	(0.37)	[36.819]	ND	(0.36)	[35.575]	0.17 J	(0.35)	[35.236]
Methoxychlor	ND	(1.8)	[36.711]	ND	(1.8)	[36.819]	ND	(1.8)	[35.575]	ND	(1.8)	[35.236]
PCB-1016	ND	(3.7)	[36.711]	ND	(3.7)	[36.819]	ND	(3.6)	[35.575]	ND	(3.5)	[35.236]
PCB-1221	ND	(7.3)	[36.711]	ND	(7.4)	[36.819]	ND	(7.1)	[35.575]	ND	(7)	[35.236]

Compiled: 8 ary 1994 () = Reporting Limit [] = Facto) = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 8B CAN97-8B-04 19 - 21			NONE 8B CAN97-8B-05 24 - 26			NONE 8B CAN97-8B-06 29 - 31			NONE 8B CAN97-8B-07 34 - 36		
PCB-1232	ND	(7.3)	[36.711]	ND	(7.4)	[36.819]	ND	(7.1)	[35.575]	ND	(7)	[35.236]
PCB-1242	ND	(3.7)	[36.711]	ND	(3.7)	[36.819]	ND	(3.6)	[35.575]	ND	(3.5)	[35.236]
PCB-1248	ND	(3.7)	[36.711]	ND	(3.7)	[36.819]	ND	(3.6)	[35.575]	ND	(3.5)	[35.236]
PCB-1254	ND	(7.3)	[36.711]	ND	(7.4)	[36.819]	ND	(7.1)	[35.575]	ND	(7)	[35.236]
PCB-1260	ND	(7.3)	[36.711]	ND	(7.4)	[36.819]	ND	(7.1)	[35.575]	ND	(7)	[35.236]
Toxaphene	ND	(18)	[36.711]	ND	(18)	[36.819]	ND	(18)	[35.575]	ND	(18)	[35.236]
alpha-BHC	ND	(0.37)	[36.711]	ND	(0.37)	[36.819]	ND	(0.36)	[35.575]	ND	(0.35)	[35.236]
beta-BHC	ND	(0.37)	[36.711]	ND	(0.37)	[36.819]	ND	(0.36)	[35.575]	ND	(0.35)	[35.236]
delta-BHC	ND	(0.37)	[36.711]	ND	(0.37)	[36.819]	ND	(0.36)	[35.575]	ND	(0.35)	[35.236]
gamma-BHC	ND	(0.37)	[36.711]	ND	(0.37)	[36.819]	ND	(0.36)	[35.575]	ND	(0.35)	[35.236]
SW8150 - Chlorinated Herbicides (ug/kg)												
2,4,5-T	ND	(7.3)	[36.644]	NA			NA			ND	(7)	[35.224]
2,4,5-TP (Silvex)	ND	(6.2)	[36.644]	NA			NA			ND	(6)	[35.224]
2,4-D	ND	(44)	[36.644]	NA			NA			ND	(42)	[35.224]
2,4-DB	ND	(33)	[36.644]	NA			NA			ND	(32)	[35.224]
Dalapon	ND	(210)	[36.644]	NA			NA			ND	(200)	[35.224]
Dicamba	ND	(9.9)	[36.644]	NA			NA			ND	(9.5)	[35.224]
Dichloroprop	5.6 J	(24)	[36.644]	NA			NA			250 G	(23)	[35.224]
Dinoseb	ND	(5.5)	[36.644]	NA			NA			ND	(5.3)	[35.224]
MCPA	ND	(9100)	[36.644]	NA			NA			ND	(8800)	[35.224]
MCPP	ND	(7000)	[36.644]	NA			NA			ND	(6800)	[35.224]
SW8240 - Volatile Organics (ug/kg)												
1,1,1-Trichloroethane	ND	(5.5)	[1.102]	ND	(5.5)	[1.107]	ND	(5.3)	[1.067]	ND	(5.2)	[1.043]
1,1,2,2-Tetrachloroethane	ND	(5.5)	[1.102]	ND	(5.5)	[1.107]	ND	(5.3)	[1.067]	ND	(5.2)	[1.043]
1,1,2-Trichloroethane	ND	(5.5)	[1.102]	ND	(5.5)	[1.107]	ND	(5.3)	[1.067]	ND	(5.2)	[1.043]
1,1-Dichloroethane	ND	(5.5)	[1.102]	ND	(5.5)	[1.107]	ND	(5.3)	[1.067]	ND	(5.2)	[1.043]
1,1-Dichloroethene	ND	(5.5)	[1.102]	ND	(5.5)	[1.107]	ND	(5.3)	[1.067]	ND	(5.2)	[1.043]
1,2,3-Trichloropropane	ND	(5.5)	[1.102]	ND	(5.5)	[1.107]	ND	(5.3)	[1.067]	ND	(5.2)	[1.043]
1,2-Dichloroethane	ND	(5.5)	[1.102]	ND	(5.5)	[1.107]	ND	(5.3)	[1.067]	ND	(5.2)	[1.043]

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	NONE 8B CAN97-8B-04 19 - 21			NONE 8B CAN97-8B-05 24 - 26			NONE 8B CAN97-8B-06 29 - 31			NONE 8B CAN97-8B-07 34 - 36		
1,2-Dichloropropane	ND	(5.5)	[1.102]	ND	(5.5)	[1.107]	ND	(5.3)	[1.067]	ND	(5.2)	[1.043]
2-Chloroethyl vinyl ether	ND	(11)	[1.102]	ND	(11)	[1.107]	ND	(11)	[1.067]	ND	(10)	[1.043]
2-Ethylhexyl acetate	NA			NA			6.4	()	[1.067]	NA		
2-Hexanone	ND	(55)	[1.102]	ND	(55)	[1.107]	ND	(53)	[1.067]	ND	(52)	[1.043]
4-Methyl-2-pentanone(MIBK)	ND	(55)	[1.102]	ND	(55)	[1.107]	ND	(53)	[1.067]	ND	(52)	[1.043]
Acetone	ND	(110)	[1.102]	ND	(110)	[1.107]	ND	(110)	[1.067]	ND	(100)	[1.043]
Acrolein	ND	(83)	[1.102]	ND	(83)	[1.107]	ND	(80)	[1.067]	ND	(78)	[1.043]
Acrylonitrile	ND	(55)	[1.102]	ND	(55)	[1.107]	ND	(53)	[1.067]	ND	(52)	[1.043]
Benzene	ND	(5.5)	[1.102]	ND	(5.5)	[1.107]	ND	(5.3)	[1.067]	ND	(5.2)	[1.043]
Bromodichloromethane	ND	(5.5)	[1.102]	ND	(5.5)	[1.107]	ND	(5.3)	[1.067]	ND	(5.2)	[1.043]
Bromomethane	ND	(11)	[1.102]	ND	(11)	[1.107]	ND	(11)	[1.067]	ND	(10)	[1.043]
Carbon disulfide	ND	(5.5)	[1.102]	ND	(5.5)	[1.107]	ND	(5.3)	[1.067]	ND	(5.2)	[1.043]
Carbon tetrachloride	ND	(5.5)	[1.102]	ND	(5.5)	[1.107]	ND	(5.3)	[1.067]	ND	(5.2)	[1.043]
Chlorobenzene	ND	(5.5)	[1.102]	ND	(5.5)	[1.107]	ND	(5.3)	[1.067]	ND	(5.2)	[1.043]
Chloroethane	ND	(11)	[1.102]	ND	(11)	[1.107]	ND	(11)	[1.067]	ND	(10)	[1.043]
Chloroform	ND	(5.5)	[1.102]	ND	(5.5)	[1.107]	ND	(5.3)	[1.067]	ND	(5.2)	[1.043]
Chloromethane	ND	(11)	[1.102]	ND	(11)	[1.107]	ND	(11)	[1.067]	ND	(10)	[1.043]
Dibromochloromethane	ND	(5.5)	[1.102]	ND	(5.5)	[1.107]	ND	(5.3)	[1.067]	ND	(5.2)	[1.043]
Dibromomethane	ND	(5.5)	[1.102]	ND	(5.5)	[1.107]	ND	(5.3)	[1.067]	ND	(5.2)	[1.043]
Dichlorodifluoromethane	ND	(22)	[1.102]	ND	(22)	[1.107]	ND	(21)	[1.067]	ND	(21)	[1.043]
Ethyl acetate	41	()	[1.102]	30	()	[1.107]	17	()	[1.067]	46	()	[1.043]
Ethyl benzene	ND	(5.5)	[1.102]	ND	(5.5)	[1.107]	ND	(5.3)	[1.067]	ND	(5.2)	[1.043]
Ethyl methacrylate	ND	(17)	[1.102]	ND	(17)	[1.107]	ND	(16)	[1.067]	ND	(16)	[1.043]
Iodomethane	ND	(5.5)	[1.102]	ND	(5.5)	[1.107]	ND	(5.3)	[1.067]	ND	(5.2)	[1.043]
Methyl ethyl ketone	ND	(110)	[1.102]	ND	(110)	[1.107]	ND	(110)	[1.067]	ND	(100)	[1.043]
Methylene chloride	ND	(5.5)	[1.102]	2.7 J	(5.5)	[1.107]	ND	(5.3)	[1.067]	ND	(5.2)	[1.043]
Styrene	ND	(5.5)	[1.102]	ND	(5.5)	[1.107]	ND	(5.3)	[1.067]	ND	(5.2)	[1.043]
Tetrachloroethene	ND	(5.5)	[1.102]	ND	(5.5)	[1.107]	ND	(5.3)	[1.067]	ND	(5.2)	[1.043]
Toluene	ND	(5.5)	[1.102]	ND	(5.5)	[1.107]	ND	(5.3)	[1.067]	ND	(5.2)	[1.043]

Compiled: 8 F ry 1994 () = Reporting Limit [] = Factor = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID											
	LOCATION ID	NONE			NONE			NONE			NONE	
	SAMPLE ID	88			88			88			88	
		CAN97-88-04			CAN97-88-05			CAN97-88-06			CAN97-88-07	
	BEG. DEPTH - END DEPTH (FT.)	19 - 21			24 - 26			29 - 31			34 - 36	
Tribromomethane(Bromoform)		ND	(5.5)	[1.102]	ND	(5.5)	[1.107]	ND	(5.3)	[1.067]	ND	(5.2)	[1.043]
Trichloroethene		ND	(5.5)	[1.102]	ND	(5.5)	[1.107]	ND	(5.3)	[1.067]	ND	(5.2)	[1.043]
Trichlorofluoromethane		ND	(11)	[1.102]	ND	(11)	[1.107]	ND	(11)	[1.067]	ND	(10)	[1.043]
Unknown		61	()	[1.102]	7.8	()	[1.107]	27	()	[1.067]	20	()	[1.043]
Vinyl acetate		ND	(5.5)	[1.102]	ND	(5.5)	[1.107]	ND	(5.3)	[1.067]	ND	(5.2)	[1.043]
Vinyl chloride		ND	(11)	[1.102]	ND	(11)	[1.107]	ND	(11)	[1.067]	ND	(10)	[1.043]
Xylenes		ND	(5.5)	[1.102]	ND	(5.5)	[1.107]	ND	(5.3)	[1.067]	ND	(5.2)	[1.043]
cis-1,3-Dichloropropene		ND	(5.5)	[1.102]	ND	(5.5)	[1.107]	ND	(5.3)	[1.067]	ND	(5.2)	[1.043]
trans-1,2-Dichloroethene		ND	(5.5)	[1.102]	ND	(5.5)	[1.107]	ND	(5.3)	[1.067]	ND	(5.2)	[1.043]
trans-1,3-Dichloropropene		ND	(5.5)	[1.102]	ND	(5.5)	[1.107]	ND	(5.3)	[1.067]	ND	(5.2)	[1.043]
trans-1,4-Dichloro-2-butene		ND	(11)	[1.102]	ND	(11)	[1.107]	ND	(11)	[1.067]	ND	(10)	[1.043]
SW8270 - Semivolatile Organics	(ug/kg)												
1,2,4,5-Tetrachlorobenzene		ND	(370)	[.037]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(350)	[.035]
1,2,4-Trichlorobenzene		ND	(370)	[.037]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(350)	[.035]
1,2-Dichlorobenzene		ND	(370)	[.037]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(350)	[.035]
1,2-Diphenylhydrazine		ND	(370)	[.037]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(350)	[.035]
1,3-Dichlorobenzene		ND	(370)	[.037]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(350)	[.035]
1,4-Dichlorobenzene		ND	(370)	[.037]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(350)	[.035]
1-Chloronaphthalene		ND	(370)	[.037]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(350)	[.035]
1-Naphthylamine		ND	(370)	[.037]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(350)	[.035]
2,3,4,6-Tetrachlorophenol		ND	(730)	[.037]	ND	(740)	[.037]	ND	(710)	[.036]	ND	(700)	[.035]
2,4,5-Trichlorophenol		ND	(370)	[.037]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(350)	[.035]
2,4,6-Trichlorophenol		ND	(370)	[.037]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(350)	[.035]
2,4-Dichlorophenol		ND	(370)	[.037]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(350)	[.035]
2,4-Dimethylphenol		ND	(370)	[.037]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(350)	[.035]
2,4-Dinitrophenol		ND	(1800)	[.037]	ND	(1800)	[.037]	ND	(1800)	[.036]	ND	(1800)	[.035]
2,4-Dinitrotoluene		ND	(370)	[.037]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(350)	[.035]
2,6-Dichlorophenol		ND	(370)	[.037]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(350)	[.035]
2,6-Dinitrotoluene		ND	(370)	[.037]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(350)	[.035]

Compiled: 8 February 1994 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)														
	NONE 8B CAN97-8B-04 19 - 21			NONE 8B CAN97-8B-05 24 - 26			NONE 8B CAN97-8B-06 29 - 31			NONE 8B CAN97-8B-07 34 - 36		
2-Chloronaphthalene	ND	(370)	[.037]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(350)	[.035]
2-Chlorophenol	ND	(370)	[.037]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(350)	[.035]
2-Methylnaphthalene	ND	(370)	[.037]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(350)	[.035]
2-Methylphenol(o-cresol)	ND	(370)	[.037]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(350)	[.035]
2-Naphthylamine	ND	(370)	[.037]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(350)	[.035]
2-Nitroaniline	ND	(1800)	[.037]	ND	(1800)	[.037]	ND	(1800)	[.036]	ND	(1800)	[.035]
2-Nitrophenol	ND	(370)	[.037]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(350)	[.035]
2-Picoline	ND	(370)	[.037]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(350)	[.035]
3,3'-Dichlorobenzidine	ND	(730)	[.037]	ND	(740)	[.037]	ND	(710)	[.036]	ND	(700)	[.035]
3-Methylcholanthrene	ND	(370)	[.037]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(350)	[.035]
3-Nitroaniline	ND	(1800)	[.037]	ND	(1800)	[.037]	ND	(1800)	[.036]	ND	(1800)	[.035]
4,6-Dinitro-2-methylphenol	ND	(1800)	[.037]	ND	(1800)	[.037]	ND	(1800)	[.036]	ND	(1800)	[.035]
4-Aminobiphenyl	ND	(370)	[.037]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(350)	[.035]
4-Bromophenyl phenyl ether	ND	(370)	[.037]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(350)	[.035]
4-Chloro-3-methylphenol	ND	(370)	[.037]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(350)	[.035]
4-Chlorophenyl phenyl ether	ND	(370)	[.037]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(350)	[.035]
4-Methylphenol(p-cresol)	ND	(370)	[.037]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(350)	[.035]
4-Nitroaniline	ND	(1800)	[.037]	ND	(1800)	[.037]	ND	(1800)	[.036]	ND	(1800)	[.035]
4-Nitrophenol	ND	(1800)	[.037]	ND	(1800)	[.037]	ND	(1800)	[.036]	ND	(1800)	[.035]
7,12-Dimethylbenz(a)anthracene	ND	(920)	[.037]	ND	(920)	[.037]	ND	(890)	[.036]	ND	(880)	[.035]
Acenaphthene	ND	(370)	[.037]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(350)	[.035]
Acenaphthylene	ND	(370)	[.037]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(350)	[.035]
Acetophenone	ND	(370)	[.037]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(350)	[.035]
Aniline	ND	(370)	[.037]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(350)	[.035]
Anthracene	ND	(370)	[.037]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(350)	[.035]
Benzidine	ND	(370)	[.037]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(350)	[.035]
Benzo(a)anthracene	ND	(370)	[.037]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(350)	[.035]
Benzo(a)pyrene	ND	(370)	[.037]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(350)	[.035]
Benzo(b)fluoranthene	ND	(370)	[.037]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(350)	[.035]

Compiled: 8 Fe[illegible]y 1994 () = Reporting Limit [] = Factor * = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)																
	NONE BB CAN97-BB-04 19 - 21				NONE BB CAN97-BB-05 24 - 26				NONE BB CAN97-BB-06 29 - 31				NONE BB CAN97-BB-07 34 - 36			
Benzo(g,h,i)perylene	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(350)	[	.035]
Benzo(k)fluoranthene	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(350)	[	.035]
Benzoic acid	ND	(1800)	[	.037]	ND	(1800)	[	.037]	ND	(1800)	[	.036]	ND	(1800)	[	.035]
Benzyl alcohol	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(350)	[	.035]
Butylbenzylphthalate	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(350)	[	.035]
Chlorocyclohexanol	NA				NA				590	(0)	[	.036]	NA			
Chrysene	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(350)	[	.035]
Cyclohexenol	NA				NA				780	(0)	[	.036]	NA			
Cyclohexenone	NA				NA				160	(0)	[	.036]	NA			
Di-n-octylphthalate	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(350)	[	.035]
Dibenz(a,h)anthracene	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(350)	[	.035]
Dibenz(a,j)acridine	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(350)	[	.035]
Dibenzofuran	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(350)	[	.035]
Dibutylphthalate	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(350)	[	.035]
Diethylphthalate	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(350)	[	.035]
Dimethylphenethylamine	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(350)	[	.035]
Dimethylphthalate	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(350)	[	.035]
Diphenylamine	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(350)	[	.035]
Ethyl methanesulfonate	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(350)	[	.035]
Fluoranthene	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(350)	[	.035]
Fluorene	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(350)	[	.035]
Hexachlorobenzene	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(350)	[	.035]
Hexachlorobutadiene	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(350)	[	.035]
Hexachlorocyclopentadiene	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(350)	[	.035]
Hexachloroethane	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(350)	[	.035]
Indeno(1,2,3-cd)pyrene	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(350)	[	.035]
Isophorone	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(350)	[	.035]
Methyl methanesulfonate	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(350)	[	.035]
N-Nitroso-di-n-butylamine	ND	(370)	[	.037]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(350)	[	.035]

Compiled: 8 February 1994 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	NONE 8B CAN97-8B-04 19 - 21			NONE 8B CAN97-8B-05 24 - 26			NONE 8B CAN97-8B-06 29 - 31			NONE 8B CAN97-8B-07 34 - 36		
N-Nitrosodimethylamine	ND	(370)	[.037]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(350)	[.035]
N-Nitrosodiphenylamine	ND	(370)	[.037]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(350)	[.035]
N-Nitrosodipropylamine	ND	(370)	[.037]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(350)	[.035]
N-Nitrosopiperidine	ND	(370)	[.037]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(350)	[.035]
Naphthalene	ND	(370)	[.037]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(350)	[.035]
Nitrobenzene	ND	(370)	[.037]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(350)	[.035]
Pentachlorobenzene	ND	(370)	[.037]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(350)	[.035]
Pentachloronitrobenzene	ND	(370)	[.037]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(350)	[.035]
Pentachlorophenol	ND	(1800)	[.037]	ND	(1800)	[.037]	ND	(1800)	[.036]	ND	(1800)	[.035]
Phenacetin	ND	(370)	[.037]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(350)	[.035]
Phenanthrene	ND	(370)	[.037]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(350)	[.035]
Phenol	ND	(370)	[.037]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(350)	[.035]
Pronamide	ND	(370)	[.037]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(350)	[.035]
Pyrene	ND	(370)	[.037]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(350)	[.035]
Pyridine	ND	(370)	[.037]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(350)	[.035]
Trichloropropene(s)	NA			NA			190	(0)	[.036]	390	(0)	[.035]
Unknown	220	(0)	[.037]	920	(0)	[.037]	590	(0)	[.036]	350	(0)	[.035]
Unknown alkene	NA			NA			NA			60000	(0)	[.035]
Unknown cyclic ether	660	(0)	[.037]	550	(0)	[.037]	1300	(0)	[.036]	NA		
Unknown cyclic ether B	NA			NA			NA			350	(0)	[.035]
bis(2-Chloroethoxy)methane	ND	(370)	[.037]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(350)	[.035]
bis(2-Chloroethyl)ether	ND	(370)	[.037]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(350)	[.035]
bis(2-Chloroisopropyl)ether	ND	(370)	[.037]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(350)	[.035]
bis(2-Ethylhexyl)phthalate	5300	(370)	[.037]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(350)	[.035]
p-Chloroaniline	ND	(370)	[.037]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(350)	[.035]
p-Dimethylaminoazobenzene	ND	(370)	[.037]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(350)	[.035]

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)															
	NONE 8B CAN97-8B-08 39 - 41				NONE 8B CAN97-8B-09 44 - 46				NONE 8B CAN97-8B-10 49 - 51				NONE 8B CAN97-8B-11 54 - 56			
EPA 418.1 - Total Recoverable Petroleum Hydrocarbons (mg/kg)																
Hydrocarbons	31 @	(26)	[5.288]		40 @	(26)	[5.236]		38 @	(27)	[5.394]		29 @	(26)	[5.294]	
SW8015 - Total Petroleum Hydrocarbons (ug/kg)																
Benzene (2)	NA				NA				NA				10 J	(32)	[105.000]	
Diesel (2)	NA				NA				NA				7200 GB@	(5300)	[106.383]	
Ethylbenzene (2)	NA				NA				NA				ND	(32)	[105.000]	
Gasoline (2)	NA				NA				NA				ND	(5200)	[105.000]	
Jet Fuel (2)	NA				NA				NA				ND	(11000)	[106.383]	
Kerosene (2)	NA				NA				NA				ND	(11000)	[106.383]	
Toluene (2)	NA				NA				NA				ND	(32)	[105.000]	
Xylenes (total) (2)	NA				NA				NA				18 J	(52)	[105.000]	
SW8080 - Organochlorine Pesticides and PCBs (ug/kg)																
4,4'-DDD	ND	(0.35)	[35.273]		ND	(0.35)	[34.904]		0.41 G@	(0.36)	[35.984]		0.39 @	(0.35)	[35.286]	
4,4'-DDE	ND	(0.35)	[35.273]		ND	(0.35)	[34.904]		ND	(0.36)	[35.984]		ND	(0.35)	[35.286]	
4,4'-DDT	ND	(0.71)	[35.273]		ND	(0.7)	[34.904]		ND	(0.72)	[35.984]		ND	(0.71)	[35.286]	
Aldrin	ND	(0.35)	[35.273]		ND	(0.35)	[34.904]		ND	(0.36)	[35.984]		ND	(0.35)	[35.286]	
Chlordane	ND	(1.8)	[35.273]		ND	(1.7)	[34.904]		ND	(1.8)	[35.984]		ND	(1.8)	[35.286]	
Dieldrin	ND	(0.35)	[35.273]		ND	(0.35)	[34.904]		ND	(0.36)	[35.984]		ND	(0.35)	[35.286]	
Endosulfan I	ND	(0.35)	[35.273]		ND	(0.35)	[34.904]		ND	(0.36)	[35.984]		ND	(0.35)	[35.286]	
Endosulfan II	ND	(1.1)	[35.273]		ND	(1)	[34.904]		ND	(1.1)	[35.984]		ND	(1.1)	[35.286]	
Endosulfan Sulfate	ND	(1.8)	[35.273]		ND	(1.7)	[34.904]		0.09 J	(1.8)	[35.984]		ND	(1.8)	[35.286]	
Endrin	ND	(0.35)	[35.273]		ND	(0.35)	[34.904]		0.11 J	(0.36)	[35.984]		0.1 J	(0.35)	[35.286]	
Endrin Aldehyde	ND	(0.71)	[35.273]		ND	(0.7)	[34.904]		ND	(0.72)	[35.984]		ND	(0.71)	[35.286]	
Endrin Ketone	ND	(1.8)	[35.273]		ND	(1.7)	[34.904]		ND	(1.8)	[35.984]		ND	(1.8)	[35.286]	
Heptachlor	0.1 J	(0.35)	[35.273]		ND	(0.35)	[34.904]		0.057 J	(0.36)	[35.984]		0.016 J	(0.35)	[35.286]	
Heptachlor epoxide	ND	(0.35)	[35.273]		ND	(0.35)	[34.904]		ND	(0.36)	[35.984]		ND	(0.35)	[35.286]	
Methoxychlor	ND	(1.8)	[35.273]		ND	(1.7)	[34.904]		ND	(1.8)	[35.984]		ND	(1.8)	[35.286]	
PCB-1016	ND	(3.5)	[35.273]		ND	(3.5)	[34.904]		ND	(3.6)	[35.984]		ND	(3.5)	[35.286]	
PCB-1221	ND	(7.1)	[35.273]		ND	(7)	[34.904]		ND	(7.2)	[35.984]		ND	(7.1)	[35.286]	

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TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 8B CAN97-8B-08 39 - 41			NONE 8B CAN97-8B-09 44 - 46			NONE 8B CAN97-8B-10 49 - 51			NONE 8B CAN97-8B-11 54 - 56		
PCB-1232	ND	(7.1)	[35.273]	ND	(7)	[34.904]	ND	(7.2)	[35.984]	ND	(7.1)	[35.286]
PCB-1242	ND	(3.5)	[35.273]	ND	(3.5)	[34.904]	ND	(3.6)	[35.984]	ND	(3.5)	[35.286]
PCB-1248	ND	(3.5)	[35.273]	ND	(3.5)	[34.904]	ND	(3.6)	[35.984]	ND	(3.5)	[35.286]
PCB-1254	ND	(7.1)	[35.273]	ND	(7)	[34.904]	ND	(7.2)	[35.984]	ND	(7.1)	[35.286]
PCB-1260	ND	(7.1)	[35.273]	ND	(7)	[34.904]	ND	(7.2)	[35.984]	ND	(7.1)	[35.286]
Toxaphene	ND	(18)	[35.273]	ND	(17)	[34.904]	ND	(18)	[35.984]	ND	(18)	[35.286]
alpha-BHC	ND	(0.35)	[35.273]	ND	(0.35)	[34.904]	ND	(0.36)	[35.984]	ND	(0.35)	[35.286]
beta-BHC	ND	(0.35)	[35.273]	ND	(0.35)	[34.904]	ND	(0.36)	[35.984]	ND	(0.35)	[35.286]
delta-BHC	ND	(0.35)	[35.273]	ND	(0.35)	[34.904]	ND	(0.36)	[35.984]	ND	(0.35)	[35.286]
gamma-BHC	ND	(0.35)	[35.273]	ND	(0.35)	[34.904]	ND	(0.36)	[35.984]	ND	(0.35)	[35.286]
SW8150 - Chlorinated Herbicides (ug/kg)												
2,4,5-T	NA			NA			NA			ND	(7)	[35.236]
2,4,5-TP (Silvex)	NA			NA			NA			ND	(6)	[35.236]
2,4-D	NA			NA			NA			ND	(42)	[35.236]
2,4-DB	NA			NA			NA			ND	(32)	[35.236]
Dalapon	NA			NA			NA			ND	(200)	[35.236]
Dicamba	NA			NA			NA			ND	(9.5)	[35.236]
Dichloroprop	NA			NA			NA			4.7 J	(23)	[35.236]
Dinoseb	NA			NA			NA			ND	(5.3)	[35.236]
MCPA	NA			NA			NA			ND	(8800)	[35.236]
MCPP	NA			NA			NA			ND	(6800)	[35.236]
SW8240 - Volatile Organics (ug/kg)												
1,1,1-Trichloroethane	ND	(5.3)	[1.058]	ND	(5.2)	[1.048]	ND	(5.4)	[1.080]	ND	(5.3)	[1.059]
1,1,2,2-Tetrachloroethane	ND	(5.3)	[1.058]	ND	(5.2)	[1.048]	ND	(5.4)	[1.080]	ND	(5.3)	[1.059]
1,1,2-Trichloroethane	ND	(5.3)	[1.058]	ND	(5.2)	[1.048]	ND	(5.4)	[1.080]	ND	(5.3)	[1.059]
1,1-Dichloroethane	ND	(5.3)	[1.058]	ND	(5.2)	[1.048]	ND	(5.4)	[1.080]	ND	(5.3)	[1.059]
1,1-Dichloroethene	ND	(5.3)	[1.058]	ND	(5.2)	[1.048]	ND	(5.4)	[1.080]	ND	(5.3)	[1.059]
1,2,3-Trichloropropane	ND	(5.3)	[1.058]	ND	(5.2)	[1.048]	ND	(5.4)	[1.080]	ND	(5.3)	[1.059]
1,2-Dichloroethane	ND	(5.3)	[1.058]	ND	(5.2)	[1.048]	ND	(5.4)	[1.080]	ND	(5.3)	[1.059]

Compiled: 8 Fe y 1994 () = Reporting Limit [] = Factor - = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)														
	NONE 8B CAN97-8B-08 39 - 41			NONE 8B CAN97-8B-09 44 - 46			NONE 8B CAN97-8B-10 49 - 51			NONE 8B CAN97-8B-11 54 - 56		
1,2-Dichloropropane	ND	(5.3)	[1.058]	ND	(5.2)	[1.048]	ND	(5.4)	[1.080]	ND	(5.3)	[1.059]
2-Chloroethyl vinyl ether	ND	(11)	[1.058]	ND	(10)	[1.048]	ND	(11)	[1.080]	ND	(11)	[1.059]
2-Hexanone	ND	(53)	[1.058]	ND	(52)	[1.048]	ND	(54)	[1.080]	ND	(53)	[1.059]
4-Methyl-2-pentanone(MIBK)	ND	(53)	[1.058]	ND	(52)	[1.048]	ND	(54)	[1.080]	ND	(53)	[1.059]
Acetone	ND	(110)	[1.058]	ND	(100)	[1.048]	ND	(110)	[1.080]	ND	(110)	[1.059]
Acrolein	ND	(79)	[1.058]	ND	(79)	[1.048]	ND	(81)	[1.080]	ND	(79)	[1.059]
Acrylonitrile	ND	(53)	[1.058]	ND	(52)	[1.048]	ND	(54)	[1.080]	ND	(53)	[1.059]
Benzene	ND	(5.3)	[1.058]	ND	(5.2)	[1.048]	ND	(5.4)	[1.080]	ND	(5.3)	[1.059]
Bromodichloromethane	ND	(5.3)	[1.058]	ND	(5.2)	[1.048]	ND	(5.4)	[1.080]	ND	(5.3)	[1.059]
Bromomethane	ND	(11)	[1.058]	ND	(10)	[1.048]	ND	(11)	[1.080]	ND	(11)	[1.059]
Carbon disulfide	ND	(5.3)	[1.058]	ND	(5.2)	[1.048]	ND	(5.4)	[1.080]	ND	(5.3)	[1.059]
Carbon tetrachloride	ND	(5.3)	[1.058]	ND	(5.2)	[1.048]	ND	(5.4)	[1.080]	ND	(5.3)	[1.059]
Chlorobenzene	ND	(5.3)	[1.058]	ND	(5.2)	[1.048]	ND	(5.4)	[1.080]	ND	(5.3)	[1.059]
Chloroethane	ND	(11)	[1.058]	ND	(10)	[1.048]	ND	(11)	[1.080]	ND	(11)	[1.059]
Chloroform	ND	(5.3)	[1.058]	ND	(5.2)	[1.048]	ND	(5.4)	[1.080]	ND	(5.3)	[1.059]
Chloromethane	ND	(11)	[1.058]	ND	(10)	[1.048]	ND	(11)	[1.080]	ND	(11)	[1.059]
Dibromochloromethane	ND	(5.3)	[1.058]	ND	(5.2)	[1.048]	ND	(5.4)	[1.080]	ND	(5.3)	[1.059]
Dibromomethane	ND	(5.3)	[1.058]	ND	(5.2)	[1.048]	ND	(5.4)	[1.080]	ND	(5.3)	[1.059]
Dichlorodifluoromethane	ND	(21)	[1.058]	ND	(21)	[1.048]	ND	(22)	[1.080]	ND	(21)	[1.059]
Ethyl acetate	16	()	[1.058]	10	()	[1.048]	42	()	[1.080]	71	()	[1.059]
Ethyl benzene	ND	(5.3)	[1.058]	ND	(5.2)	[1.048]	ND	(5.4)	[1.080]	ND	(5.3)	[1.059]
Ethyl methacrylate	ND	(16)	[1.058]	ND	(16)	[1.048]	ND	(16)	[1.080]	ND	(16)	[1.059]
Iodomethane	ND	(5.3)	[1.058]	ND	(5.2)	[1.048]	ND	(5.4)	[1.080]	ND	(5.3)	[1.059]
Methyl ethyl ketone	ND	(110)	[1.058]	ND	(100)	[1.048]	ND	(110)	[1.080]	ND	(110)	[1.059]
Methylene chloride	ND	(5.3)	[1.058]	ND	(5.2)	[1.048]	ND	(5.4)	[1.080]	ND	(5.3)	[1.059]
Styrene	ND	(5.3)	[1.058]	ND	(5.2)	[1.048]	ND	(5.4)	[1.080]	ND	(5.3)	[1.059]
Tetrachloroethene	ND	(5.3)	[1.058]	ND	(5.2)	[1.048]	ND	(5.4)	[1.080]	ND	(5.3)	[1.059]
Toluene	ND	(5.3)	[1.058]	ND	(5.2)	[1.048]	ND	(5.4)	[1.080]	ND	(5.3)	[1.059]
Tribromomethane(Bromoform)	ND	(5.3)	[1.058]	ND	(5.2)	[1.048]	ND	(5.4)	[1.080]	ND	(5.3)	[1.059]

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TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID				SITE ID				SITE ID				SITE ID			
	LOCATION ID				LOCATION ID				LOCATION ID				LOCATION ID			
	SAMPLE ID				SAMPLE ID				SAMPLE ID				SAMPLE ID			
	BEG. DEPTH - END DEPTH (FT.)				BEG. DEPTH - END DEPTH (FT.)				BEG. DEPTH - END DEPTH (FT.)				BEG. DEPTH - END DEPTH (FT.)			
	NONE				NONE				NONE				NONE			
	8B				8B				8B				8B			
	CAN97-8B-08				CAN97-8B-09				CAN97-8B-10				CAN97-8B-11			
	39 - 41				44 - 46				49 - 51				54 - 56			
Trichloroethene	ND	(5.3)	[	1.058]	ND	(5.2)	[	1.048]	ND	(5.4)	[	1.080]	ND	(5.3)	[	1.059]
Trichlorofluoromethane	ND	(11)	[	1.058]	ND	(10)	[	1.048]	ND	(11)	[	1.080]	ND	(11)	[	1.059]
Unknown	20	()	[	1.058]	NA				13	()	[	1.080]	38	()	[	1.059]
Vinyl acetate	ND	(5.3)	[	1.058]	ND	(5.2)	[	1.048]	ND	(5.4)	[	1.080]	ND	(5.3)	[	1.059]
Vinyl chloride	ND	(11)	[	1.058]	ND	(10)	[	1.048]	ND	(11)	[	1.080]	ND	(11)	[	1.059]
Xylenes	ND	(5.3)	[	1.058]	ND	(5.2)	[	1.048]	ND	(5.4)	[	1.080]	ND	(5.3)	[	1.059]
cis-1,3-Dichloropropene	ND	(5.3)	[	1.058]	ND	(5.2)	[	1.048]	ND	(5.4)	[	1.080]	ND	(5.3)	[	1.059]
trans-1,2-Dichloroethene	ND	(5.3)	[	1.058]	ND	(5.2)	[	1.048]	ND	(5.4)	[	1.080]	ND	(5.3)	[	1.059]
trans-1,3-Dichloropropene	ND	(5.3)	[	1.058]	ND	(5.2)	[	1.048]	ND	(5.4)	[	1.080]	ND	(5.3)	[	1.059]
trans-1,4-Dichloro-2-butene	ND	(11)	[	1.058]	ND	(10)	[	1.048]	ND	(11)	[	1.080]	ND	(11)	[	1.059]
SW8270 - Semivolatile Organics (ug/kg)																
1,2,4,5-Tetrachlorobenzene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
1,2,4-Trichlorobenzene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
1,2-Dichlorobenzene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
1,2-Diphenylhydrazine	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
1,3-Dichlorobenzene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
1,4-Dichlorobenzene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
1-Chloronaphthalene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
1-Naphthylamine	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
2,3,4,6-Tetrachlorophenol	ND	(710)	[	.035]	ND	(700)	[	.035]	ND	(720)	[	.036]	ND	(710)	[	.035]
2,4,5-Trichlorophenol	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
2,4,6-Trichlorophenol	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
2,4-Dichlorophenol	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
2,4-Dimethylphenol	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
2,4-Dinitrophenol	ND	(1800)	[	.035]	ND	(1700)	[	.035]	ND	(1800)	[	.036]	ND	(1800)	[	.035]
2,4-Dinitrotoluene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
2,6-Dichlorophenol	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
2,6-Dinitrotoluene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
2-Chloronaphthalene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]

Compiled: 8 Fr y 1994 () = Reporting Limit [] = Factor = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)														
	NONE 88 CAN97-88-08 39 - 41				NONE 88 CAN97-88-09 44 - 46				NONE 88 CAN97-88-10 49 - 51				NONE 88 CAN97-88-11 54 - 56		
2-Chlorophenol	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
2-Methylnaphthalene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
2-Methylphenol(o-cresol)	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
2-Naphthylamine	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
2-Nitroaniline	ND	(1800)	[	.035]	ND	(1700)	[	.035]	ND	(1800)	[	.036]	ND	(1800)	[	.035]
2-Nitrophenol	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
2-Picoline	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
3,3'-Dichlorobenzidine	ND	(710)	[	.035]	ND	(700)	[	.035]	ND	(720)	[	.036]	ND	(710)	[	.035]
3-Methylcholanthrene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
3-Nitroaniline	ND	(1800)	[	.035]	ND	(1700)	[	.035]	ND	(1800)	[	.036]	ND	(1800)	[	.035]
4,6-Dinitro-2-methylphenol	ND	(1800)	[	.035]	ND	(1700)	[	.035]	ND	(1800)	[	.036]	ND	(1800)	[	.035]
4-Aminobiphenyl	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
4-Bromophenyl phenyl ether	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
4-Chloro-3-methylphenol	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
4-Chlorophenyl phenyl ether	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
4-Methylphenol(p-cresol)	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
4-Nitroaniline	ND	(1800)	[	.035]	ND	(1700)	[	.035]	ND	(1800)	[	.036]	ND	(1800)	[	.035]
4-Nitrophenol	ND	(1800)	[	.035]	ND	(1700)	[	.035]	ND	(1800)	[	.036]	ND	(1800)	[	.035]
7,12-Dimethylbenz(a)anthracene	ND	(880)	[	.035]	ND	(870)	[	.035]	ND	(900)	[	.036]	ND	(880)	[	.035]
Acenaphthene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Acenaphthylene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Acetophenone	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Aniline	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Anthracene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Benzidine	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Benzo(a)anthracene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Benzo(a)pyrene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Benzo(b)fluoranthene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Benzo(g,h,i)perylene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]

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TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)																
	NONE 8B CAN97-8B-08 39 - 41				NONE 8B CAN97-8B-09 44 - 46				NONE 8B CAN97-8B-10 49 - 51				NONE 8B CAN97-8B-11 54 - 56			
Benzo(k)fluoranthene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Benzoic acid	ND	(1800)	[	.035]	ND	(1700)	[	.035]	ND	(1800)	[	.036]	ND	(1800)	[	.035]
Benzyl alcohol	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Butylbenzylphthalate	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Chrysene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Cyclohexenol	600	(0)	[	.035]	NA				NA				NA			
Cyclohexenone	180	(0)	[	.035]	NA				NA				NA			
Di-n-octylphthalate	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Dibenz(a,h)anthracene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Dibenz(a,j)acridine	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Dibenzofuran	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Dibutylphthalate	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Diethylphthalate	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Dimethylphenethylamine	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Dimethylphthalate	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Diphenylamine	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Ethyl methanesulfonate	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Fluoranthene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Fluorene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Hexachlorobenzene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Hexachlorobutadiene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Hexachlorocyclopentadiene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Hexachloroethane	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Indeno(1,2,3-cd)pyrene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Isophorone	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Methyl methanesulfonate	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
N-Nitroso-di-n-butylamine	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
N-Nitrosodimethylamine	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
N-Nitrosodiphenylamine	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]

Compiled: 8 Fe' y 1994 () = Reporting Limit [] = Factor = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)																
	NONE 88 CAN97-88-08 39 - 41				NONE 88 CAN97-88-09 44 - 46				NONE 88 CAN97-88-10 49 - 51				NONE 88 CAN97-88-11 54 - 56			
N-Nitrosodipropylamine	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
N-Nitrosopiperidine	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Naphthalene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Nitrobenzene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Pentachlorobenzene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Pentachloronitrobenzene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Pentachlorophenol	ND	(1800)	[	.035]	ND	(1700)	[	.035]	ND	(1800)	[	.036]	ND	(1800)	[	.035]
Phenacetin	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Phenanthrene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Phenol	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Pronamide	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Pyrene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Pyridine	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
Trichloropropene(s)	250	(0)	[	.035]	170	(0)	[	.035]	180	(0)	[	.036]	NA			
Unknown	320	(0)	[	.035]	170	(0)	[	.035]	400	(0)	[	.036]	280	(0)	[	.035]
Unknown cyclic ether	1600	(0)	[	.035]	630	(0)	[	.035]	NA				460	(0)	[	.035]
bis(2-Chloroethoxy)methane	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
bis(2-Chloroethyl)ether	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
bis(2-Chloroisopropyl)ether	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
bis(2-Ethylhexyl)phthalate	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
p-Chloroaniline	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]
p-Dimethylaminoazobenzene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]	ND	(350)	[	.035]

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 8B CAN97-8B-12 59 - 61			NONE 8B CAN97-8B-99 Dup of CAN97-8B-12 59 - 61			NONE 8B CAN97-8B-13 64 - 66			NONE BG CAN97-BG-01 0 - 2		
EPA 418.1 - Total Recoverable Petroleum Hydrocarbons (mg/kg)												
Hydrocarbons	ND	(25)	[5.081]	1.4 @	(25)	[5.092]	31 @	(26)	[5.269]	1700	(27)	[5.413]
SW8015 - Total Petroleum Hydrocarbons (ug/kg)												
Benzene (2)	NA			NA			NA			ND	(33)	[110.000]
Diesel (2)	NA			NA			NA			33000 GB@	(27000)	[540.541]
Ethylbenzene (2)	NA			NA			NA			ND	(33)	[110.000]
Gasoline (2)	NA			NA			NA			ND	(5500)	[110.000]
Jet fuel (2)	NA			NA			NA			ND	(54000)	[540.541]
Kerosene (2)	NA			NA			NA			ND	(54000)	[540.541]
Toluene (2)	NA			NA			NA			ND	(33)	[110.000]
Xylenes (total) (2)	NA			NA			NA			ND	(55)	[110.000]
SW8080 - Organochlorine Pesticides and PCBs (ug/kg)												
4,4'-DDD	ND	(0.34)	[33.944]	ND	(0.34)	[34.014]	0.41 G@	(0.35)	[35.137]	ND	(18)	[810.282]
4,4'-DDE	ND	(0.34)	[33.944]	ND	(0.34)	[34.014]	0.066 J	(0.35)	[35.137]	ND	(18)	[810.282]
4,4'-DDT	0.45 J	(0.68)	[33.944]	0.53 J	(0.68)	[34.014]	ND	(0.7)	[35.137]	ND	(36)	[810.282]
Aldrin	ND	(0.34)	[33.944]	ND	(0.34)	[34.014]	ND	(0.35)	[35.137]	ND	(18)	[810.282]
Chlordane	ND	(1.7)	[33.944]	ND	(1.7)	[34.014]	ND	(1.8)	[35.137]	ND	(91)	[810.282]
Dieldrin	ND	(0.34)	[33.944]	ND	(0.34)	[34.014]	ND	(0.35)	[35.137]	ND	(18)	[810.282]
Endosulfan I	ND	(0.34)	[33.944]	ND	(0.34)	[34.014]	ND	(0.35)	[35.137]	ND	(18)	[810.282]
Endosulfan II	ND	(1)	[33.944]	ND	(1)	[34.014]	ND	(1.1)	[35.137]	ND	(54)	[810.282]
Endosulfan Sulfate	ND	(1.7)	[33.944]	ND	(1.7)	[34.014]	ND	(1.8)	[35.137]	ND	(91)	[810.282]
Endrin	ND	(0.34)	[33.944]	ND	(0.34)	[34.014]	0.12 J	(0.35)	[35.137]	ND	(18)	[810.282]
Endrin Aldehyde	ND	(0.68)	[33.944]	ND	(0.68)	[34.014]	ND	(0.7)	[35.137]	ND	(36)	[810.282]
Endrin Ketone	ND	(1.7)	[33.944]	ND	(1.7)	[34.014]	ND	(1.8)	[35.137]	ND	(91)	[810.282]
Heptachlor	ND	(0.34)	[33.944]	ND	(0.34)	[34.014]	0.078 J	(0.35)	[35.137]	ND	(18)	[810.282]
Heptachlor epoxide	0.17 J	(0.34)	[33.944]	0.18 J	(0.34)	[34.014]	ND	(0.35)	[35.137]	ND	(18)	[810.282]
Methoxychlor	ND	(1.7)	[33.944]	ND	(1.7)	[34.014]	ND	(1.8)	[35.137]	ND	(91)	[810.282]
PCB-1016	ND	(3.4)	[33.944]	ND	(3.4)	[34.014]	ND	(3.5)	[35.137]	ND	(180)	[810.282]
PCB-1221	ND	(6.8)	[33.944]	ND	(6.8)	[34.014]	ND	(7)	[35.137]	ND	(360)	[810.282]

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TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 8B CAN97-8B-12 59 - 61			NONE 8B CAN97-8B-99 Dup of CAN97-8B-12 59 - 61			NONE 8B CAN97-8B-13 64 - 66			NONE 8G CAN97-8G-01 0 - 2		
PCB-1232	ND	(6.8)	[33.944]	ND	(6.8)	[34.014]	ND	(7)	[35.137]	ND	(360)	[810.282]
PCB-1242	ND	(3.4)	[33.944]	ND	(3.4)	[34.014]	ND	(3.5)	[35.137]	ND	(180)	[810.282]
PCB-1248	ND	(3.4)	[33.944]	ND	(3.4)	[34.014]	ND	(3.5)	[35.137]	ND	(180)	[810.282]
PCB-1254	ND	(6.8)	[33.944]	ND	(6.8)	[34.014]	ND	(7)	[35.137]	ND	(360)	[810.282]
PCB-1260	ND	(6.8)	[33.944]	ND	(6.8)	[34.014]	ND	(7)	[35.137]	ND	(360)	[810.282]
Toxaphene	ND	(17)	[33.944]	ND	(17)	[34.014]	ND	(18)	[35.137]	ND	(910)	[810.282]
alpha-BHC	ND	(0.34)	[33.944]	ND	(0.34)	[34.014]	ND	(0.35)	[35.137]	ND	(18)	[810.282]
beta-BHC	ND	(0.34)	[33.944]	ND	(0.34)	[34.014]	ND	(0.35)	[35.137]	ND	(18)	[810.282]
delta-BHC	ND	(0.34)	[33.944]	ND	(0.34)	[34.014]	ND	(0.35)	[35.137]	ND	(18)	[810.282]
gamma-BHC	ND	(0.34)	[33.944]	ND	(0.34)	[34.014]	ND	(0.35)	[35.137]	ND	(18)	[810.282]
SW8150 - Chlorinated Herbicides (ug/kg)												
2,4,5-T	NA			NA			NA			ND	(7.2)	[36.127]
2,4,5-TP (Silvex)	NA			NA			NA			ND	(6.1)	[36.127]
2,4-D	NA			NA			NA			ND	(43)	[36.127]
2,4-DB	NA			NA			NA			ND	(33)	[36.127]
Dalapon	NA			NA			NA			ND	(210)	[36.127]
Dicamba	NA			NA			NA			ND	(9.8)	[36.127]
Dichloroprop	NA			NA			NA			10 J	(23)	[36.127]
Dinoseb	NA			NA			NA			ND	(5.4)	[36.127]
MCPA	NA			NA			NA			ND	(9000)	[36.127]
MCPP	NA			NA			NA			680 J	(6900)	[36.127]
SW8240 - Volatile Organics (ug/kg)												
1,1,1-Trichloroethane	ND	(5.1)	[1.018]	ND	(5.1)	[1.020]	ND	(5.3)	[1.055]	ND	(5.4)	[1.087]
1,1,2,2-Tetrachloroethane	ND	(5.1)	[1.018]	ND	(5.1)	[1.020]	ND	(5.3)	[1.055]	ND	(5.4)	[1.087]
1,1,2-Trichloroethane	ND	(5.1)	[1.018]	ND	(5.1)	[1.020]	ND	(5.3)	[1.055]	ND	(5.4)	[1.087]
1,1-Dichloroethane	ND	(5.1)	[1.018]	ND	(5.1)	[1.020]	ND	(5.3)	[1.055]	ND	(5.4)	[1.087]
1,1-Dichloroethene	ND	(5.1)	[1.018]	ND	(5.1)	[1.020]	ND	(5.3)	[1.055]	ND	(5.4)	[1.087]
1,2,3-Trichloropropane	ND	(5.1)	[1.018]	ND	(5.1)	[1.020]	ND	(5.3)	[1.055]	ND	(5.4)	[1.087]
1,2-Dichloroethane	ND	(5.1)	[1.018]	ND	(5.1)	[1.020]	ND	(5.3)	[1.055]	ND	(5.4)	[1.087]

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 8B CAN97-8B-12 59 - 61			NONE 8B CAN97-8B-99 Dup of CAN97-8B-12 59 - 61			NONE 8B CAN97-8B-13 64 - 66			NONE 8G CAN97-8G-01 0 - 2		
1,2-Dichloropropane	ND	(5.1)	[1.018]	ND	(5.1)	[1.020]	ND	(5.3)	[1.055]	ND	(5.4)	[1.087]
2-Chloroethyl vinyl ether	ND	(10)	[1.018]	ND	(10)	[1.020]	ND	(11)	[1.055]	ND	(11)	[1.087]
2-Hexanone	ND	(51)	[1.018]	ND	(51)	[1.020]	ND	(53)	[1.055]	ND	(54)	[1.087]
4-Methyl-2-pentanone(MIBK)	ND	(51)	[1.018]	ND	(51)	[1.020]	ND	(53)	[1.055]	ND	(54)	[1.087]
Acetone	ND	(100)	[1.018]	ND	(100)	[1.020]	ND	(110)	[1.055]	ND	(110)	[1.087]
Acrolein	ND	(76)	[1.018]	ND	(77)	[1.020]	ND	(79)	[1.055]	ND	(82)	[1.087]
Acrylonitrile	ND	(51)	[1.018]	ND	(51)	[1.020]	ND	(53)	[1.055]	ND	(54)	[1.087]
Benzene	ND	(5.1)	[1.018]	ND	(5.1)	[1.020]	ND	(5.3)	[1.055]	ND	(5.4)	[1.087]
Bromodichloromethane	ND	(5.1)	[1.018]	ND	(5.1)	[1.020]	ND	(5.3)	[1.055]	ND	(5.4)	[1.087]
Bromomethane	ND	(10)	[1.018]	ND	(10)	[1.020]	ND	(11)	[1.055]	ND	(11)	[1.087]
Carbon disulfide	ND	(5.1)	[1.018]	ND	(5.1)	[1.020]	ND	(5.3)	[1.055]	ND	(5.4)	[1.087]
Carbon tetrachloride	ND	(5.1)	[1.018]	ND	(5.1)	[1.020]	ND	(5.3)	[1.055]	ND	(5.4)	[1.087]
Chlorobenzene	ND	(5.1)	[1.018]	ND	(5.1)	[1.020]	ND	(5.3)	[1.055]	ND	(5.4)	[1.087]
Chloroethane	ND	(10)	[1.018]	ND	(10)	[1.020]	ND	(11)	[1.055]	ND	(11)	[1.087]
Chloroform	ND	(5.1)	[1.018]	ND	(5.1)	[1.020]	ND	(5.3)	[1.055]	ND	(5.4)	[1.087]
Chloromethane	ND	(10)	[1.018]	ND	(10)	[1.020]	ND	(11)	[1.055]	ND	(11)	[1.087]
Decanal	8.3	()	[1.018]	9.2	()	[1.020]	NA			NA		
Decanal B	NA			NA			6.3	()	[1.055]	NA		
Dibromochloromethane	ND	(5.1)	[1.018]	ND	(5.1)	[1.020]	ND	(5.3)	[1.055]	ND	(5.4)	[1.087]
Dibromomethane	ND	(5.1)	[1.018]	ND	(5.1)	[1.020]	ND	(5.3)	[1.055]	ND	(5.4)	[1.087]
Dichlorodifluoromethane	ND	(20)	[1.018]	ND	(20)	[1.020]	ND	(21)	[1.055]	ND	(22)	[1.087]
Ethyl acetate	NA			NA			43	()	[1.055]	NA		
Ethyl benzene	ND	(5.1)	[1.018]	ND	(5.1)	[1.020]	ND	(5.3)	[1.055]	ND	(5.4)	[1.087]
Ethyl methacrylate	ND	(15)	[1.018]	ND	(15)	[1.020]	ND	(16)	[1.055]	ND	(16)	[1.087]
Iodomethane	ND	(5.1)	[1.018]	ND	(5.1)	[1.020]	ND	(5.3)	[1.055]	ND	(5.4)	[1.087]
Methyl ethyl ketone	ND	(100)	[1.018]	ND	(100)	[1.020]	ND	(110)	[1.055]	ND	(110)	[1.087]
Methylene chloride	ND	(5.1)	[1.018]	ND	(5.1)	[1.020]	ND	(5.3)	[1.055]	ND	(5.4)	[1.087]
Nonanal	7.1	()	[1.018]	7.1	()	[1.020]	NA			NA		
Styrene	ND	(5.1)	[1.018]	ND	(5.1)	[1.020]	ND	(5.3)	[1.055]	ND	(5.4)	[1.087]

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TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)														
	NONE 8B CAN97-8B-12 59 - 61				NONE 8B CAN97-8B-99 Dup of CAN97-8B-12 59 - 61				NONE 8B CAN97-8B-13 64 - 66				NONE BG CAN97-BG-01 0 - 2		
Tetrachloroethene	ND	(5.1)	[1.018]		ND	(5.1)	[1.020]		ND	(5.3)	[1.055]		ND	(5.4)	[1.087]
Toluene	ND	(5.1)	[1.018]		ND	(5.1)	[1.020]		ND	(5.3)	[1.055]		3.7 J	(5.4)	[1.087]
Tribromomethane(Bromoform)	ND	(5.1)	[1.018]		ND	(5.1)	[1.020]		ND	(5.3)	[1.055]		ND	(5.4)	[1.087]
Trichloroethene	ND	(5.1)	[1.018]		ND	(5.1)	[1.020]		ND	(5.3)	[1.055]		ND	(5.4)	[1.087]
Trichlorofluoromethane	ND	(10)	[1.018]		ND	(10)	[1.020]		ND	(11)	[1.055]		ND	(11)	[1.087]
Unknown	NA				NA				34	()	[1.055]		NA		
Vinyl acetate	ND	(5.1)	[1.018]		ND	(5.1)	[1.020]		ND	(5.3)	[1.055]		ND	(5.4)	[1.087]
Vinyl chloride	ND	(10)	[1.018]		ND	(10)	[1.020]		ND	(11)	[1.055]		ND	(11)	[1.087]
Xylenes	ND	(5.1)	[1.018]		ND	(5.1)	[1.020]		ND	(5.3)	[1.055]		ND	(5.4)	[1.087]
cis-1,3-Dichloropropene	ND	(5.1)	[1.018]		ND	(5.1)	[1.020]		ND	(5.3)	[1.055]		ND	(5.4)	[1.087]
trans-1,2-Dichloroethene	ND	(5.1)	[1.018]		ND	(5.1)	[1.020]		ND	(5.3)	[1.055]		ND	(5.4)	[1.087]
trans-1,3-Dichloropropene	ND	(5.1)	[1.018]		ND	(5.1)	[1.020]		ND	(5.3)	[1.055]		ND	(5.4)	[1.087]
trans-1,4-Dichloro-2-butene	ND	(10)	[1.018]		ND	(10)	[1.020]		ND	(11)	[1.055]		ND	(11)	[1.087]
SW8270 - Semivolatile Organics (ug/kg)															
1,2,4,5-Tetrachlorobenzene	ND	(340)	[.034]		ND	(340)	[.034]		ND	(350)	[.035]		ND	(360)	[.036]
1,2,4-Trichlorobenzene	ND	(340)	[.034]		ND	(340)	[.034]		ND	(350)	[.035]		ND	(360)	[.036]
1,2-Dichlorobenzene	ND	(340)	[.034]		ND	(340)	[.034]		ND	(350)	[.035]		ND	(360)	[.036]
1,2-Diphenylhydrazine	ND	(340)	[.034]		ND	(340)	[.034]		ND	(350)	[.035]		ND	(360)	[.036]
1,3-Dichlorobenzene	ND	(340)	[.034]		ND	(340)	[.034]		ND	(350)	[.035]		ND	(360)	[.036]
1,4-Dichlorobenzene	ND	(340)	[.034]		ND	(340)	[.034]		ND	(350)	[.035]		ND	(360)	[.036]
1-Chloronaphthalene	ND	(340)	[.034]		ND	(340)	[.034]		ND	(350)	[.035]		ND	(360)	[.036]
1-Naphthylamine	ND	(340)	[.034]		ND	(340)	[.034]		ND	(350)	[.035]		ND	(360)	[.036]
2,3,4,6-Tetrachlorophenol	ND	(680)	[.034]		ND	(680)	[.034]		ND	(700)	[.035]		ND	(720)	[.036]
2,4,5-Trichlorophenol	ND	(340)	[.034]		ND	(340)	[.034]		ND	(350)	[.035]		ND	(360)	[.036]
2,4,6-Trichlorophenol	ND	(340)	[.034]		ND	(340)	[.034]		ND	(350)	[.035]		ND	(360)	[.036]
2,4-Dichlorophenol	ND	(340)	[.034]		ND	(340)	[.034]		ND	(350)	[.035]		ND	(360)	[.036]
2,4-Dimethylphenol	ND	(340)	[.034]		ND	(340)	[.034]		ND	(350)	[.035]		ND	(360)	[.036]
2,4-Dinitrophenol	ND	(1700)	[.034]		ND	(1700)	[.034]		ND	(1800)	[.035]		ND	(1800)	[.036]
2,4-Dinitrotoluene	ND	(340)	[.034]		ND	(340)	[.034]		ND	(350)	[.035]		ND	(360)	[.036]

Compiled: 8 February 1994 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)																
	NONE 8B CAN97-8B-12 59 - 61				NONE 8B CAN97-8B-99 Dup of CAN97-8B-12 59 - 61				NONE 8B CAN97-8B-13 64 - 66				NONE 8G CAN97-8G-01 0 - 2			
2,6-Dichlorophenol	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(360)	[	.036]
2,6-Dinitrotoluene	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(360)	[	.036]
2-Chloronaphthalene	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(360)	[	.036]
2-Chlorophenol	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(360)	[	.036]
2-Methylnaphthalene	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(360)	[	.036]
2-Methylphenol(o-cresol)	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(360)	[	.036]
2-Naphthylamine	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(360)	[	.036]
2-Nitroaniline	ND	(1700)	[	.034]	ND	(1700)	[	.034]	ND	(1800)	[	.035]	ND	(1800)	[	.036]
2-Nitrophenol	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(360)	[	.036]
2-Picoline	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(360)	[	.036]
3,3'-Dichlorobenzidine	ND	(680)	[	.034]	ND	(680)	[	.034]	ND	(700)	[	.035]	ND	(720)	[	.036]
3-Methylcholanthrene	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(360)	[	.036]
3-Nitroaniline	ND	(1700)	[	.034]	ND	(1700)	[	.034]	ND	(1800)	[	.035]	ND	(1800)	[	.036]
4,6-Dinitro-2-methylphenol	ND	(1700)	[	.034]	ND	(1700)	[	.034]	ND	(1800)	[	.035]	ND	(1800)	[	.036]
4-Aminobiphenyl	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(360)	[	.036]
4-Bromophenyl phenyl ether	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(360)	[	.036]
4-Chloro-3-methylphenol	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(360)	[	.036]
4-Chlorophenyl phenyl ether	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(360)	[	.036]
4-Methylphenol(p-cresol)	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(360)	[	.036]
4-Nitroaniline	ND	(1700)	[	.034]	ND	(1700)	[	.034]	ND	(1800)	[	.035]	ND	(1800)	[	.036]
4-Nitrophenol	ND	(1700)	[	.034]	ND	(1700)	[	.034]	ND	(1800)	[	.035]	ND	(1800)	[	.036]
7,12-Dimethylbenz(a)anthracene	ND	(850)	[	.034]	ND	(850)	[	.034]	ND	(880)	[	.035]	ND	(910)	[	.036]
Acenaphthene	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(350)	[	.035]	55 J	(360)	[	.036]
Acenaphthylene	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(360)	[	.036]
Acetophenone	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(360)	[	.036]
Aniline	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(360)	[	.036]
Anthracene	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(350)	[	.035]	200 J	(360)	[	.036]
Benzidine	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(360)	[	.036]
Benzo(a)anthracene	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(350)	[	.035]	69 J	(360)	[	.036]

Compiled: 8 Fe y 1994 () = Reporting Limit [] = Factor = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID: NONE LOCATION ID: 8B SAMPLE ID: CAN97-8B-12 BEG. DEPTH - END DEPTH (FT.): 59 - 61				SITE ID: NONE LOCATION ID: 8B SAMPLE ID: CAN97-8B-99 Dup of CAN97-8B-12 BEG. DEPTH - END DEPTH (FT.): 59 - 61				SITE ID: NONE LOCATION ID: 8B SAMPLE ID: CAN97-8B-13 BEG. DEPTH - END DEPTH (FT.): 64 - 66				SITE ID: NONE LOCATION ID: BG SAMPLE ID: CAN97-BG-01 BEG. DEPTH - END DEPTH (FT.): 0 - 2			
Benzo(a)pyrene	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(360)	[	.036]
Benzo(b)fluoranthene	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(360)	[	.036]
Benzo(g,h,i)perylene	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(360)	[	.036]
Benzo(k)fluoranthene	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(360)	[	.036]
Benzoic acid	ND	(1700)	[	.034]	ND	(1700)	[	.034]	ND	(1800)	[	.035]	ND	(1800)	[	.036]
Benzyl alcohol	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(360)	[	.036]
Butylbenzylphthalate	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(360)	[	.036]
Chrysene	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(350)	[	.035]	96 J	(360)	[	.036]
Cyclohexanone	140	(0)	[	.034]	NA				NA				NA			
Cyclohexenol	240	(0)	[	.034]	NA				950	(0)	[	.035]	NA			
Cyclohexenone B	NA				NA				NA				220	(0)	[	.036]
Di-n-octylphthalate	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(360)	[	.036]
Dibenz(a,h)anthracene	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(360)	[	.036]
Dibenz(a,j)acridine	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(360)	[	.036]
Dibenzofuran	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(360)	[	.036]
Dibutylphthalate	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(360)	[	.036]
Diethylphthalate	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(360)	[	.036]
Dimethylphenethylamine	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(360)	[	.036]
Dimethylphthalate	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(360)	[	.036]
Diphenylamine	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(360)	[	.036]
Ethyl methanesulfonate	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(360)	[	.036]
Fluoranthene	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(350)	[	.035]	290 J	(360)	[	.036]
Fluorene	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(350)	[	.035]	64 J	(360)	[	.036]
Hexachlorobenzene	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(360)	[	.036]
Hexachlorobutadiene	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(360)	[	.036]
Hexachlorocyclopentadiene	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(360)	[	.036]
Hexachloroethane	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(360)	[	.036]
Indeno(1,2,3-cd)pyrene	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(360)	[	.036]
Isophorone	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(350)	[	.035]	ND	(360)	[	.036]

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	NONE BB CAN97-BB-12 59 - 61	NONE BB CAN97-BB-99 Dup of CAN97-BB-12 59 - 61	NONE BB CAN97-BB-13 64 - 66	NONE BG CAN97-BG-01 0 - 2
Methyl methanesulfonate	ND (340) [.034]	ND (340) [.034]	ND (350) [.035]	ND (360) [.036]
N-Nitroso-di-n-butylamine	ND (340) [.034]	ND (340) [.034]	ND (350) [.035]	ND (360) [.036]
N-Nitrosodimethylamine	ND (340) [.034]	ND (340) [.034]	ND (350) [.035]	ND (360) [.036]
N-Nitrosodiphenylamine	ND (340) [.034]	ND (340) [.034]	ND (350) [.035]	ND (360) [.036]
N-Nitrosodipropylamine	ND (340) [.034]	ND (340) [.034]	ND (350) [.035]	ND (360) [.036]
N-Nitrosopiperidine	ND (340) [.034]	ND (340) [.034]	ND (350) [.035]	ND (360) [.036]
Naphthalene	ND (340) [.034]	ND (340) [.034]	ND (350) [.035]	ND (360) [.036]
Nitrobenzene	ND (340) [.034]	ND (340) [.034]	ND (350) [.035]	ND (360) [.036]
Pentachlorobenzene	ND (340) [.034]	ND (340) [.034]	ND (350) [.035]	ND (360) [.036]
Pentachloronitrobenzene	ND (340) [.034]	ND (340) [.034]	ND (350) [.035]	ND (360) [.036]
Pentachlorophenol	ND (1700) [.034]	ND (1700) [.034]	ND (1800) [.035]	ND (1800) [.036]
Phenacetin	ND (340) [.034]	ND (340) [.034]	ND (350) [.035]	ND (360) [.036]
Phenanthrene	ND (340) [.034]	ND (340) [.034]	ND (350) [.035]	430 @ (360) [.036]
Phenol	ND (340) [.034]	ND (340) [.034]	ND (350) [.035]	ND (360) [.036]
Pronamide	ND (340) [.034]	ND (340) [.034]	ND (350) [.035]	ND (360) [.036]
Pyrene	ND (340) [.034]	ND (340) [.034]	ND (350) [.035]	270 J (360) [.036]
Pyridine	ND (340) [.034]	ND (340) [.034]	ND (350) [.035]	ND (360) [.036]
Trichloropropene(s)	NA	340 (0) [.034]	140 (0) [.035]	NA
Unknown	510 (0) [.034]	540 (0) [.034]	320 (0) [.035]	580 (0) [.036]
Unknown alkene	41000 (0) [.034]	44000 (0) [.034]	NA	NA
Unknown cyclic ether	NA	NA	700 (0) [.035]	NA
Unknown cyclic ether B	1200 (0) [.034]	240 (0) [.034]	NA	360 (0) [.036]
bis(2-Chloroethoxy)methane	ND (340) [.034]	ND (340) [.034]	ND (350) [.035]	ND (360) [.036]
bis(2-Chloroethyl)ether	ND (340) [.034]	ND (340) [.034]	ND (350) [.035]	ND (360) [.036]
bis(2-Chloroisopropyl)ether	ND (340) [.034]	ND (340) [.034]	ND (350) [.035]	ND (360) [.036]
bis(2-Ethylhexyl)phthalate	28 J (340) [.034]	ND (340) [.034]	ND (350) [.035]	92 J (360) [.036]
p-Chloroaniline	ND (340) [.034]	ND (340) [.034]	ND (350) [.035]	ND (360) [.036]
p-Dimethylaminoazobenzene	ND (340) [.034]	ND (340) [.034]	ND (350) [.035]	ND (360) [.036]

Compiled: 8 F[illegible]y 1994 () = Reporting Limit [] = Factor = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)												
	NONE BG CAN97-BG-05 19 - 21			NONE BG CAN97-BG-07 32 - 34			NONE BG CAN97-BG-08 34 - 36			NONE BG CAN97-BG-09 39 - 41		
EPA 418.1 - Total Recoverable Petroleum Hydrocarbons (mg/kg)												
Hydrocarbons	ND	(26)	[5.273]	ND	(26)	[5.240]	ND	(26)	[5.278]	ND	(27)	[5.392]
SW8015 - Total Petroleum Hydrocarbons (ug/kg)												
Benzene (2)	NA			ND	(31)	[102.000]	ND	(31)	[103.000]	NA		
Diesel (2)	NA			7900 GB@	(2600)	[52.356]	6200 GB@	(2600)	[52.632]	NA		
Ethylbenzene (2)	NA			ND	(31)	[102.000]	ND	(31)	[103.000]	NA		
Gasoline (2)	NA			ND	(5100)	[102.000]	ND	(5200)	[103.000]	NA		
Jet fuel (2)	NA			ND	(5200)	[52.356]	ND	(5300)	[52.632]	NA		
Kerosene (2)	NA			ND	(5200)	[52.356]	ND	(5300)	[52.632]	NA		
Toluene (2)	NA			ND	(31)	[102.000]	ND	(31)	[103.000]	NA		
Xylenes (total) (2)	NA			ND	(51)	[102.000]	ND	(52)	[103.000]	NA		
SW8080 - Organochlorine Pesticides and PCBs (ug/kg)												
4,4'-DDD	ND	(0.35)	[35.311]	ND	(0.35)	[35.075]	ND	(0.35)	[35.249]	ND	(0.36)	[35.932]
4,4'-DDE	ND	(0.35)	[35.311]	ND	(0.35)	[35.075]	ND	(0.35)	[35.249]	ND	(0.36)	[35.932]
4,4'-DDT	ND	(0.71)	[35.311]	ND	(0.7)	[35.075]	ND	(0.7)	[35.249]	ND	(0.72)	[35.932]
Aldrin	ND	(0.35)	[35.311]	ND	(0.35)	[35.075]	ND	(0.35)	[35.249]	ND	(0.36)	[35.932]
Chlordane	ND	(1.8)	[35.311]	ND	(1.8)	[35.075]	ND	(1.8)	[35.249]	ND	(1.8)	[35.932]
Dieldrin	ND	(0.35)	[35.311]	ND	(0.35)	[35.075]	ND	(0.35)	[35.249]	ND	(0.36)	[35.932]
Endosulfan I	ND	(0.35)	[35.311]	ND	(0.35)	[35.075]	ND	(0.35)	[35.249]	ND	(0.36)	[35.932]
Endosulfan II	ND	(1.1)	[35.311]	ND	(1.1)	[35.075]	ND	(1.1)	[35.249]	ND	(1.1)	[35.932]
Endosulfan Sulfate	ND	(1.8)	[35.311]	ND	(1.8)	[35.075]	ND	(1.8)	[35.249]	ND	(1.8)	[35.932]
Endrin	ND	(0.35)	[35.311]	ND	(0.35)	[35.075]	ND	(0.35)	[35.249]	ND	(0.36)	[35.932]
Endrin Aldehyde	ND	(0.71)	[35.311]	ND	(0.7)	[35.075]	ND	(0.7)	[35.249]	ND	(0.72)	[35.932]
Endrin Ketone	ND	(1.8)	[35.311]	ND	(1.8)	[35.075]	ND	(1.8)	[35.249]	ND	(1.8)	[35.932]
Heptachlor	ND	(0.35)	[35.311]	ND	(0.35)	[35.075]	ND	(0.35)	[35.249]	ND	(0.36)	[35.932]
Heptachlor epoxide	ND	(0.35)	[35.311]	ND	(0.35)	[35.075]	ND	(0.35)	[35.249]	ND	(0.36)	[35.932]
Methoxychlor	ND	(1.8)	[35.311]	ND	(1.8)	[35.075]	ND	(1.8)	[35.249]	ND	(1.8)	[35.932]
PCB-1016	ND	(3.5)	[35.311]	ND	(3.5)	[35.075]	ND	(3.5)	[35.249]	ND	(3.6)	[35.932]
PCB-1221	ND	(7.1)	[35.311]	ND	(7)	[35.075]	ND	(7)	[35.249]	ND	(7.2)	[35.932]

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TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE BG CAN97-BG-05 19 - 21			NONE BG CAN97-BG-07 32 - 34			NONE BG CAN97-BG-08 34 - 36			NONE BG CAN97-BG-09 39 - 41		
PCB-1232	ND	(7.1)	[35.311]	ND	(7)	[35.075]	ND	(7)	[35.249]	ND	(7.2)	[35.932]
PCB-1242	ND	(3.5)	[35.311]	ND	(3.5)	[35.075]	ND	(3.5)	[35.249]	ND	(3.6)	[35.932]
PCB-1248	ND	(3.5)	[35.311]	ND	(3.5)	[35.075]	ND	(3.5)	[35.249]	ND	(3.6)	[35.932]
PCB-1254	ND	(7.1)	[35.311]	ND	(7)	[35.075]	ND	(7)	[35.249]	ND	(7.2)	[35.932]
PCB-1260	ND	(7.1)	[35.311]	ND	(7)	[35.075]	ND	(7)	[35.249]	ND	(7.2)	[35.932]
Toxaphene	ND	(18)	[35.311]	ND	(18)	[35.075]	ND	(18)	[35.249]	ND	(18)	[35.932]
alpha-BHC	ND	(0.35)	[35.311]	ND	(0.35)	[35.075]	ND	(0.35)	[35.249]	ND	(0.36)	[35.932]
beta-BHC	ND	(0.35)	[35.311]	ND	(0.35)	[35.075]	ND	(0.35)	[35.249]	ND	(0.36)	[35.932]
delta-BHC	ND	(0.35)	[35.311]	ND	(0.35)	[35.075]	ND	(0.35)	[35.249]	ND	(0.36)	[35.932]
gamma-BHC	ND	(0.35)	[35.311]	ND	(0.35)	[35.075]	ND	(0.35)	[35.249]	ND	(0.36)	[35.932]
SW8150 - Chlorinated Herbicides (ug/kg)												
2,4,5-T	NA			ND	(7)	[34.941]	ND	(7)	[35.224]	NA		
2,4,5-TP (Silvex)	NA			ND	(5.9)	[34.941]	ND	(6)	[35.224]	NA		
2,4-D	NA			ND	(42)	[34.941]	ND	(42)	[35.224]	NA		
2,4-DB	NA			ND	(32)	[34.941]	ND	(32)	[35.224]	NA		
Dalapon	NA			ND	(200)	[34.941]	ND	(200)	[35.224]	NA		
Dicamba	NA			ND	(9.4)	[34.941]	ND	(9.5)	[35.224]	NA		
Dichloroprop	NA			ND	(23)	[34.941]	ND	(23)	[35.224]	NA		
Dinoseb	NA			ND	(5.2)	[34.941]	ND	(5.3)	[35.224]	NA		
MCPA	NA			ND	(8700)	[34.941]	ND	(8800)	[35.224]	NA		
MCPP	NA			ND	(6700)	[34.941]	ND	(6800)	[35.224]	NA		
SW8240 - Volatile Organics (ug/kg)												
1,1,1-Trichloroethane	ND	(5.3)	[1.059]	2.9 J	(5.3)	[1.053]	ND	(5.3)	[1.058]	ND	(5.4)	[1.080]
1,1,2,2-Tetrachloroethane	ND	(5.3)	[1.059]	1.5 J	(5.3)	[1.053]	ND	(5.3)	[1.058]	ND	(5.4)	[1.080]
1,1,2-Trichloroethane	ND	(5.3)	[1.059]	ND	(5.3)	[1.053]	ND	(5.3)	[1.058]	ND	(5.4)	[1.080]
1,1-Dichloroethane	ND	(5.3)	[1.059]	ND	(5.3)	[1.053]	ND	(5.3)	[1.058]	ND	(5.4)	[1.080]
1,1-Dichloroethene	ND	(5.3)	[1.059]	ND	(5.3)	[1.053]	ND	(5.3)	[1.058]	ND	(5.4)	[1.080]
1,2,3-Trichloropropane	ND	(5.3)	[1.059]	ND	(5.3)	[1.053]	ND	(5.3)	[1.058]	ND	(5.4)	[1.080]
1,2-Dichloroethane	ND	(5.3)	[1.059]	ND	(5.3)	[1.053]	ND	(5.3)	[1.058]	ND	(5.4)	[1.080]

Compiled: 8 Fe v 1994 () = Reporting Limit [] = Factor Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE BG CAN97-BG-05 19 - 21			NONE BG CAN97-BG-07 32 - 34			NONE BG CAN97-BG-08 34 - 36			NONE BG CAN97-BG-09 39 - 41		
1,2-Dichloropropane	ND	(5.3)	[1.059]	ND	(5.3)	[1.053]	ND	(5.3)	[1.058]	ND	(5.4)	[1.080]
2-Chloroethyl vinyl ether	ND	(11)	[1.059]	ND	(11)	[1.053]	ND	(11)	[1.058]	ND	(11)	[1.080]
2-Hexanone	ND	(53)	[1.059]	ND	(53)	[1.053]	ND	(53)	[1.058]	ND	(54)	[1.080]
4-Methyl-2-pentanone(MIBK)	ND	(53)	[1.059]	ND	(53)	[1.053]	ND	(53)	[1.058]	ND	(54)	[1.080]
Acetone	ND	(110)	[1.059]	ND	(110)	[1.053]	ND	(110)	[1.058]	ND	(110)	[1.080]
Acrolein	ND	(79)	[1.059]	ND	(79)	[1.053]	ND	(79)	[1.058]	ND	(81)	[1.080]
Acrylonitrile	ND	(53)	[1.059]	ND	(53)	[1.053]	ND	(53)	[1.058]	ND	(54)	[1.080]
Benzene	ND	(5.3)	[1.059]	1.6 J	(5.3)	[1.053]	ND	(5.3)	[1.058]	ND	(5.4)	[1.080]
Bromodichloromethane	ND	(5.3)	[1.059]	ND	(5.3)	[1.053]	ND	(5.3)	[1.058]	ND	(5.4)	[1.080]
Bromomethane	ND	(11)	[1.059]	ND	(11)	[1.053]	ND	(11)	[1.058]	ND	(11)	[1.080]
Carbon disulfide	ND	(5.3)	[1.059]	ND	(5.3)	[1.053]	ND	(5.3)	[1.058]	ND	(5.4)	[1.080]
Carbon tetrachloride	ND	(5.3)	[1.059]	ND	(5.3)	[1.053]	ND	(5.3)	[1.058]	ND	(5.4)	[1.080]
Chlorobenzene	ND	(5.3)	[1.059]	2 J	(5.3)	[1.053]	ND	(5.3)	[1.058]	ND	(5.4)	[1.080]
Chloroethane	ND	(11)	[1.059]	ND	(11)	[1.053]	ND	(11)	[1.058]	ND	(11)	[1.080]
Chloroform	ND	(5.3)	[1.059]	ND	(5.3)	[1.053]	ND	(5.3)	[1.058]	ND	(5.4)	[1.080]
Chloromethane	ND	(11)	[1.059]	ND	(11)	[1.053]	ND	(11)	[1.058]	ND	(11)	[1.080]
Dibromochloromethane	ND	(5.3)	[1.059]	ND	(5.3)	[1.053]	ND	(5.3)	[1.058]	ND	(5.4)	[1.080]
Dibromomethane	ND	(5.3)	[1.059]	ND	(5.3)	[1.053]	ND	(5.3)	[1.058]	ND	(5.4)	[1.080]
Dichlorodifluoromethane	ND	(21)	[1.059]	ND	(21)	[1.053]	ND	(21)	[1.058]	ND	(22)	[1.080]
Ethyl acetate	7.1	()	[1.059]	NA			15	()	[1.058]	10	()	[1.080]
Ethyl benzene	0.2 J	(5.3)	[1.059]	2.4 J	(5.3)	[1.053]	0.37 J	(5.3)	[1.058]	ND	(5.4)	[1.080]
Ethyl methacrylate	ND	(16)	[1.059]	ND	(16)	[1.053]	ND	(16)	[1.058]	ND	(16)	[1.080]
Iodomethane	ND	(5.3)	[1.059]	ND	(5.3)	[1.053]	ND	(5.3)	[1.058]	ND	(5.4)	[1.080]
Methyl ethyl ketone	ND	(110)	[1.059]	ND	(110)	[1.053]	ND	(110)	[1.058]	ND	(110)	[1.080]
Methylene chloride	2.4 J	(5.3)	[1.059]	4.1 J	(5.3)	[1.053]	ND	(5.3)	[1.058]	ND	(5.4)	[1.080]
Styrene	ND	(5.3)	[1.059]	ND	(5.3)	[1.053]	ND	(5.3)	[1.058]	ND	(5.4)	[1.080]
Tetrachloroethene	ND	(5.3)	[1.059]	3.1 J	(5.3)	[1.053]	ND	(5.3)	[1.058]	ND	(5.4)	[1.080]
Toluene	0.28 J	(5.3)	[1.059]	2 J	(5.3)	[1.053]	0.72 J	(5.3)	[1.058]	ND	(5.4)	[1.080]
Tribromomethane(Bromoform)	ND	(5.3)	[1.059]	ND	(5.3)	[1.053]	ND	(5.3)	[1.058]	ND	(5.4)	[1.080]

Compiled: 8 February 1994 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)												
	NONE BG CAN97-BG-05 19 - 21			NONE BG CAN97-BG-07 32 - 34			NONE BG CAN97-BG-08 34 - 36			NONE BG CAN97-BG-09 39 - 41		
Trichloroethene	ND	(5.3)	[1.059]	2.3 J	(5.3)	[1.053]	ND	(5.3)	[1.058]	ND	(5.4)	[1.080]
Trichlorofluoromethane	ND	(11)	[1.059]	ND	(11)	[1.053]	ND	(11)	[1.058]	ND	(11)	[1.080]
Vinyl acetate	ND	(5.3)	[1.059]	ND	(5.3)	[1.053]	ND	(5.3)	[1.058]	ND	(5.4)	[1.080]
Vinyl chloride	ND	(11)	[1.059]	ND	(11)	[1.053]	ND	(11)	[1.058]	ND	(11)	[1.080]
Xylenes	0.27 J	(5.3)	[1.059]	7.9 @	(5.3)	[1.053]	0.81 J	(5.3)	[1.058]	ND	(5.4)	[1.080]
cis-1,3-Dichloropropene	ND	(5.3)	[1.059]	ND	(5.3)	[1.053]	ND	(5.3)	[1.058]	ND	(5.4)	[1.080]
trans-1,2-Dichloroethene	ND	(5.3)	[1.059]	ND	(5.3)	[1.053]	ND	(5.3)	[1.058]	ND	(5.4)	[1.080]
trans-1,3-Dichloropropene	ND	(5.3)	[1.059]	ND	(5.3)	[1.053]	ND	(5.3)	[1.058]	ND	(5.4)	[1.080]
trans-1,4-Dichloro-2-butene	ND	(11)	[1.059]	ND	(11)	[1.053]	ND	(11)	[1.058]	ND	(11)	[1.080]
SW8270 - Semivolatile Organics (ug/kg)												
1,2,4,5-Tetrachlorobenzene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
1,2,4-Trichlorobenzene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
1,2-Dichlorobenzene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
1,2-Diphenylhydrazine	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
1,3-Dichlorobenzene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
1,4-Dichlorobenzene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
1-Chloronaphthalene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
1-Naphthylamine	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
2,3,4,6-Tetrachlorophenol	ND	(700)	[.035]	ND	(700)	[.035]	ND	(700)	[.035]	ND	(720)	[.036]
2,4,5-Trichlorophenol	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
2,4,6-Trichlorophenol	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
2,4-Dichlorophenol	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
2,4-Dimethylphenol	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
2,4-Dinitrophenol	ND	(1800)	[.035]	ND	(1700)	[.035]	ND	(1800)	[.035]	ND	(1800)	[.036]
2,4-Dinitrotoluene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
2,6-Dichlorophenol	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
2,6-Dinitrotoluene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
2-Chloronaphthalene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
2-Chlorophenol	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]

Compiled: 8 F ry 1994 () = Reporting Limit [] = Factor = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)												
	NONE BG CAN97-BG-05 19 - 21			NONE BG CAN97-BG-07 32 - 34			NONE BG CAN97-BG-08 34 - 36			NONE BG CAN97-BG-09 39 - 41		
2-Methylnaphthalene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
2-Methylphenol(o-cresol)	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
2-Naphthylamine	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
2-Nitroaniline	ND	(1800)	[.035]	ND	(1700)	[.035]	ND	(1800)	[.035]	ND	(1800)	[.036]
2-Nitrophenol	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
2-Picoline	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
3,3'-Dichlorobenzidine	ND	(700)	[.035]	ND	(700)	[.035]	ND	(700)	[.035]	ND	(720)	[.036]
3-Methylcholanthrene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
3-Nitroaniline	ND	(1800)	[.035]	ND	(1700)	[.035]	ND	(1800)	[.035]	ND	(1800)	[.036]
4,6-Dinitro-2-methylphenol	ND	(1800)	[.035]	ND	(1700)	[.035]	ND	(1800)	[.035]	ND	(1800)	[.036]
4-Aminobiphenyl	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
4-Bromophenyl phenyl ether	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
4-Chloro-3-methylphenol	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
4-Chlorophenyl phenyl ether	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
4-Methylphenol(p-cresol)	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
4-Nitroaniline	ND	(1800)	[.035]	ND	(1700)	[.035]	ND	(1800)	[.035]	ND	(1800)	[.036]
4-Nitrophenol	ND	(1800)	[.035]	ND	(1700)	[.035]	ND	(1800)	[.035]	ND	(1800)	[.036]
7,12-Dimethylbenz(a)anthracene	ND	(880)	[.035]	ND	(870)	[.035]	ND	(880)	[.035]	ND	(900)	[.036]
Acenaphthene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
Acenaphthylene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
Acetophenone	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
Aniline	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
Anthracene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
Benzidine	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
Benzo(a)anthracene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
Benzo(a)pyrene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
Benzo(b)fluoranthene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
Benzo(g,h,i)perylene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]
Benzo(k)fluoranthene	ND	(350)	[.035]	ND	(350)	[.035]	ND	(350)	[.035]	ND	(360)	[.036]

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)																
	NONE BG CAN97-BG-05 19 - 21				NONE BG CAN97-BG-07 32 - 34				NONE BG CAN97-BG-08 34 - 36				NONE BG CAN97-BG-09 39 - 41			
Benzoic acid	ND	(1800)	[	.035]	ND	(1700)	[	.035]	ND	(1800)	[	.035]	ND	(1800)	[	.036]
Benzyl alcohol	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Butylbenzylphthalate	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Chrysene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Cyclohexenol	180	(0)	[	.035]	NA				NA				NA			
Di-n-octylphthalate	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Dibenz(a,h)anthracene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Dibenz(a,j)acridine	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Dibenzofuran	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Dibutylphthalate	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Diethylphthalate	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Dimethylphenethylamine	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Dimethylphthalate	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Diphenylamine	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Ethyl methanesulfonate	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Fluoranthene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Fluorene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Hexachlorobenzene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Hexachlorobutadiene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Hexachlorocyclopentadiene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Hexachloroethane	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Indeno(1,2,3-cd)pyrene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Isophorone	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Methyl methanesulfonate	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
N-Nitroso-di-n-butylamine	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
N-Nitrosodimethylamine	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
N-Nitrosodiphenylamine	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
N-Nitrosodipropylamine	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
N-Nitrosopiperidine	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]

Compiled: 8 F ry 1994 () = Reporting Limit [] = Factor = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)															
	NONE BG CAN97-BG-05 19 - 21				NONE BG CAN97-BG-07 32 - 34				NONE BG CAN97-BG-08 34 - 36				NONE BG CAN97-BG-09 39 - 41			
Naphthalene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Nitrobenzene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Pentachlorobenzene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Pentachloronitrobenzene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Pentachlorophenol	ND	(1800)	[	.035]	ND	(1700)	[	.035]	ND	(1800)	[	.035]	ND	(1800)	[	.036]
Phenacetin	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Phenanthrene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Phenol	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Pronamide	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Pyrene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Pyridine	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
Trichloropropene(s)	880	(0)	[	.035]	730	(0)	[	.035]	780	(0)	[	.035]	720	(0)	[	.036]
Unknown	980	(0)	[	.035]	210	(0)	[	.035]	840	(0)	[	.035]	250	(0)	[	.036]
Unknown B	210	(0)	[	.035]	NA				350	(0)	[	.035]	NA			
Unknown cyclic ether B	630	(0)	[	.035]	560	(0)	[	.035]	320	(0)	[	.035]	570	(0)	[	.036]
bis(2-Chloroethoxy)methane	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
bis(2-Chloroethyl)ether	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
bis(2-Chloroisopropyl)ether	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
bis(2-Ethylhexyl)phthalate	480 @	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
p-Chloroaniline	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]
p-Dimethylaminoazobenzene	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(350)	[	.035]	ND	(360)	[	.036]

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)										
	NONE BG CAN97-BG-10 44 - 46			NONE BG CAN97-BG-11 51 - 53			NONE BG CAN97-BG-12 56 - 58			NONE BG CAN97-BG-13 59 - 61		
EPA 418.1 - Total Recoverable Petroleum Hydrocarbons (mg/kg)												
Hydrocarbons	ND	(27)	[5.406]	ND	(25)	[5.100]	ND	(25)	[5.084]	ND	(25)	[5.063]
SW8080 - Organochlorine Pesticides and PCBs (ug/kg)												
4,4'-DDD	ND	(0.36)	[36.023]	ND	(0.34)	[34.060]	ND	(0.34)	[33.991]	ND	(0.34)	[33.784]
4,4'-DDE	ND	(0.36)	[36.023]	ND	(0.34)	[34.060]	ND	(0.34)	[33.991]	ND	(0.34)	[33.784]
4,4'-DDT	ND	(0.72)	[36.023]	ND	(0.68)	[34.060]	ND	(0.68)	[33.991]	ND	(0.68)	[33.784]
Aldrin	ND	(0.36)	[36.023]	ND	(0.34)	[34.060]	ND	(0.34)	[33.991]	ND	(0.34)	[33.784]
Chlordane	ND	(1.8)	[36.023]	ND	(1.7)	[34.060]	ND	(1.7)	[33.991]	ND	(1.7)	[33.784]
Dieldrin	ND	(0.36)	[36.023]	ND	(0.34)	[34.060]	ND	(0.34)	[33.991]	ND	(0.34)	[33.784]
Endosulfan I	ND	(0.36)	[36.023]	ND	(0.34)	[34.060]	ND	(0.34)	[33.991]	ND	(0.34)	[33.784]
Endosulfan II	ND	(1.1)	[36.023]	ND	(1)	[34.060]	ND	(1)	[33.991]	ND	(1)	[33.784]
Endosulfan Sulfate	ND	(1.8)	[36.023]	ND	(1.7)	[34.060]	ND	(1.7)	[33.991]	ND	(1.7)	[33.784]
Endrin	ND	(0.36)	[36.023]	ND	(0.34)	[34.060]	ND	(0.34)	[33.991]	ND	(0.34)	[33.784]
Endrin Aldehyde	ND	(0.72)	[36.023]	ND	(0.68)	[34.060]	ND	(0.68)	[33.991]	ND	(0.68)	[33.784]
Endrin Ketone	ND	(1.8)	[36.023]	ND	(1.7)	[34.060]	ND	(1.7)	[33.991]	ND	(1.7)	[33.784]
Heptachlor	ND	(0.36)	[36.023]	ND	(0.34)	[34.060]	ND	(0.34)	[33.991]	ND	(0.34)	[33.784]
Heptachlor epoxide	ND	(0.36)	[36.023]	ND	(0.34)	[34.060]	ND	(0.34)	[33.991]	ND	(0.34)	[33.784]
Methoxychlor	ND	(1.8)	[36.023]	ND	(1.7)	[34.060]	ND	(1.7)	[33.991]	ND	(1.7)	[33.784]
PCB-1016	ND	(3.6)	[36.023]	ND	(3.4)	[34.060]	ND	(3.4)	[33.991]	ND	(3.4)	[33.784]
PCB-1221	ND	(7.2)	[36.023]	ND	(6.8)	[34.060]	ND	(6.8)	[33.991]	ND	(6.8)	[33.784]
PCB-1232	ND	(7.2)	[36.023]	ND	(6.8)	[34.060]	ND	(6.8)	[33.991]	ND	(6.8)	[33.784]
PCB-1242	ND	(3.6)	[36.023]	ND	(3.4)	[34.060]	ND	(3.4)	[33.991]	ND	(3.4)	[33.784]
PCB-1248	ND	(3.6)	[36.023]	ND	(3.4)	[34.060]	ND	(3.4)	[33.991]	ND	(3.4)	[33.784]
PCB-1254	ND	(7.2)	[36.023]	ND	(6.8)	[34.060]	ND	(6.8)	[33.991]	ND	(6.8)	[33.784]
PCB-1260	ND	(7.2)	[36.023]	ND	(6.8)	[34.060]	ND	(6.8)	[33.991]	ND	(6.8)	[33.784]
Toxaphene	ND	(18)	[36.023]	ND	(17)	[34.060]	ND	(17)	[33.991]	ND	(17)	[33.784]
alpha-BHC	ND	(0.36)	[36.023]	ND	(0.34)	[34.060]	ND	(0.34)	[33.991]	ND	(0.34)	[33.784]
beta-BHC	ND	(0.36)	[36.023]	ND	(0.34)	[34.060]	ND	(0.34)	[33.991]	ND	(0.34)	[33.784]
delta-BHC	ND	(0.36)	[36.023]	ND	(0.34)	[34.060]	ND	(0.34)	[33.991]	ND	(0.34)	[33.784]

Compiled: 8 ary 1994 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE BG CAN97-BG-10 44 - 46			NONE BG CAN97-BG-11 51 - 53			NONE BG CAN97-BG-12 56 - 58			NONE BG CAN97-BG-13 59 - 61		
gamma-BHC	ND	(0.36)	[36.023]	ND	(0.34)	[34.060]	ND	(0.34)	[33.991]	ND	(0.34)	[33.784]
SW8240 - Volatile Organics (ug/kg)												
1,1,1-Trichloroethane	ND	(5.4)	[1.082]	ND	(5.1)	[1.022]	ND	(5.1)	[1.020]	ND	(5.1)	[1.014]
1,1,2,2-Tetrachloroethane	ND	(5.4)	[1.082]	ND	(5.1)	[1.022]	ND	(5.1)	[1.020]	ND	(5.1)	[1.014]
1,1,2-Trichloroethane	ND	(5.4)	[1.082]	ND	(5.1)	[1.022]	ND	(5.1)	[1.020]	ND	(5.1)	[1.014]
1,1-Dichloroethane	ND	(5.4)	[1.082]	ND	(5.1)	[1.022]	ND	(5.1)	[1.020]	ND	(5.1)	[1.014]
1,1-Dichloroethene	ND	(5.4)	[1.082]	ND	(5.1)	[1.022]	ND	(5.1)	[1.020]	ND	(5.1)	[1.014]
1,2,3-Trichloropropane	ND	(5.4)	[1.082]	ND	(5.1)	[1.022]	ND	(5.1)	[1.020]	ND	(5.1)	[1.014]
1,2-Dichloroethane	ND	(5.4)	[1.082]	ND	(5.1)	[1.022]	ND	(5.1)	[1.020]	ND	(5.1)	[1.014]
1,2-Dichloropropane	ND	(5.4)	[1.082]	ND	(5.1)	[1.022]	ND	(5.1)	[1.020]	ND	(5.1)	[1.014]
2-Chloroethyl vinyl ether	ND	(11)	[1.082]	ND	(10)	[1.022]	ND	(10)	[1.020]	ND	(10)	[1.014]
2-Hexanone	ND	(54)	[1.082]	ND	(51)	[1.022]	ND	(51)	[1.020]	ND	(51)	[1.014]
4-Methyl-2-pentanone(MIBK)	ND	(54)	[1.082]	ND	(51)	[1.022]	ND	(51)	[1.020]	ND	(51)	[1.014]
Acetone	ND	(110)	[1.082]	ND	(100)	[1.022]	ND	(100)	[1.020]	ND	(100)	[1.014]
Acrolein	ND	(81)	[1.082]	ND	(77)	[1.022]	ND	(77)	[1.020]	ND	(76)	[1.014]
Acrylonitrile	ND	(54)	[1.082]	ND	(51)	[1.022]	ND	(51)	[1.020]	ND	(51)	[1.014]
Benzene	ND	(5.4)	[1.082]	ND	(5.1)	[1.022]	ND	(5.1)	[1.020]	ND	(5.1)	[1.014]
Bromodichloromethane	ND	(5.4)	[1.082]	ND	(5.1)	[1.022]	ND	(5.1)	[1.020]	ND	(5.1)	[1.014]
Bromomethane	ND	(11)	[1.082]	ND	(10)	[1.022]	ND	(10)	[1.020]	ND	(10)	[1.014]
Carbon disulfide	ND	(5.4)	[1.082]	ND	(5.1)	[1.022]	ND	(5.1)	[1.020]	ND	(5.1)	[1.014]
Carbon tetrachloride	ND	(5.4)	[1.082]	ND	(5.1)	[1.022]	ND	(5.1)	[1.020]	ND	(5.1)	[1.014]
Chlorobenzene	ND	(5.4)	[1.082]	ND	(5.1)	[1.022]	ND	(5.1)	[1.020]	ND	(5.1)	[1.014]
Chloroethane	ND	(11)	[1.082]	ND	(10)	[1.022]	ND	(10)	[1.020]	ND	(10)	[1.014]
Chloroform	ND	(5.4)	[1.082]	ND	(5.1)	[1.022]	ND	(5.1)	[1.020]	ND	(5.1)	[1.014]
Chloromethane	ND	(11)	[1.082]	ND	(10)	[1.022]	ND	(10)	[1.020]	ND	(10)	[1.014]
Dibromochloromethane	ND	(5.4)	[1.082]	ND	(5.1)	[1.022]	ND	(5.1)	[1.020]	ND	(5.1)	[1.014]
Dibromomethane	ND	(5.4)	[1.082]	ND	(5.1)	[1.022]	ND	(5.1)	[1.020]	ND	(5.1)	[1.014]
Dichlorodifluoromethane	ND	(22)	[1.082]	ND	(20)	[1.022]	ND	(20)	[1.020]	ND	(20)	[1.014]
Ethyl acetate	6.4	()	[1.082]	11	()	[1.022]	29	()	[1.020]	11	()	[1.014]

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)																
	NONE BG CAN97-BG-10 44 - 46				NONE BG CAN97-BG-11 51 - 53				NONE BG CAN97-BG-12 56 - 58				NONE BG CAN97-BG-13 59 - 61			
Ethyl benzene	ND	(5.4)	[1.082]		ND	(5.1)	[1.022]		ND	(5.1)	[1.020]		ND	(5.1)	[1.014]	
Ethyl methacrylate	ND	(16)	[1.082]		ND	(15)	[1.022]		ND	(15)	[1.020]		ND	(15)	[1.014]	
Iodomethane	ND	(5.4)	[1.082]		ND	(5.1)	[1.022]		ND	(5.1)	[1.020]		ND	(5.1)	[1.014]	
Methyl acetate	NA				4.7	()	[1.022]		4.9	()	[1.020]		5.4	()	[1.014]	
Methyl ethyl ketone	ND	(110)	[1.082]		ND	(100)	[1.022]		ND	(100)	[1.020]		ND	(100)	[1.014]	
Methylene chloride	ND	(5.4)	[1.082]		ND	(5.1)	[1.022]		ND	(5.1)	[1.020]		ND	(5.1)	[1.014]	
Styrene	ND	(5.4)	[1.082]		ND	(5.1)	[1.022]		ND	(5.1)	[1.020]		ND	(5.1)	[1.014]	
Tetrachloroethene	ND	(5.4)	[1.082]		ND	(5.1)	[1.022]		ND	(5.1)	[1.020]		ND	(5.1)	[1.014]	
Toluene	ND	(5.4)	[1.082]		ND	(5.1)	[1.022]		2.8 J	(5.1)	[1.020]		0.83 J	(5.1)	[1.014]	
Tribromomethane(Bromoform)	ND	(5.4)	[1.082]		ND	(5.1)	[1.022]		ND	(5.1)	[1.020]		ND	(5.1)	[1.014]	
Trichloroethene	ND	(5.4)	[1.082]		ND	(5.1)	[1.022]		ND	(5.1)	[1.020]		ND	(5.1)	[1.014]	
Trichlorofluoromethane	ND	(11)	[1.082]		ND	(10)	[1.022]		ND	(10)	[1.020]		ND	(10)	[1.014]	
Unknown	3.6	()	[1.082]		NA				NA				4.5	()	[1.014]	
Unknown acetate	NA				NA				NA				3.6	()	[1.014]	
Vinyl acetate	ND	(5.4)	[1.082]		ND	(5.1)	[1.022]		ND	(5.1)	[1.020]		ND	(5.1)	[1.014]	
Vinyl chloride	ND	(11)	[1.082]		ND	(10)	[1.022]		ND	(10)	[1.020]		ND	(10)	[1.014]	
Xylenes	ND	(5.4)	[1.082]		ND	(5.1)	[1.022]		ND	(5.1)	[1.020]		ND	(5.1)	[1.014]	
cis-1,3-Dichloropropene	ND	(5.4)	[1.082]		ND	(5.1)	[1.022]		ND	(5.1)	[1.020]		ND	(5.1)	[1.014]	
trans-1,2-Dichloroethene	ND	(5.4)	[1.082]		ND	(5.1)	[1.022]		ND	(5.1)	[1.020]		ND	(5.1)	[1.014]	
trans-1,3-Dichloropropene	ND	(5.4)	[1.082]		ND	(5.1)	[1.022]		ND	(5.1)	[1.020]		ND	(5.1)	[1.014]	
trans-1,4-Dichloro-2-butene	ND	(11)	[1.082]		ND	(10)	[1.022]		ND	(10)	[1.020]		ND	(10)	[1.014]	
SW8270 - Semivolatile Organics (ug/kg)																
1,2,4,5-Tetrachlorobenzene	ND	(360)	[.036]		ND	(340)	[.034]		ND	(340)	[.034]		ND	(340)	[.034]	
1,2,4-Trichlorobenzene	ND	(360)	[.036]		ND	(340)	[.034]		ND	(340)	[.034]		ND	(340)	[.034]	
1,2-Dichlorobenzene	ND	(360)	[.036]		ND	(340)	[.034]		ND	(340)	[.034]		ND	(340)	[.034]	
1,2-Diphenylhydrazine	ND	(360)	[.036]		ND	(340)	[.034]		ND	(340)	[.034]		ND	(340)	[.034]	
1,3-Dichlorobenzene	ND	(360)	[.036]		ND	(340)	[.034]		ND	(340)	[.034]		ND	(340)	[.034]	
1,4-Dichlorobenzene	ND	(360)	[.036]		ND	(340)	[.034]		ND	(340)	[.034]		ND	(340)	[.034]	
1-Chloronaphthalene	ND	(360)	[.036]		ND	(340)	[.034]		ND	(340)	[.034]		ND	(340)	[.034]	

Compiled: 8 F ıry 1994 () = Reporting Limit [] = Factor] = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)																
	NONE BG CAN97-BG-10 44 - 46				NONE BG CAN97-BG-11 51 - 53				NONE BG CAN97-BG-12 56 - 58				NONE BG CAN97-BG-13 59 - 61			
1-Naphthylamine	ND	(360)	[	.036]	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(340)	[	.034]
2,3,4,6-Tetrachlorophenol	ND	(720)	[	.036]	ND	(680)	[	.034]	ND	(680)	[	.034]	ND	(680)	[	.034]
2,4,5-Trichlorophenol	ND	(360)	[	.036]	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(340)	[	.034]
2,4,6-Trichlorophenol	ND	(360)	[	.036]	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(340)	[	.034]
2,4-Dichlorophenol	ND	(360)	[	.036]	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(340)	[	.034]
2,4-Dimethylphenol	ND	(360)	[	.036]	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(340)	[	.034]
2,4-Dinitrophenol	ND	(1800)	[	.036]	ND	(1700)	[	.034]	ND	(1700)	[	.034]	ND	(1700)	[	.034]
2,4-Dinitrotoluene	ND	(360)	[	.036]	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(340)	[	.034]
2,6-Dichlorophenol	ND	(360)	[	.036]	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(340)	[	.034]
2,6-Dinitrotoluene	ND	(360)	[	.036]	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(340)	[	.034]
2-Chloronaphthalene	ND	(360)	[	.036]	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(340)	[	.034]
2-Chlorophenol	ND	(360)	[	.036]	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(340)	[	.034]
2-Methylnaphthalene	ND	(360)	[	.036]	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(340)	[	.034]
2-Methylphenol(o-cresol)	ND	(360)	[	.036]	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(340)	[	.034]
2-Naphthylamine	ND	(360)	[	.036]	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(340)	[	.034]
2-Nitroaniline	ND	(1800)	[	.036]	ND	(1700)	[	.034]	ND	(1700)	[	.034]	ND	(1700)	[	.034]
2-Nitrophenol	ND	(360)	[	.036]	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(340)	[	.034]
2-Picoline	ND	(360)	[	.036]	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(340)	[	.034]
3,3'-Dichlorobenzidine	ND	(720)	[	.036]	ND	(680)	[	.034]	ND	(680)	[	.034]	ND	(680)	[	.034]
3-Methylcholanthrene	ND	(360)	[	.036]	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(340)	[	.034]
3-Nitroaniline	ND	(1800)	[	.036]	ND	(1700)	[	.034]	ND	(1700)	[	.034]	ND	(1700)	[	.034]
4,6-Dinitro-2-methylphenol	ND	(1800)	[	.036]	ND	(1700)	[	.034]	ND	(1700)	[	.034]	ND	(1700)	[	.034]
4-Aminobiphenyl	ND	(360)	[	.036]	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(340)	[	.034]
4-Bromophenyl phenyl ether	ND	(360)	[	.036]	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(340)	[	.034]
4-Chloro-3-methylphenol	ND	(360)	[	.036]	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(340)	[	.034]
4-Chlorophenyl phenyl ether	ND	(360)	[	.036]	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(340)	[	.034]
4-Methylphenol(p-cresol)	ND	(360)	[	.036]	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(340)	[	.034]
4-Nitroaniline	ND	(1800)	[	.036]	ND	(1700)	[	.034]	ND	(1700)	[	.034]	ND	(1700)	[	.034]
4-Nitrophenol	ND	(1800)	[	.036]	ND	(1700)	[	.034]	ND	(1700)	[	.034]	ND	(1700)	[	.034]

Compiled: 8 February 1994 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)																
	NONE BG CAN97-BG-10 44 - 46				NONE BG CAN97-BG-11 51 - 53				NONE BG CAN97-BG-12 56 - 58				NONE BG CAN97-BG-13 59 - 61			
7,12-Dimethylbenz(a)anthracene	ND	(900)	[	.036]	ND	(850)	[	.034]	ND	(850)	[	.034]	ND	(850)	[	.034]
Acenaphthene	ND	(360)	[	.036]	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(340)	[	.034]
Acenaphthylene	ND	(360)	[	.036]	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(340)	[	.034]
Acetophenone	ND	(360)	[	.036]	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(340)	[	.034]
Aniline	ND	(360)	[	.036]	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(340)	[	.034]
Anthracene	ND	(360)	[	.036]	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(340)	[	.034]
Benzidine	ND	(360)	[	.036]	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(340)	[	.034]
Benzo(a)anthracene	ND	(360)	[	.036]	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(340)	[	.034]
Benzo(a)pyrene	ND	(360)	[	.036]	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(340)	[	.034]
Benzo(b)fluoranthene	ND	(360)	[	.036]	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(340)	[	.034]
Benzo(g,h,i)perylene	ND	(360)	[	.036]	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(340)	[	.034]
Benzo(k)fluoranthene	ND	(360)	[	.036]	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(340)	[	.034]
Benzoic acid	ND	(1800)	[	.036]	ND	(1700)	[	.034]	ND	(1700)	[	.034]	ND	(1700)	[	.034]
Benzyl alcohol	ND	(360)	[	.036]	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(340)	[	.034]
Butylbenzylphthalate	ND	(360)	[	.036]	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(340)	[	.034]
Chrysene	ND	(360)	[	.036]	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(340)	[	.034]
Cyclohexenol	250	(0)	[	.036]	170	(0)	[	.034]	NA				NA			
Cyclohexenone B	180	(0)	[	.036]	NA				NA				NA			
Di-n-octylphthalate	ND	(360)	[	.036]	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(340)	[	.034]
Dibenz(a,h)anthracene	ND	(360)	[	.036]	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(340)	[	.034]
Dibenz(a,j)acridine	ND	(360)	[	.036]	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(340)	[	.034]
Dibenzofuran	ND	(360)	[	.036]	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(340)	[	.034]
Dibutylphthalate	ND	(360)	[	.036]	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(340)	[	.034]
Diethylphthalate	ND	(360)	[	.036]	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(340)	[	.034]
Dimethylphenethylamine	ND	(360)	[	.036]	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(340)	[	.034]
Dimethylphthalate	ND	(360)	[	.036]	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(340)	[	.034]
Diphenylamine	ND	(360)	[	.036]	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(340)	[	.034]
Ethyl methanesulfonate	ND	(360)	[	.036]	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(340)	[	.034]
Fluoranthene	ND	(360)	[	.036]	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(340)	[	.034]

Compiled: 8 Fe y 1994 () = Reporting Limit [] = Factor = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)																
	NONE BG CAN97-BG-10 44 - 46				NONE BG CAN97-BG-11 51 - 53				NONE BG CAN97-BG-12 56 - 58				NONE BG CAN97-BG-13 59 - 61			
Fluorene	ND	(360)	[	.036]	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(340)	[	.034]
Hexachlorobenzene	ND	(360)	[	.036]	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(340)	[	.034]
Hexachlorobutadiene	ND	(360)	[	.036]	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(340)	[	.034]
Hexachlorocyclopentadiene	ND	(360)	[	.036]	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(340)	[	.034]
Hexachloroethane	ND	(360)	[	.036]	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(340)	[	.034]
Indeno(1,2,3-cd)pyrene	ND	(360)	[	.036]	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(340)	[	.034]
Isophorone	ND	(360)	[	.036]	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(340)	[	.034]
Methyl methanesulfonate	ND	(360)	[	.036]	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(340)	[	.034]
N-Nitroso-di-n-butylamine	ND	(360)	[	.036]	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(340)	[	.034]
N-Nitrosodimethylamine	ND	(360)	[	.036]	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(340)	[	.034]
N-Nitrosodiphenylamine	ND	(360)	[	.036]	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(340)	[	.034]
N-Nitrosodipropylamine	ND	(360)	[	.036]	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(340)	[	.034]
N-Nitrosopiperidine	ND	(360)	[	.036]	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(340)	[	.034]
Naphthalene	ND	(360)	[	.036]	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(340)	[	.034]
Nitrobenzene	ND	(360)	[	.036]	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(340)	[	.034]
Pentachlorobenzene	ND	(360)	[	.036]	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(340)	[	.034]
Pentachloronitrobenzene	ND	(360)	[	.036]	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(340)	[	.034]
Pentachlorophenol	ND	(1800)	[	.036]	ND	(1700)	[	.034]	ND	(1700)	[	.034]	ND	(1700)	[	.034]
Phenacetin	ND	(360)	[	.036]	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(340)	[	.034]
Phenanthrene	ND	(360)	[	.036]	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(340)	[	.034]
Phenol	ND	(360)	[	.036]	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(340)	[	.034]
Pronamide	ND	(360)	[	.036]	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(340)	[	.034]
Pyrene	ND	(360)	[	.036]	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(340)	[	.034]
Pyridine	ND	(360)	[	.036]	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(340)	[	.034]
Trichloropropene(s)	470	(0)	[	.036]	850	(0)	[	.034]	650	(0)	[	.034]	NA			
Unknown	180	(0)	[	.036]	170	(0)	[	.034]	990	(0)	[	.034]	370	(0)	[	.034]
Unknown B	320	(0)	[	.036]	NA				NA				NA			
Unknown cyclic ether B	1200	(0)	[	.036]	610	(0)	[	.034]	540	(0)	[	.034]	440	(0)	[	.034]
bis(2-Chloroethoxy)methane	ND	(360)	[	.036]	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(340)	[	.034]

Compiled: 8 February 1994 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)																
	NONE BG CAN97-BG-10 44 - 46				NONE BG CAN97-BG-11 51 - 53				NONE BG CAN97-BG-12 56 - 58				NONE BG CAN97-BG-13 59 - 61			
bis(2-Chloroethyl)ether	ND	(360)	[	.036]	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(340)	[	.034]
bis(2-Chloroisopropyl)ether	ND	(360)	[	.036]	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(340)	[	.034]
bis(2-Ethylhexyl)phthalate	32 J	(360)	[	.036]	220 J	(340)	[	.034]	ND	(340)	[	.034]	ND	(340)	[	.034]
p-Chloroaniline	ND	(360)	[	.036]	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(340)	[	.034]
p-Dimethylaminoazobenzene	ND	(360)	[	.036]	ND	(340)	[	.034]	ND	(340)	[	.034]	ND	(340)	[	.034]

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)												
	NONE BG CAN97-BG-99 Dup of CAN97-BG-01 0 - 2			NONE BG CAN97-BG-02 4 - 6			NONE BG CAN97-BG-03 9 - 11			NONE BG CAN97-BG-04 17 - 19		
EPA 418.1 - Total Recoverable Petroleum Hydrocarbons (mg/kg)												
Hydrocarbons	1600	(27)	[5.404]	ND	(28)	[5.528]	ND	(27)	[5.392]	ND	(27)	[5.401]
SW8015 - Total Petroleum Hydrocarbons (ug/kg)												
Benzene (2)	ND	(32)	[105.000]	NA			NA			NA		
Diesel (2)	36000 GBØ	(27000)	[540.541]	NA			NA			NA		
Ethylbenzene (2)	ND	(32)	[105.000]	NA			NA			NA		
Gasoline (2)	ND	(5200)	[105.000]	NA			NA			NA		
Jet fuel (2)	ND	(54000)	[540.541]	NA			NA			NA		
Kerosene (2)	ND	(54000)	[540.541]	NA			NA			NA		
Toluene (2)	ND	(32)	[105.000]	NA			NA			NA		
Xylenes (total) (2)	ND	(52)	[105.000]	NA			NA			NA		
SW8080 - Organochlorine Pesticides and PCBs (ug/kg)												
4,4'-DDD	ND	(18)	[805.706]	ND	(0.37)	[37.147]	ND	(0.36)	[36.023]	ND	(0.36)	[36.036]
4,4'-DDE	ND	(18)	[805.706]	ND	(0.37)	[37.147]	ND	(0.36)	[36.023]	ND	(0.36)	[36.036]
4,4'-DDT	ND	(36)	[805.706]	ND	(0.74)	[37.147]	ND	(0.72)	[36.023]	ND	(0.72)	[36.036]
Aldrin	ND	(18)	[805.706]	ND	(0.37)	[37.147]	ND	(0.36)	[36.023]	ND	(0.36)	[36.036]
Chlordane	ND	(90)	[805.706]	ND	(1.9)	[37.147]	ND	(1.8)	[36.023]	ND	(1.8)	[36.036]
Dieldrin	ND	(18)	[805.706]	ND	(0.37)	[37.147]	ND	(0.36)	[36.023]	ND	(0.36)	[36.036]
Endosulfan I	ND	(18)	[805.706]	ND	(0.37)	[37.147]	ND	(0.36)	[36.023]	ND	(0.36)	[36.036]
Endosulfan II	ND	(54)	[805.706]	ND	(1.1)	[37.147]	ND	(1.1)	[36.023]	ND	(1.1)	[36.036]
Endosulfan Sulfate	ND	(90)	[805.706]	ND	(1.9)	[37.147]	ND	(1.8)	[36.023]	ND	(1.8)	[36.036]
Endrin	ND	(18)	[805.706]	ND	(0.37)	[37.147]	ND	(0.36)	[36.023]	ND	(0.36)	[36.036]
Endrin Aldehyde	ND	(36)	[805.706]	ND	(0.74)	[37.147]	ND	(0.72)	[36.023]	ND	(0.72)	[36.036]
Endrin Ketone	ND	(90)	[805.706]	ND	(1.9)	[37.147]	ND	(1.8)	[36.023]	ND	(1.8)	[36.036]
Heptachlor	ND	(18)	[805.706]	ND	(0.37)	[37.147]	ND	(0.36)	[36.023]	ND	(0.36)	[36.036]
Heptachlor epoxide	ND	(18)	[805.706]	ND	(0.37)	[37.147]	ND	(0.36)	[36.023]	ND	(0.36)	[36.036]
Methoxychlor	ND	(90)	[805.706]	ND	(1.9)	[37.147]	ND	(1.8)	[36.023]	ND	(1.8)	[36.036]
PCB-1016	ND	(180)	[805.706]	ND	(3.7)	[37.147]	ND	(3.6)	[36.023]	ND	(3.6)	[36.036]
PCB-1221	ND	(360)	[805.706]	ND	(7.4)	[37.147]	ND	(7.2)	[36.023]	ND	(7.2)	[36.036]

Compiled: 8 February 1994 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE BG CAN97-BG-99 Dup of CAN97-BG-01 0 - 2			NONE BG CAN97-BG-02 4 - 6			NONE BG CAN97-BG-03 9 - 11			NONE BG CAN97-BG-04 17 - 19		
PCB-1232	ND	(360)	[805.706]	ND	(7.4)	[37.147]	ND	(7.2)	[36.023]	ND	(7.2)	[36.036]
PCB-1242	ND	(180)	[805.706]	ND	(3.7)	[37.147]	ND	(3.6)	[36.023]	ND	(3.6)	[36.036]
PCB-1248	ND	(180)	[805.706]	ND	(3.7)	[37.147]	ND	(3.6)	[36.023]	ND	(3.6)	[36.036]
PCB-1254	ND	(360)	[805.706]	ND	(7.4)	[37.147]	ND	(7.2)	[36.023]	ND	(7.2)	[36.036]
PCB-1260	ND	(360)	[805.706]	ND	(7.4)	[37.147]	ND	(7.2)	[36.023]	ND	(7.2)	[36.036]
Toxaphene	ND	(900)	[805.706]	ND	(19)	[37.147]	ND	(18)	[36.023]	ND	(18)	[36.036]
alpha-BHC	ND	(18)	[805.706]	ND	(0.37)	[37.147]	ND	(0.36)	[36.023]	ND	(0.36)	[36.036]
beta-BHC	ND	(18)	[805.706]	ND	(0.37)	[37.147]	ND	(0.36)	[36.023]	ND	(0.36)	[36.036]
delta-BHC	ND	(18)	[805.706]	ND	(0.37)	[37.147]	ND	(0.36)	[36.023]	ND	(0.36)	[36.036]
gamma-BHC	ND	(18)	[805.706]	ND	(0.37)	[37.147]	ND	(0.36)	[36.023]	ND	(0.36)	[36.036]
SW8150 - Chlorinated Herbicides (ug/kg)												
2,4,5-T	ND	(7.2)	[36.114]	NA			NA			NA		
2,4,5-TP (Silvex)	4.9 J	(6.1)	[36.114]	NA			NA			NA		
2,4-D	ND	(43)	[36.114]	NA			NA			NA		
2,4-DB	ND	(33)	[36.114]	NA			NA			NA		
Dalapon	ND	(210)	[36.114]	NA			NA			NA		
Dicamba	ND	(9.8)	[36.114]	NA			NA			NA		
Dichloroprop	ND	(23)	[36.114]	NA			NA			NA		
Dinoseb	ND	(5.4)	[36.114]	NA			NA			NA		
MCPA	ND	(9000)	[36.114]	NA			NA			NA		
MCPP	5800 J	(6900)	[36.114]	NA			NA			NA		
SW8240 - Volatile Organics (ug/kg)												
1,1,1-Trichloroethane	ND	(5.4)	[1.084]	ND	(5.6)	[1.116]	ND	(5.4)	[1.081]	ND	(5.4)	[1.082]
1,1,2,2-Tetrachloroethane	ND	(5.4)	[1.084]	ND	(5.6)	[1.116]	ND	(5.4)	[1.081]	ND	(5.4)	[1.082]
1,1,2-Trichloroethane	ND	(5.4)	[1.084]	ND	(5.6)	[1.116]	ND	(5.4)	[1.081]	ND	(5.4)	[1.082]
1,1-Dichloroethane	ND	(5.4)	[1.084]	ND	(5.6)	[1.116]	ND	(5.4)	[1.081]	ND	(5.4)	[1.082]
1,1-Dichloroethene	ND	(5.4)	[1.084]	ND	(5.6)	[1.116]	ND	(5.4)	[1.081]	ND	(5.4)	[1.082]
1,2,3-Trichloropropane	ND	(5.4)	[1.084]	ND	(5.6)	[1.116]	ND	(5.4)	[1.081]	ND	(5.4)	[1.082]
1,2-Dichloroethane	ND	(5.4)	[1.084]	ND	(5.6)	[1.116]	ND	(5.4)	[1.081]	ND	(5.4)	[1.082]

Compiled: 8 F ıry 1994 () = Reporting Limit [] = Factor = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

	SITE ID											
	LOCATION ID											
	SAMPLE ID											
	BEG. DEPTH - END DEPTH (FT.)											
	NONE			NONE			NONE			NONE		
	BG			BG			BG			BG		
	CAN97-BG-99 Dup of CAN97-BG-01			CAN97-BG-02			CAN97-BG-03			CAN97-BG-04		
PARAMETER	0 - 2			4 - 6			9 - 11			17 - 19		
1,2-Dichloropropane	ND	(5.4)	[1.084]	ND	(5.6)	[1.116]	ND	(5.4)	[1.081]	ND	(5.4)	[1.082]
2-Chloroethyl vinyl ether	ND	(11)	[1.084]	ND	(11)	[1.116]	ND	(11)	[1.081]	ND	(11)	[1.082]
2-Hexanone	ND	(54)	[1.084]	ND	(56)	[1.116]	ND	(54)	[1.081]	ND	(54)	[1.082]
4-Methyl-2-pentanone(MIBK)	ND	(54)	[1.084]	ND	(56)	[1.116]	ND	(54)	[1.081]	ND	(54)	[1.082]
Acetone	ND	(110)	[1.084]	ND	(110)	[1.116]	ND	(110)	[1.081]	ND	(110)	[1.082]
Acrolein	ND	(81)	[1.084]	ND	(84)	[1.116]	ND	(81)	[1.081]	ND	(81)	[1.082]
Acrylonitrile	ND	(54)	[1.084]	ND	(56)	[1.116]	ND	(54)	[1.081]	ND	(54)	[1.082]
Benzene	ND	(5.4)	[1.084]	ND	(5.6)	[1.116]	ND	(5.4)	[1.081]	ND	(5.4)	[1.082]
Bromodichloromethane	ND	(5.4)	[1.084]	ND	(5.6)	[1.116]	ND	(5.4)	[1.081]	ND	(5.4)	[1.082]
Bromomethane	ND	(11)	[1.084]	ND	(11)	[1.116]	ND	(11)	[1.081]	ND	(11)	[1.082]
Carbon disulfide	ND	(5.4)	[1.084]	ND	(5.6)	[1.116]	ND	(5.4)	[1.081]	ND	(5.4)	[1.082]
Carbon tetrachloride	ND	(5.4)	[1.084]	ND	(5.6)	[1.116]	ND	(5.4)	[1.081]	ND	(5.4)	[1.082]
Chlorobenzene	ND	(5.4)	[1.084]	ND	(5.6)	[1.116]	ND	(5.4)	[1.081]	ND	(5.4)	[1.082]
Chloroethane	ND	(11)	[1.084]	ND	(11)	[1.116]	ND	(11)	[1.081]	ND	(11)	[1.082]
Chloroform	ND	(5.4)	[1.084]	ND	(5.6)	[1.116]	ND	(5.4)	[1.081]	ND	(5.4)	[1.082]
Chloromethane	ND	(11)	[1.084]	ND	(11)	[1.116]	ND	(11)	[1.081]	ND	(11)	[1.082]
Dibromochloromethane	ND	(5.4)	[1.084]	ND	(5.6)	[1.116]	ND	(5.4)	[1.081]	ND	(5.4)	[1.082]
Dibromomethane	ND	(5.4)	[1.084]	ND	(5.6)	[1.116]	ND	(5.4)	[1.081]	ND	(5.4)	[1.082]
Dichlorodifluoromethane	ND	(22)	[1.084]	ND	(22)	[1.116]	ND	(22)	[1.081]	ND	(22)	[1.082]
Ethyl benzene	0.44 J	(5.4)	[1.084]	ND	(5.6)	[1.116]	ND	(5.4)	[1.081]	ND	(5.4)	[1.082]
Ethyl methacrylate	ND	(16)	[1.084]	ND	(17)	[1.116]	ND	(16)	[1.081]	ND	(16)	[1.082]
Iodomethane	ND	(5.4)	[1.084]	ND	(5.6)	[1.116]	ND	(5.4)	[1.081]	ND	(5.4)	[1.082]
Methyl ethyl ketone	ND	(110)	[1.084]	ND	(110)	[1.116]	ND	(110)	[1.081]	ND	(110)	[1.082]
Methylene chloride	ND	(5.4)	[1.084]	ND	(5.6)	[1.116]	ND	(5.4)	[1.081]	ND	(5.4)	[1.082]
Styrene	ND	(5.4)	[1.084]	ND	(5.6)	[1.116]	ND	(5.4)	[1.081]	ND	(5.4)	[1.082]
Tetrachloroethene	ND	(5.4)	[1.084]	ND	(5.6)	[1.116]	ND	(5.4)	[1.081]	ND	(5.4)	[1.082]
Toluene	8.8 B	(5.4)	[1.084]	0.44 J	(5.6)	[1.116]	ND	(5.4)	[1.081]	ND	(5.4)	[1.082]
Tribromomethane(Bromoform)	ND	(5.4)	[1.084]	ND	(5.6)	[1.116]	ND	(5.4)	[1.081]	ND	(5.4)	[1.082]
Trichloroethene	ND	(5.4)	[1.084]	ND	(5.6)	[1.116]	ND	(5.4)	[1.081]	ND	(5.4)	[1.082]

Compiled: 8 February 1994 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)															
	NONE BG CAN97-BG-99 Dup of CAN97-BG-01 0 - 2				NONE BG CAN97-BG-02 4 - 6				NONE BG CAN97-BG-03 9 - 11				NONE BG CAN97-BG-04 17 - 19			
Trichlorofluoromethane	ND	(11)	[	1.084]	ND	(11)	[	1.116]	ND	(11)	[	1.081]	ND	(11)	[	1.082]
Unknown hydrocarbon	NA				NA				4.4	()	[	1.081]	NA			
Vinyl acetate	ND	(5.4)	[	1.084]	ND	(5.6)	[	1.116]	ND	(5.4)	[	1.081]	ND	(5.4)	[	1.082]
Vinyl chloride	ND	(11)	[	1.084]	ND	(11)	[	1.116]	ND	(11)	[	1.081]	ND	(11)	[	1.082]
Xylenes	0.59 J	(5.4)	[	1.084]	ND	(5.6)	[	1.116]	ND	(5.4)	[	1.081]	ND	(5.4)	[	1.082]
cis-1,3-Dichloropropene	ND	(5.4)	[	1.084]	ND	(5.6)	[	1.116]	ND	(5.4)	[	1.081]	ND	(5.4)	[	1.082]
trans-1,2-Dichloroethene	ND	(5.4)	[	1.084]	ND	(5.6)	[	1.116]	ND	(5.4)	[	1.081]	ND	(5.4)	[	1.082]
trans-1,3-Dichloropropene	ND	(5.4)	[	1.084]	ND	(5.6)	[	1.116]	ND	(5.4)	[	1.081]	ND	(5.4)	[	1.082]
trans-1,4-Dichloro-2-butene	ND	(11)	[	1.084]	ND	(11)	[	1.116]	ND	(11)	[	1.081]	ND	(11)	[	1.082]
SW8270 - Semivolatile Organics (ug/kg)																
1,2,4,5-Tetrachlorobenzene	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(360)	[	.036]
1,2,4-Trichlorobenzene	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(360)	[	.036]
1,2-Dichlorobenzene	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(360)	[	.036]
1,2-Diphenylhydrazine	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(360)	[	.036]
1,3-Dichlorobenzene	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(360)	[	.036]
1,4-Dichlorobenzene	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(360)	[	.036]
1-Chloronaphthalene	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(360)	[	.036]
1-Naphthylamine	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(360)	[	.036]
2,3,4,6-Tetrachlorophenol	ND	(720)	[	.036]	ND	(740)	[	.037]	ND	(720)	[	.036]	ND	(720)	[	.036]
2,4,5-Trichlorophenol	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(360)	[	.036]
2,4,6-Trichlorophenol	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(360)	[	.036]
2,4-Dichlorophenol	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(360)	[	.036]
2,4-Dimethylphenol	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(360)	[	.036]
2,4-Dinitrophenol	ND	(1800)	[	.036]	ND	(1900)	[	.037]	ND	(1800)	[	.036]	ND	(1800)	[	.036]
2,4-Dinitrotoluene	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(360)	[	.036]
2,6-Dichlorophenol	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(360)	[	.036]
2,6-Dinitrotoluene	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(360)	[	.036]
2-Chloronaphthalene	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(360)	[	.036]
2-Chlorophenol	ND	(360)	[	.036]	ND	(370)	[	.037]	ND	(360)	[	.036]	ND	(360)	[	.036]

Compiled: 8 F y 1994 () = Reporting Limit [] = Factor = Not Detected NA = Not Applicable

TABLE B1

RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID: NONE LOCATION ID: BG SAMPLE ID: CAN97-BG-99 Dup of CAN97-BG-01 BEG. DEPTH - END DEPTH (FT.): 0 - 2			SITE ID: NONE LOCATION ID: BG SAMPLE ID: CAN97-BG-02 BEG. DEPTH - END DEPTH (FT.): 4 - 6			SITE ID: NONE LOCATION ID: BG SAMPLE ID: CAN97-BG-03 BEG. DEPTH - END DEPTH (FT.): 9 - 11			SITE ID: NONE LOCATION ID: BG SAMPLE ID: CAN97-BG-04 BEG. DEPTH - END DEPTH (FT.): 17 - 19		
2-Methylnaphthalene	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
2-Methylphenol(o-cresol)	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
2-Naphthylamine	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
2-Nitroaniline	ND	(1800)	[.036]	ND	(1900)	[.037]	ND	(1800)	[.036]	ND	(1800)	[.036]
2-Nitrophenol	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
2-Picoline	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
3,3'-Dichlorobenzidine	ND	(720)	[.036]	ND	(740)	[.037]	ND	(720)	[.036]	ND	(720)	[.036]
3-Methylcholanthrene	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
3-Nitroaniline	ND	(1800)	[.036]	ND	(1900)	[.037]	ND	(1800)	[.036]	ND	(1800)	[.036]
4,6-Dinitro-2-methylphenol	ND	(1800)	[.036]	ND	(1900)	[.037]	ND	(1800)	[.036]	ND	(1800)	[.036]
4-Aminobiphenyl	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
4-Bromophenyl phenyl ether	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
4-Chloro-3-methylphenol	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
4-Chlorophenyl phenyl ether	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
4-Methylphenol(p-cresol)	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
4-Nitroaniline	ND	(1800)	[.036]	ND	(1900)	[.037]	ND	(1800)	[.036]	ND	(1800)	[.036]
4-Nitrophenol	ND	(1800)	[.036]	ND	(1900)	[.037]	ND	(1800)	[.036]	ND	(1800)	[.036]
7,12-Dimethylbenz(a)anthracene	ND	(900)	[.036]	ND	(930)	[.037]	ND	(900)	[.036]	ND	(900)	[.036]
Acenaphthene	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
Acenaphthylene	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
Acetophenone	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
Aniline	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
Anthracene	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
Benzidine	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
Benzo(a)anthracene	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
Benzo(a)pyrene	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
Benzo(b)fluoranthene	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
Benzo(g,h,i)perylene	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
Benzo(k)fluoranthene	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]

Compiled: 8 February 1994

() = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B1

RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID	LOCATION ID	SAMPLE ID	BEG. DEPTH - END DEPTH (FT.)																				
	NONE	BG	CAN97-BG-99 Dup of CAN97-BG-01	0 - 2																				
Benzoic acid	ND		(1800)	[	.036]	ND		(1900)	[	.037]	ND		(1800)	[	.036]	ND		(1800)	[	.036]
Benzyl alcohol	ND		(360)	[	.036]	ND		(370)	[	.037]	ND		(360)	[	.036]	ND		(360)	[	.036]
Butylbenzylphthalate	ND		(360)	[	.036]	ND		(370)	[	.037]	ND		(360)	[	.036]	ND		(360)	[	.036]
Chlorocyclohexanol		NA				260		(0)	[	.037]		NA					NA			
Chrysene	ND		(360)	[	.036]	ND		(370)	[	.037]	ND		(360)	[	.036]	ND		(360)	[	.036]
Cyclohexenol		NA					NA				220		(0)	[	.036]		NA			
Cyclohexenone B	320		(0)	[	.036]		NA					NA					NA			
Di-n-octylphthalate	ND		(360)	[	.036]	ND		(370)	[	.037]	ND		(360)	[	.036]	ND		(360)	[	.036]
Dibenz(a,h)anthracene	ND		(360)	[	.036]	ND		(370)	[	.037]	ND		(360)	[	.036]	ND		(360)	[	.036]
Dibenz(a,j)acridine	ND		(360)	[	.036]	ND		(370)	[	.037]	ND		(360)	[	.036]	ND		(360)	[	.036]
Dibenzofuran	ND		(360)	[	.036]	ND		(370)	[	.037]	ND		(360)	[	.036]	ND		(360)	[	.036]
Dibutylphthalate	ND		(360)	[	.036]	ND		(370)	[	.037]	ND		(360)	[	.036]	ND		(360)	[	.036]
Diethylphthalate	ND		(360)	[	.036]	ND		(370)	[	.037]	ND		(360)	[	.036]	ND		(360)	[	.036]
Dimethylphenethylamine	ND		(360)	[	.036]	ND		(370)	[	.037]	ND		(360)	[	.036]	ND		(360)	[	.036]
Dimethylphthalate	ND		(360)	[	.036]	ND		(370)	[	.037]	ND		(360)	[	.036]	ND		(360)	[	.036]
Diphenylamine	ND		(360)	[	.036]	ND		(370)	[	.037]	ND		(360)	[	.036]	ND		(360)	[	.036]
Ethyl methanesulfonate	ND		(360)	[	.036]	ND		(370)	[	.037]	ND		(360)	[	.036]	ND		(360)	[	.036]
Fluoranthene	ND		(360)	[	.036]	ND		(370)	[	.037]	ND		(360)	[	.036]	ND		(360)	[	.036]
Fluorene	ND		(360)	[	.036]	ND		(370)	[	.037]	ND		(360)	[	.036]	ND		(360)	[	.036]
Hexachlorobenzene	ND		(360)	[	.036]	ND		(370)	[	.037]	ND		(360)	[	.036]	ND		(360)	[	.036]
Hexachlorobutadiene	ND		(360)	[	.036]	ND		(370)	[	.037]	ND		(360)	[	.036]	ND		(360)	[	.036]
Hexachlorocyclopentadiene	ND		(360)	[	.036]	ND		(370)	[	.037]	ND		(360)	[	.036]	ND		(360)	[	.036]
Hexachloroethane	ND		(360)	[	.036]	ND		(370)	[	.037]	ND		(360)	[	.036]	ND		(360)	[	.036]
Indeno(1,2,3-cd)pyrene	ND		(360)	[	.036]	ND		(370)	[	.037]	ND		(360)	[	.036]	ND		(360)	[	.036]
Isophorone	ND		(360)	[	.036]	ND		(370)	[	.037]	ND		(360)	[	.036]	ND		(360)	[	.036]
Methyl methanesulfonate	ND		(360)	[	.036]	ND		(370)	[	.037]	ND		(360)	[	.036]	ND		(360)	[	.036]
N-Nitroso-di-n-butylamine	ND		(360)	[	.036]	ND		(370)	[	.037]	ND		(360)	[	.036]	ND		(360)	[	.036]
N-Nitrosodimethylamine	ND		(360)	[	.036]	ND		(370)	[	.037]	ND		(360)	[	.036]	ND		(360)	[	.036]
N-Nitrosodiphenylamine	ND		(360)	[	.036]	ND		(370)	[	.037]	ND		(360)	[	.036]	ND		(360)	[	.036]

Compiled: 8 F[illegible]y 1994

() = Reporting Limit [] = Factor [illegible] = Not Detected NA = Not Applicable

TABLE B1 RESULTS OF ORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID: NONE LOCATION ID: BG SAMPLE ID: CAN97-BG-99 Dup of CAN97-BG-01 BEG. DEPTH - END DEPTH (FT.): 0 - 2			SITE ID: NONE LOCATION ID: BG SAMPLE ID: CAN97-BG-02 BEG. DEPTH - END DEPTH (FT.): 4 - 6			SITE ID: NONE LOCATION ID: BG SAMPLE ID: CAN97-BG-03 BEG. DEPTH - END DEPTH (FT.): 9 - 11			SITE ID: NONE LOCATION ID: BG SAMPLE ID: CAN97-BG-04 BEG. DEPTH - END DEPTH (FT.): 17 - 19		
N-Nitrosodipropylamine	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
N-Nitrosopiperidine	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
Naphthalene	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
Nitrobenzene	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
Pentachlorobenzene	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
Pentachloronitrobenzene	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
Pentachlorophenol	520 J	(1800)	[.036]	ND	(1900)	[.037]	ND	(1800)	[.036]	ND	(1800)	[.036]
Phenacetin	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
Phenanthrene	34 J	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
Phenol	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
Pronamide	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
Pyrene	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
Pyridine	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
Trichloropropene(s)	NA			780	(0)	[.037]	NA			250	(0)	[.036]
Unknown	220	(0)	[.036]	180	(0)	[.037]	900	(0)	[.036]	390	(0)	[.036]
Unknown alkane	220	(0)	[.036]	NA			NA			NA		
Unknown cyclic ether B	500	(0)	[.036]	700	(0)	[.037]	470	(0)	[.036]	180	(0)	[.036]
bis(2-Chloroethoxy)methane	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
bis(2-Chloroethyl)ether	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
bis(2-Chloroisopropyl)ether	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
bis(2-Ethylhexyl)phthalate	43 J	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
p-Chloroaniline	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]
p-Dimethylaminoazobenzene	ND	(360)	[.036]	ND	(370)	[.037]	ND	(360)	[.036]	ND	(360)	[.036]

TABLE B2

RESULTS OF INORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 09 CAN97-09-01 0 - 2			NONE 09 CAN97-09-02 4 - 6			NONE 09 CAN97-09-03 9 - 11			NONE 09 CAN97-09-04 14 - 16		
Percent moisture (%)												
Percent_moisture	6.5	()	[1.000]	9.7	()	[1.000]	7.6	()	[1.000]	7.8	()	[1.000]
SW6010 - Metals (mg/kg)												
Aluminum	10000	(16)	[81.967]	12000	(170)	[862.069]	9600	(17)	[84.034]	7500	(160)	[813.008]
Antimony	2.9 @	(8.2)	[81.967]	ND	(86)	[862.069]	ND	(8.4)	[84.034]	ND	(81)	[813.008]
Arsenic	2.8 @	(25)	[81.967]	13 @	(26)	[86.207]	7.4 @	(25)	[84.034]	4.7 @	(24)	[81.301]
Barium	88	(0.82)	[81.967]	160	(8.6)	[862.069]	130	(0.84)	[84.034]	500	(8.1)	[813.008]
Beryllium	0.41 @	(0.16)	[81.967]	0.42 @	(0.17)	[86.207]	0.38 @	(0.17)	[84.034]	0.27 @	(0.16)	[81.301]
Cadmium	0.13 @	(0.41)	[81.967]	0.088 @	(0.43)	[86.207]	0.41 @	(0.42)	[84.034]	0.39 @	(0.41)	[81.301]
Calcium	12000	(82)	[81.967]	180000	(860)	[862.069]	160000	(340)	[336.000]	180000	(810)	[813.008]
Chromium	8.9	(0.82)	[81.967]	7.4	(0.86)	[86.207]	6.6	(0.84)	[84.034]	5.1	(0.81)	[81.301]
Cobalt	3 @	(0.82)	[81.967]	2.8 @	(0.86)	[86.207]	2.3 @	(0.84)	[84.034]	1.7 @	(0.81)	[81.301]
Copper	5.7 @	(1.6)	[81.967]	3.3 @	(1.7)	[86.207]	2.2 @	(1.7)	[84.034]	1.8 @	(1.6)	[81.301]
Iron	8200	(4.1)	[81.967]	7400	(43)	[862.069]	5300	(4.2)	[84.034]	5000	(41)	[813.008]
Lead	7.2 @	(4.1)	[81.967]	ND	(4.3)	[86.207]	2.2 @	(4.2)	[84.034]	ND	(4.1)	[81.301]
Magnesium	1500	(82)	[81.967]	4000 @	(860)	[862.069]	3300	(84)	[84.034]	4600	(810)	[813.008]
Manganese	120	(0.82)	[81.967]	68	(8.6)	[862.069]	52	(0.84)	[84.034]	31	(0.81)	[81.301]
Molybdenum	0.8 @	(4.1)	[81.967]	0.34 @	(4.3)	[86.207]	0.65 @	(4.2)	[84.034]	0.4 @	(4.1)	[81.301]
Nickel	7.1 @	(1.6)	[81.967]	7.3 @	(1.7)	[86.207]	5.4 @	(1.7)	[84.034]	6.2 @	(1.6)	[81.301]
Potassium	1800	(250)	[81.967]	1700	(260)	[86.207]	1800	(250)	[84.034]	1700	(240)	[81.301]
Selenium	1.1 @	(25)	[81.967]	ND	(26)	[86.207]	ND	(25)	[84.034]	0.82 @	(24)	[81.301]
Silver	ND	(0.82)	[81.967]	ND	(0.86)	[86.207]	ND	(0.84)	[84.034]	ND	(0.81)	[81.301]
Sodium	32 @	(82)	[81.967]	92 @	(86)	[86.207]	180 @	(84)	[84.034]	240 @	(81)	[81.301]
Thallium	ND	(8.2)	[81.967]	0.48 @	(8.6)	[86.207]	ND	(8.4)	[84.034]	1.5 @	(8.1)	[81.301]
Vanadium	17	(1.6)	[81.967]	18	(1.7)	[86.207]	14	(1.7)	[84.034]	11	(1.6)	[81.301]
Zinc	21	(1.6)	[81.967]	17	(1.7)	[86.207]	14	(1.7)	[84.034]	11	(1.6)	[81.301]
SW7041 - Antimony by AA (mg/kg)												
Antimony	NA			NA			NA			0.053 @	(0.53)	[88.179]

Compiled: 8 Februa 194

() = Reporting Limit [ ] = Factor ND = Not Detected NA = Not Applicable

TABLE B2

RESULTS OF INORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 09 CAN97-09-01 0 - 2			NONE 09 CAN97-09-02 4 - 6			NONE 09 CAN97-09-03 9 - 11			NONE 09 CAN97-09-04 14 - 16		
SW7060 - Arsenic (mg/kg)												
Arsenic	2.7	(0.35)	[87.666]	2.8	(0.35)	[87.891]	2.7	(0.35)	[87.278]	2.9	(0.31)	[78.029]
SW7421 - Lead (mg/kg)												
Lead	7.6	(0.53)	[175.331]	5.1	(0.53)	[175.781]	4	(0.26)	[87.278]	3.2	(0.23)	[78.029]
SW7471 - Mercury (mg/kg)												
Mercury	ND	(0.051)	[281.452]	ND	(0.052)	[291.426]	ND	(0.044)	[245.966]	ND	(0.051)	[285.421]
SW7740 - Selenium (mg/kg)												
Selenium	0.22 B	(0.44)	[87.666]	0.6 B	(0.44)	[87.891]	ND	(0.44)	[87.278]	ND	(0.39)	[78.029]
Soil pH (pH units)												
pH	8.2	()	[1.000]	8.4	()	[1.000]	8.3	()	[1.000]	8.5	()	[1.000]

TABLE B2

RESULTS OF INORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER															
SITE ID	NONE			NONE			NONE			NONE		
LOCATION ID	09			09			09			09		
SAMPLE ID	CAN97-09-05			CAN97-09-06			CAN97-09-99 Dup of CAN97-09-06			CAN97-09-07		
BEG. DEPTH - END DEPTH (FT.)	19 - 21			24 - 26			24 - 26			29 - 31		
Percent moisture (%)												
Percent moisture	5.6	()	[1.000]	5.8	()	[1.000]	5	()	[1.000]	7.5	()	[1.000]
SW6010 - Metals (mg/kg)												
Aluminum	6100	(160)	[813.008]	8500	(17)	[86.207]	8300	(17)	[86.957]	8600	(63)	[317.440]
Antimony	ND	(81)	[813.008]	ND @	(8.6)	[86.207]	ND @	(8.7)	[86.957]	ND	(32)	[317.440]
Arsenic	2 @	(24)	[81.300]	1.9 @	(26)	[86.207]	ND @	(26)	[86.957]	4.1 @	(24)	[79.365]
Barium	460	(8.1)	[813.008]	380	(0.86)	[86.207]	460	(0.87)	[86.957]	49	(3.2)	[317.440]
Beryllium	ND @	(0.16)	[81.300]	0.31 @	(0.17)	[86.207]	0.31 @	(0.17)	[86.957]	0.22 @	(0.16)	[79.365]
Cadmium	0.42 @	(0.41)	[81.300]	0.092 @	(0.43)	[86.207]	0.38 @	(0.43)	[86.957]	ND @	(0.4)	[79.365]
Calcium	220000	(810)	[813.008]	64000	(860)	[862.000]	54000	(870)	[870.000]	55000	(320)	[317.440]
Chromium	4.8	(0.81)	[81.300]	6.9	(0.86)	[86.207]	6.9	(0.87)	[86.957]	6	(0.79)	[79.365]
Cobalt	2 @	(0.81)	[81.300]	2.1 @	(0.86)	[86.207]	2 @	(0.87)	[86.957]	1.6 @	(0.79)	[79.365]
Copper	2.5 @	(1.6)	[81.300]	2.8 @	(1.7)	[86.207]	3.2 @	(1.7)	[86.957]	1.9 @	(1.6)	[79.365]
Iron	3500	(41)	[813.008]	6000	(4.3)	[86.207]	6000	(4.3)	[86.957]	5200	(16)	[317.440]
Lead	ND	(4.1)	[81.300]	2.4 @	(4.3)	[86.207]	3 @	(4.3)	[86.957]	4.2 @	(4)	[79.365]
Magnesium	9700	(810)	[813.008]	4600	(86)	[86.207]	4100	(87)	[86.957]	9200	(320)	[317.440]
Manganese	23	(0.81)	[81.300]	81	(0.86)	[86.207]	110	(0.87)	[86.957]	39	(3.2)	[317.440]
Molybdenum	0.18 @	(4.1)	[81.300]	0.078 @	(4.3)	[86.207]	ND @	(4.3)	[86.957]	ND	(16)	[317.440]
Nickel	4.8 @	(1.6)	[81.300]	6 @	(1.7)	[86.207]	6.2 @	(1.7)	[86.957]	4.9 @	(1.6)	[79.365]
Potassium	1100 @	(240)	[81.300]	1800	(260)	[86.207]	1700	(260)	[86.957]	1700	(240)	[79.365]
Selenium	ND	(24)	[81.300]	8.7 @	(26)	[86.207]	2.9 @	(26)	[86.957]	ND	(24)	[79.365]
Silver	ND	(0.81)	[81.300]	ND @	(0.86)	[86.207]	ND @	(0.87)	[86.957]	ND	(0.79)	[79.365]
Sodium	180 @	(81)	[81.300]	120 @	(86)	[86.207]	110 @	(87)	[86.957]	230 @	(79)	[79.365]
Thallium	ND	(8.1)	[81.300]	ND @	(8.6)	[86.207]	0.6 @	(8.7)	[86.957]	0.16 @	(7.9)	[79.365]
Vanadium	15	(1.6)	[81.300]	18	(1.7)	[86.207]	17	(1.7)	[86.957]	13	(1.6)	[79.365]
Zinc	7.3 @	(1.6)	[81.300]	14	(1.7)	[86.207]	15	(1.7)	[86.957]	11	(1.6)	[79.365]
SW7060 - Arsenic (mg/kg)												
Arsenic	2.9	(0.33)	[82.760]	3.5	(0.35)	[87.014]	3.3	(0.35)	[86.281]	2.2	(0.33)	[81.284]

Compiled: 8 Febru[illegible] '994

() = Reporting Limit [] = Factor [illegible] Not Detected NA = Not Applicable

TABLE B2

RESULTS OF INORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 09 CAN97-09-05 19 - 21			NONE 09 CAN97-09-06 24 - 26			NONE 09 CAN97-09-99 Dup of CAN97-09-06 24 - 26			NONE 09 CAN97-09-07 29 - 31		
SW7421 - Lead (mg/kg)												
Lead	2.1	(0.25)	[82.760]	3.8	(0.26)	[87.014]	3.7	(0.26)	[86.281]	2.8	(0.24)	[81.284]
SW7471 - Mercury (mg/kg)												
Mercury	ND	(0.05)	[278.769]	0.02 @	(0.045)	[252.755]	0.025 @	(0.05)	[277.008]	ND	(0.046)	[257.400]
SW7740 - Selenium (mg/kg)												
Selenium	ND	(0.41)	[82.760]	0.13 @	(0.44)	[87.014]	ND	(0.43)	[86.281]	0.54 @	(0.41)	[81.284]
Soil pH (pH units)												
pH	8.4	()	[1.000]	8.4	()	[1.000]	7.6	()	[1.000]	8	()	[1.000]

Compiled: 8 February 1994

() = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B2

RESULTS OF INORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 09 CAN97-09-08 34 - 36			NONE 09 CAN97-09-09 39 - 41			NONE 09 CAN97-09-10 44 - 46			NONE 09 CAN97-09-11 49 - 53		
Percent moisture (%)												
Percent moisture	6.5	()	[1.000]	5.9	()	[1.000]	7.8	()	[1.000]	4.9	()	[1.000]
SW6010 - Metals (mg/kg)												
Aluminum	5500	(62)	[310.000]	4700	(17)	[83.333]	4200	(16)	[81.967]	4500	(16)	[81.967]
Antimony	ND	(31)	[310.000]	ND	(8.3)	[83.333]	ND	(8.2)	[81.967]	ND	(8.2)	[81.967]
Arsenic	2.8 @	(23)	[77.519]	2.2 @	(25)	[83.333]	ND	(25)	[81.967]	4.9 @	(25)	[81.967]
Barium	88	(3.1)	[310.000]	23	(0.83)	[83.333]	170	(0.82)	[81.967]	38	(0.82)	[81.967]
Beryllium	0.14 @	(0.16)	[77.519]	0.14 @	(0.17)	[83.333]	0.13 @	(0.16)	[81.967]	0.14 @	(0.16)	[81.967]
Cadmium	0.3 @	(0.39)	[77.519]	0.081 @	(0.42)	[83.333]	0.45 @	(0.41)	[81.967]	0.52 @	(0.41)	[81.967]
Calcium	48000	(310)	[310.000]	28000	(83)	[83.333]	31000	(82)	[81.967]	24000	(82)	[81.967]
Chromium	4.5	(0.78)	[77.519]	4.4	(0.83)	[83.333]	4.8	(0.82)	[81.967]	6.2	(0.82)	[81.967]
Cobalt	1 @	(0.78)	[77.519]	1.2 @	(0.83)	[83.333]	1.3 @	(0.82)	[81.967]	1.3 @	(0.82)	[81.967]
Copper	2.4 @	(1.6)	[77.519]	1.3 @	(1.7)	[83.333]	1.7 @	(1.6)	[81.967]	1.5 @	(1.6)	[81.967]
Iron	3800	(16)	[310.000]	3700	(4.2)	[83.333]	3300	(4.1)	[81.967]	3800	(4.1)	[81.967]
Lead	3.3 @	(3.9)	[77.519]	1.6 @	(4.2)	[83.333]	3.7 @	(4.1)	[81.967]	4.5 @	(4.1)	[81.967]
Magnesium	9600	(310)	[310.000]	5800	(83)	[83.333]	8000	(82)	[81.967]	5400	(82)	[81.967]
Manganese	31	(3.1)	[310.000]	37	(0.83)	[83.333]	35	(0.82)	[81.967]	40	(0.82)	[81.967]
Molybdenum	0.48 @	(3.9)	[77.519]	0.41 @	(4.2)	[83.333]	0.31 @	(4.1)	[81.967]	0.5 @	(4.1)	[81.967]
Nickel	4 @	(1.6)	[77.519]	3.7 @	(1.7)	[83.333]	3.7 @	(1.6)	[81.967]	3.4 @	(1.6)	[81.967]
Potassium	1100 @	(230)	[77.519]	980 @	(250)	[83.333]	780 @	(250)	[81.967]	890 @	(250)	[81.967]
Selenium	ND	(23)	[77.519]	ND	(25)	[83.333]	ND	(25)	[81.967]	ND	(25)	[81.967]
Silver	ND	(0.78)	[77.519]	ND	(0.83)	[83.333]	ND	(0.82)	[81.967]	ND	(0.82)	[81.967]
Sodium	210 @	(78)	[77.519]	130 @	(83)	[83.333]	130 @	(82)	[81.967]	110 @	(82)	[81.967]
Thallium	ND	(7.8)	[77.519]	0.73 @	(8.3)	[83.333]	ND	(8.2)	[81.967]	ND	(8.2)	[81.967]
Vanadium	11	(1.6)	[77.519]	12	(1.7)	[83.333]	14	(1.6)	[81.967]	15	(1.6)	[81.967]
Zinc	8.6	(1.6)	[77.519]	7 @	(1.7)	[83.333]	7.9 @	(1.6)	[81.967]	7.3 @	(1.6)	[81.967]
SW7060 - Arsenic (mg/kg)												
Arsenic	1.7	(0.3)	[73.760]	1.1 @	(0.34)	[85.016]	1.1 @	(0.29)	[72.307]	1.6	(0.3)	[74.051]

() = Reporting Limit [] = Factor Not Detected NA = Not Applicable

Compiled: 8 Febr 1994

TABLE B2 RESULTS OF INORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 09 CAN97-09-08 34 - 36			NONE 09 CAN97-09-09 39 - 41			NONE 09 CAN97-09-10 44 - 46			NONE 09 CAN97-09-11 49 - 53		
SW7421 - Lead (mg/kg)												
Lead	3.1	(0.44)	[147.520]	3.7	(0.51)	[170.032]	2.4	(0.22)	[72.307]	2.1	(0.22)	[74.051]
SW7471 - Mercury (mg/kg)												
Mercury	ND	(0.048)	[267.380]	ND	(0.042)	[231.022]	ND	(0.049)	[271.150]	ND	(0.047)	[262.881]
SW7740 - Selenium (mg/kg)												
Selenium	0.24 @	(0.37)	[73.760]	0.054 @	(0.43)	[85.016]	0.087 @	(0.36)	[72.307]	ND	(0.37)	[74.051]
Soil pH (pH units)												
pH	8.3	()	[1.000]	8.5	()	[1.000]	8.2	()	[1.000]	8.4	()	[1.000]

TABLE B2

RESULTS OF INORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 09 CAN97-09-12 54 - 56			NONE 09 CAN97-09-13 59 - 61			NONE 10 CAN97-10-01 0 - 2			NONE 10 CAN97-10-02 4 - 6		
Percent moisture (%)												
Percent moisture	3	()	[1.000]	2.4	()	[1.000]	6.3	()	[1.000]	9.4	()	[1.000]
SW6010 - Metals (mg/kg)												
Aluminum	2900	(14)	[71.429]	1700	(15)	[73.529]	8300	(18)	[91.743]	6600	(140)	[708.000]
Antimony	ND	(7.1)	[71.429]	ND	(7.4)	[73.529]	ND	(9.2)	[91.743]	ND	(71)	[708.000]
Arsenic	1.1 @	(21)	[71.429]	0.026 @	(22)	[73.529]	ND	(28)	[91.743]	ND	(27)	[88.496]
Barium	14	(0.71)	[71.429]	12	(0.74)	[73.529]	84	(0.92)	[91.743]	290	(7.1)	[708.000]
Beryllium	0.098 @	(0.14)	[71.429]	0.071 @	(0.15)	[73.529]	0.36 @	(0.18)	[91.743]	0.3 @	(0.18)	[88.496]
Cadmium	0.34 @	(0.36)	[71.429]	0.18 @	(0.37)	[73.529]	0.35 @	(0.46)	[91.743]	0.24 @	(0.44)	[88.496]
Calcium	5700	(71)	[71.429]	2500	(74)	[73.529]	17000	(92)	[91.743]	210000	(710)	[708.000]
Chromium	3 @	(0.71)	[71.429]	2 @	(0.74)	[73.529]	8.2	(0.92)	[91.743]	3.9 @	(0.88)	[88.496]
Cobalt	1.2 @	(0.71)	[71.429]	0.68 @	(0.74)	[73.529]	2.6 @	(0.92)	[91.743]	1.7 @	(0.88)	[88.496]
Copper	0.81 @	(1.4)	[71.429]	0.85 @	(1.5)	[73.529]	4.8 @	(1.8)	[91.743]	1.9 @	(1.8)	[88.496]
Iron	2900	(3.6)	[71.429]	2300	(3.7)	[73.529]	7400	(4.6)	[91.743]	4000	(35)	[708.000]
Lead	3.2 @	(3.6)	[71.429]	2.9 @	(3.7)	[73.529]	8.5 @	(4.6)	[91.743]	ND	(4.4)	[88.496]
Magnesium	1700	(71)	[71.429]	910	(74)	[73.529]	1200	(92)	[91.743]	3900	(710)	[708.000]
Manganese	35	(0.71)	[71.429]	23	(0.74)	[73.529]	130	(0.92)	[91.743]	52	(7.1)	[708.000]
Molybdenum	ND	(3.6)	[71.429]	0.46 @	(3.7)	[73.529]	0.19 @	(4.6)	[91.743]	ND	(4.4)	[88.496]
Nickel	2.4 @	(1.4)	[71.429]	ND @	(1.5)	[73.529]	6.2 @	(1.8)	[91.743]	4.5 @	(1.8)	[88.496]
Potassium	540 @	(210)	[71.429]	310 @	(220)	[73.529]	1600	(280)	[91.743]	760 @	(270)	[88.496]
Selenium	ND	(21)	[71.429]	ND	(22)	[73.529]	ND	(28)	[91.743]	1.3 @	(27)	[88.496]
Silver	ND	(0.71)	[71.429]	ND	(0.74)	[73.529]	ND	(0.92)	[91.743]	ND	(0.88)	[88.496]
Sodium	64 @	(71)	[71.429]	50 @	(74)	[73.529]	37 @	(92)	[91.743]	85 @	(88)	[88.496]
Thallium	ND	(7.1)	[71.429]	ND	(7.4)	[73.529]	ND	(9.2)	[91.743]	ND	(8.8)	[88.496]
Vanadium	9	(1.4)	[71.429]	6 @	(1.5)	[73.529]	16	(1.8)	[91.743]	9.6	(1.8)	[88.496]
Zinc	5.1 @	(1.4)	[71.429]	4.5 @	(1.5)	[73.529]	22	(1.8)	[91.743]	9.3	(1.8)	[88.496]
SW7041 - Antimony by AA (mg/kg)												
Antimony	NA			NA			NA			0.077 @	(0.51)	[85.562]

TABLE B2 RESULTS OF INORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 09 CAN97-09-12 54 - 56			NONE 09 CAN97-09-13 59 - 61			NONE 10 CAN97-10-01 0 - 2			NONE 10 CAN97-10-02 4 - 6		
SW7060 - Arsenic (mg/kg)												
Arsenic	1.1 @	(0.29)	[73.115]	0.81 @	(0.33)	[81.317]	2.6	(0.38)	[94.446]	3.8	(0.38)	[94.338]
SW7421 - Lead (mg/kg)												
Lead	3	(0.22)	[73.115]	1.6	(0.24)	[81.317]	9.2	(0.57)	[188.891]	2.8	(0.28)	[94.338]
SW7471 - Mercury (mg/kg)												
Mercury	ND	(0.037)	[206.186]	ND	(0.037)	[204.918]	0.02 @	(0.051)	[280.852]	0.017 @	(0.043)	[239.946]
SW7740 - Selenium (mg/kg)												
Selenium	ND	(0.37)	[73.115]	0.033 @	(0.41)	[81.317]	ND	(0.47)	[94.446]	0.78 @	(0.47)	[94.338]
SW7841 - Thallium (mg/kg)												
Thallium	NA			NA			0.12 @	(0.47)	[94.446]	NA		
Soil pH (pH units)												
pH	8.4	()	[1.000]	8.3	()	[1.000]	8.4	()	[1.000]	8.4	()	[1.000]

TABLE B2

RESULTS OF INORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 10 CAN97-10-03 9 - 11			NONE 10 CAN97-10-04 14 - 16			NONE 10 CAN97-10-05 19 - 21			NONE 10 CAN97-10-99 Dup of CAN97-10-05 19 - 21		
Percent moisture (%)												
Percent moisture	7.3	()	[1.000]	9.7	()	[1.000]	12	()	[1.000]	11	()	[1.000]
SW6010 - Metals (mg/kg)												
Aluminum	8100	(75)	[377.359]	6400	(78)	[388.350]	6300	(82)	[408.163]	6200	(77)	[384.615]
Antimony	ND	(38)	[377.359]	ND	(39)	[388.350]	ND	(41)	[408.163]	ND	(38)	[384.615]
Arsenic	ND	(28)	[94.000]	3.3 @	(29)	[97.000]	1.7 @	(31)	[102.041]	ND	(29)	[96.154]
Barium	220	(3.8)	[377.359]	130	(3.9)	[388.350]	99	(4.1)	[408.163]	240	(3.8)	[384.615]
Beryllium	0.33 @	(0.19)	[94.000]	0.2 @	(0.19)	[97.000]	0.17 @	(0.2)	[102.041]	0.18 @	(0.19)	[96.154]
Cadmium	0.13 @	(0.47)	[94.000]	0.38 @	(0.48)	[97.000]	0.31 @	(0.51)	[102.041]	0.28 @	(0.48)	[96.154]
Calcium	68000	(380)	[377.359]	210000	(390)	[388.350]	160000	(410)	[408.163]	140000	(380)	[384.615]
Chromium	6.7	(0.94)	[94.000]	5.6	(0.97)	[97.000]	6.2	(1)	[102.041]	5.8	(0.96)	[96.154]
Cobalt	2.7 @	(0.94)	[94.000]	1.7 @	(0.97)	[97.000]	1.4 @	(1)	[102.041]	1.4 @	(0.96)	[96.154]
Copper	2.5 @	(1.9)	[94.000]	7.5 @	(1.9)	[97.000]	ND @	(2)	[102.041]	ND @	(1.9)	[96.154]
Iron	6800	(19)	[377.359]	4000	(19)	[388.350]	3800	(20)	[408.163]	3900	(19)	[384.615]
Lead	ND	(4.7)	[94.000]	ND	(4.8)	[97.000]	ND	(5.1)	[102.041]	ND	(4.8)	[96.154]
Magnesium	3000	(380)	[377.359]	5200	(390)	[388.350]	12000	(410)	[408.163]	11000	(380)	[384.615]
Manganese	100	(3.8)	[377.359]	36	(3.9)	[388.350]	31	(4.1)	[408.163]	34	(3.8)	[384.615]
Molybdenum	0.38 @	(4.7)	[94.000]	0.084 @	(4.8)	[97.000]	0.0065 @	(5.1)	[102.041]	ND	(4.8)	[96.154]
Nickel	4.7 @	(1.9)	[94.000]	3.9 @	(1.9)	[97.000]	3.8 @	(2)	[102.041]	3.9 @	(1.9)	[96.154]
Potassium	1600	(280)	[94.000]	1100 @	(290)	[97.000]	1100 @	(310)	[102.041]	990 @	(290)	[96.154]
Selenium	3.4 @	(28)	[94.000]	ND	(29)	[97.000]	ND	(31)	[102.041]	4.9 @	(29)	[96.154]
Silver	ND	(0.94)	[94.000]	ND	(0.97)	[97.000]	ND	(1)	[102.041]	ND	(0.96)	[96.154]
Sodium	170 @	(94)	[94.000]	210 @	(97)	[97.000]	240 @	(100)	[102.041]	230 @	(96)	[96.154]
Thallium	0.93 @	(9.4)	[94.000]	3.7 @	(9.7)	[97.000]	2.1 @	(10)	[102.041]	3.3 @	(9.6)	[96.154]
Vanadium	16	(1.9)	[94.000]	10	(1.9)	[97.000]	18	(2)	[102.041]	18	(1.9)	[96.154]
Zinc	15	(1.9)	[94.000]	9.3 @	(1.9)	[97.000]	7.5 @	(2)	[102.041]	8.2 @	(1.9)	[96.154]
SW7060 - Arsenic (mg/kg)												
Arsenic	2	(0.36)	[89.153]	5	(0.38)	[93.849]	4	(0.36)	[90.186]	3.8	(0.38)	[95.220]

Compiled: 8 Februa 194 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B2 RESULTS OF INORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 10 CAN97-10-03 9 - 11			NONE 10 CAN97-10-04 14 - 16			NONE 10 CAN97-10-05 19 - 21			NONE 10 CAN97-10-99 Dup of CAN97-10-05 19 - 21		
SW7421 - Lead (mg/kg)												
Lead	3.8	(0.27)	[89.153]	1.9	(0.28)	[93.849]	1.8	(0.27)	[90.188]	2.2	(0.29)	[95.220]
SW7471 - Mercury (mg/kg)												
Mercury	0.017 @	(0.039)	[215.750]	0.018 @	(0.042)	[230.712]	0.016 @	(0.046)	[258.264]	0.011 @	(0.048)	[267.523]
SW7740 - Selenium (mg/kg)												
Selenium	ND	(0.45)	[89.153]	1.6 @	(0.47)	[93.849]	0.36 @	(0.45)	[90.188]	0.17 @	(0.48)	[95.220]
Soil pH (pH units)												
pH	8.7	()	[1.000]	8.5	()	[1.000]	8.3	()	[1.000]	8.3	()	[1.000]

TABLE B2

RESULTS OF INORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID											
	LOCATION ID											
	SAMPLE ID											
	BEG. DEPTH - END DEPTH (FT.)											
	NONE			NONE			NONE			NONE		
	10			10			10			10		
	CAN97-10-06			CAN97-10-07			CAN97-10-08			CAN97-10-09		
	24 - 26			29 - 31			34 - 36			39 - 41		
Percent moisture (%)												
Percent moisture	11	()	[1.000]	5.7	()	[1.000]	6.5	()	[1.000]	5.4	()	[1.000]
SW6010 - Metals (mg/kg)												
Aluminum	11000	(72)	[360.360]	6100	(72)	[360.360]	5100	(69)	[344.828]	4400	(17)	[85.470]
Antimony	ND	(36)	[360.360]	ND	(36)	[360.360]	ND	(34)	[344.828]	0.02 @	(8.5)	[85.470]
Arsenic	2 @	(27)	[90.090]	ND	(27)	[90.090]	ND	(26)	[86.207]	ND	(26)	[85.470]
Barium	630	(3.6)	[360.360]	85	(3.6)	[360.360]	52	(3.4)	[344.828]	14	(0.85)	[85.470]
Beryllium	0.28 @	(0.18)	[90.090]	0.15 @	(0.18)	[90.090]	0.14 @	(0.17)	[86.207]	0.15 @	(0.17)	[85.470]
Cadmium	ND	(0.45)	[90.090]	0.03 @	(0.45)	[90.090]	0.16 @	(0.43)	[86.207]	0.11 @	(0.43)	[85.470]
Calcium	64000	(360)	[360.360]	90000	(360)	[360.360]	59000	(340)	[344.828]	16000	(85)	[85.470]
Chromium	9	(0.9)	[90.090]	4.7	(0.9)	[90.090]	4.6	(0.86)	[86.207]	4.1 @	(0.85)	[85.470]
Cobalt	2.6 @	(0.9)	[90.090]	1.4 @	(0.9)	[90.090]	1.5 @	(0.86)	[86.207]	1.7 @	(0.85)	[85.470]
Copper	2.3 @	(1.8)	[90.090]	0.95 @	(1.8)	[90.090]	1.2 @	(1.7)	[86.207]	0.95 @	(1.7)	[85.470]
Iron	6800	(18)	[360.360]	4200	(18)	[360.360]	4200	(17)	[344.828]	3900	(4.3)	[85.470]
Lead	2.1 @	(4.5)	[90.090]	ND	(4.5)	[90.090]	ND	(4.3)	[86.207]	ND	(4.3)	[85.470]
Magnesium	12000	(360)	[360.360]	4800	(360)	[360.360]	5400	(340)	[344.828]	4000	(85)	[85.470]
Manganese	58	(3.6)	[360.360]	35	(3.6)	[360.360]	43	(3.4)	[344.828]	46	(0.85)	[85.470]
Molybdenum	ND	(4.5)	[90.090]	0.2 @	(4.5)	[90.090]	0.085 @	(4.3)	[86.207]	0.2 @	(4.3)	[85.470]
Nickel	6 @	(1.8)	[90.090]	1.9 @	(1.8)	[90.090]	3 @	(1.7)	[86.207]	2.5 @	(1.7)	[85.470]
Potassium	2000	(270)	[90.090]	1100 @	(270)	[90.090]	930 @	(260)	[86.207]	920 @	(260)	[85.470]
Selenium	3.7 @	(27)	[90.090]	1.3 @	(27)	[90.090]	1.2 @	(26)	[86.207]	ND	(26)	[85.470]
Silver	ND	(0.9)	[90.090]	ND	(0.9)	[90.090]	ND	(0.86)	[86.207]	ND	(0.85)	[85.470]
Sodium	290 @	(90)	[90.090]	180 @	(90)	[90.090]	140 @	(86)	[86.207]	83 @	(85)	[85.470]
Thallium	3.2 @	(9)	[90.090]	3 @	(9)	[90.090]	ND	(8.6)	[86.207]	1.2 @	(8.5)	[85.470]
Vanadium	23	(1.8)	[90.090]	9.3	(1.8)	[90.090]	11	(1.7)	[86.207]	11	(1.7)	[85.470]
Zinc	12	(1.8)	[90.090]	6.9 @	(1.8)	[90.090]	6.8 @	(1.7)	[86.207]	7 @	(1.7)	[85.470]
SW7060 - Arsenic (mg/kg)												
Arsenic	3.4	(0.34)	[83.850]	2.4	(0.35)	[86.922]	1.7 @	(0.37)	[91.412]	0.97 @	(0.36)	[91.128]

Compiled: 8 Februa 194 () = Reporting Limit [] = Factor Not Detected NA = Not Applicable

TABLE B2 RESULTS OF INORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 10 CAN97-10-06 24 - 26			NONE 10 CAN97-10-07 29 - 31			NONE 10 CAN97-10-08 34 - 36			NONE 10 CAN97-10-09 39 - 41		
SW7421 - Lead (mg/kg)												
Lead	4.1	(0.25)	[83.850]	1.8	(0.26)	[86.922]	1.9	(0.27)	[91.412]	2.1	(0.27)	[91.128]
SW7471 - Mercury (mg/kg)												
Mercury	0.016 @	(0.04)	[224.719]	0.013 @	(0.045)	[252.487]	0.011 @	(0.04)	[222.816]	0.016 @	(0.041)	[229.801]
SW7740 - Selenium (mg/kg)												
Selenium	0.34 @	(0.42)	[83.850]	0.26 @	(0.43)	[86.922]	ND	(0.46)	[91.412]	ND	(0.46)	[91.128]
Soil pH (pH units)												
pH	8.4	()	[1.000]	8.5	()	[1.000]	8.4	()	[1.000]	8.4	()	[1.000]

TABLE B2

RESULTS OF INORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 10 CAN97-10-10 44 - 46			NONE 10 CAN97-10-11 49 - 51			NONE 10 CAN97-10-12 54 - 56			NONE 10 CAN97-10-13 59 - 61		
Percent moisture (%)												
Percent moisture	8	()	[1.000]	4.6	()	[1.000]	4.5	()	[1.000]	3.6	()	[1.000]
SW6010 - Metals (mg/kg)												
Aluminum	4000	(17)	[83.333]	2100	(16)	[78.740]	2200	(17)	[85.470]	1500	(16)	[81.967]
Antimony	ND	(8.3)	[83.333]	2.5 @	(7.9)	[78.740]	ND	(8.5)	[85.470]	3.8 @	(8.2)	[81.967]
Arsenic	ND	(25)	[83.333]	ND	(24)	[78.740]	ND	(26)	[85.470]	ND	(25)	[81.967]
Barium	23	(0.83)	[83.333]	11	(0.79)	[78.740]	11	(0.85)	[85.470]	22	(0.82)	[81.967]
Beryllium	0.13 @	(0.17)	[83.333]	0.092 @	(0.16)	[78.740]	0.083 @	(0.17)	[85.470]	0.073 @	(0.16)	[81.967]
Cadmium	0.087 @	(0.42)	[83.333]	0.32 @	(0.39)	[78.740]	0.35 @	(0.43)	[85.470]	0.12 @	(0.41)	[81.967]
Calcium	22000	(83)	[83.333]	12000	(79)	[78.740]	12000	(85)	[85.470]	310 @	(82)	[81.967]
Chromium	4.3	(0.83)	[83.333]	2.1 @	(0.79)	[78.740]	2.6 @	(0.85)	[85.470]	1.7 @	(0.82)	[81.967]
Cobalt	1.3 @	(0.83)	[83.333]	0.84 @	(0.79)	[78.740]	1 @	(0.85)	[85.470]	0.7 @	(0.82)	[81.967]
Copper	0.81 @	(1.7)	[83.333]	0.62 @	(1.6)	[78.740]	0.72 @	(1.7)	[85.470]	1 @	(1.6)	[81.967]
Iron	3700	(4.2)	[83.333]	2400	(3.9)	[78.740]	2700	(4.3)	[85.470]	2200	(4.1)	[81.967]
Lead	ND	(4.2)	[83.333]	ND	(3.9)	[78.740]	0.23 @	(4.3)	[85.470]	1.1 @	(4.1)	[81.967]
Magnesium	4500	(83)	[83.333]	1700	(79)	[78.740]	1300	(85)	[85.470]	790	(82)	[81.967]
Manganese	43	(0.83)	[83.333]	23	(0.79)	[78.740]	31	(0.85)	[85.470]	26	(0.82)	[81.967]
Molybdenum	0.073 @	(4.2)	[83.333]	ND	(3.9)	[78.740]	ND	(4.3)	[85.470]	ND	(4.1)	[81.967]
Nickel	2.7 @	(1.7)	[83.333]	1.8 @	(1.6)	[78.740]	1 @	(1.7)	[85.470]	1.4 @	(1.6)	[81.967]
Potassium	680 @	(250)	[83.333]	380 @	(240)	[78.740]	390 @	(260)	[85.470]	320 @	(250)	[81.967]
Selenium	1.6 @	(25)	[83.333]	1.7 @	(24)	[78.740]	ND	(26)	[85.470]	ND	(25)	[81.967]
Silver	ND	(0.83)	[83.333]	0.13 @	(0.79)	[78.740]	ND	(0.85)	[85.470]	0.24 @	(0.82)	[81.967]
Sodium	65 @	(83)	[83.333]	38 @	(79)	[78.740]	30 @	(85)	[85.470]	22 @	(82)	[81.967]
Thallium	1.4 @	(8.3)	[83.333]	ND	(7.9)	[78.740]	ND	(8.5)	[85.470]	0.62 @	(8.2)	[81.967]
Vanadium	13	(1.7)	[83.333]	8.3	(1.6)	[78.740]	7.5 @	(1.7)	[85.470]	5.8 @	(1.6)	[81.967]
Zinc	6.5 @	(1.7)	[83.333]	4.1 @	(1.6)	[78.740]	4.3 @	(1.7)	[85.470]	3.9 @	(1.6)	[81.967]
SW7060 - Arsenic (mg/kg)												
Arsenic	1.1 @	(0.34)	[84.919]	0.81 @	(0.34)	[85.221]	0.66 @	(0.35)	[86.539]	0.39 @	(0.32)	[79.187]

Compiled: 8 Febru 1994 () = Reporting Limit [ ] = Factor ND = Not Detected NA = Not Applicable

TABLE B2 RESULTS OF INORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 10 CAN97-10-10 44 - 46			NONE 10 CAN97-10-11 49 - 51			NONE 10 CAN97-10-12 54 - 56			NONE 10 CAN97-10-13 59 - 61		
SW7421 - Lead (mg/kg)												
Lead	1.3	(0.25)	[84.919]	1.1 @	(0.26)	[85.221]	0.97 @	(0.26)	[86.539]	0.63 @	(0.24)	[79.187]
SW7471 - Mercury (mg/kg)												
Mercury	0.013 @	(0.039)	[217.391]	0.011 @	(0.041)	[227.873]	0.015 @	(0.045)	[249.314]	0.011 @	(0.041)	[225.510]
SW7740 - Selenium (mg/kg)												
Selenium	ND	(0.42)	[84.919]	ND	(0.43)	[85.580]	ND	(0.43)	[86.539]	ND	(0.4)	[79.187]
Soil pH (pH units)												
pH	8.5	()	[1.000]	8.4	()	[1.000]	8.5	()	[1.000]	8.3	()	[1.000]

TABLE B2

RESULTS OF INORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 11 CAN97-11-01 0 - 2			NONE 11 CAN97-11-02 4 - 6			NONE 11 CAN97-11-03 9 - 11			NONE 11 CAN97-11-04 14 - 16		
Percent moisture (%)												
Percent moisture	11	()	[1.000]	15	()	[1.000]	12	()	[1.000]	14	()	[1.000]
SW6010 - Metals (mg/kg)												
Aluminum	15000	(20)	[100.000]	6600	(21)	[104.167]	13000	(21)	[103.093]	15000	(20)	[98.039]
Antimony	1.5 @	(10)	[100.000]	ND	(100)	[041.666]	ND	(41)	[412.371]	ND	(39)	[392.157]
Arsenic	ND	(30)	[100.000]	4.8 @	(31)	[104.167]	8.4 @	(31)	[103.093]	3.6 @	(29)	[98.039]
Barium	90	(1)	[100.000]	460	(1)	[104.167]	670	(1)	[103.093]	110	(0.98)	[98.039]
Beryllium	0.45 @	(0.2)	[100.000]	0.092 @	(0.21)	[104.167]	0.51 @	(0.21)	[103.093]	0.38 @	(0.2)	[98.039]
Cadmium	0.44 @	(0.5)	[100.000]	0.13 @	(0.52)	[104.167]	ND	(0.52)	[103.093]	0.31 @	(0.49)	[98.039]
Calcium	4100	(100)	[100.000]	260000	(1000)	[041.666]	98000	(410)	[412.371]	120000	(390)	[392.157]
Chromium	15	(1)	[100.000]	4.9 @	(1)	[104.167]	8.5	(1)	[103.093]	12	(0.98)	[98.039]
Cobalt	4.1 @	(1)	[100.000]	2.1 @	(1)	[104.167]	3 @	(1)	[103.093]	1.9 @	(0.98)	[98.039]
Copper	8.8 @	(2)	[100.000]	3.6 @	(2.1)	[104.167]	4.6 @	(2.1)	[103.093]	4.8 @	(2)	[98.039]
Iron	12000	(5)	[100.000]	3800	(5.2)	[104.167]	7900	(5.2)	[103.093]	8700	(4.9)	[98.039]
Lead	10 @	(5)	[100.000]	ND	(5.2)	[104.167]	0.32 @	(5.2)	[103.093]	ND	(4.9)	[98.039]
Magnesium	1900	(100)	[100.000]	4400	(100)	[104.167]	5000	(100)	[103.093]	6300	(98)	[98.039]
Manganese	220	(1)	[100.000]	31	(1)	[104.167]	88	(1)	[103.093]	55	(0.98)	[98.039]
Molybdenum	0.55 @	(5)	[100.000]	0.22 @	(5.2)	[104.167]	0.093 @	(5.2)	[103.093]	0.37 @	(4.9)	[98.039]
Nickel	11	(2)	[100.000]	6.7 @	(2.1)	[104.167]	7.9 @	(2.1)	[103.093]	7 @	(2)	[98.039]
Potassium	3200	(300)	[100.000]	1200 @	(310)	[104.167]	2600	(310)	[103.093]	3300	(290)	[98.039]
Selenium	ND	(30)	[100.000]	0.42 @	(31)	[104.167]	ND	(31)	[103.093]	ND	(29)	[98.039]
Silver	ND	(1)	[100.000]	ND	(1)	[104.167]	ND	(1)	[103.093]	ND	(0.98)	[98.039]
Sodium	32 @	(100)	[100.000]	91 @	(100)	[104.167]	230 @	(100)	[103.093]	330 @	(98)	[98.039]
Thallium	5.5 @	(10)	[100.000]	2.9 @	(10)	[104.167]	3.1 @	(10)	[103.093]	4.9 @	(9.8)	[98.039]
Vanadium	26	(2)	[100.000]	16 @	(21)	[041.666]	22 @	(8.2)	[412.371]	32 @	(7.8)	[392.157]
Zinc	34	(2)	[100.000]	10 @	(21)	[041.666]	23 @	(8.2)	[412.371]	23 @	(7.8)	[392.157]
SW7041 - Antimony by AA (mg/kg)												
Antimony	NA			0.028 @	(0.57)	[94.877]	NA			NA		

Compiled: 8 Februa 994

() = Reporting Limit [] = Factor ND Not Detected NA = Not Applicable

TABLE B2 RESULTS OF INORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 11 CAN97-11-01 0 - 2			NONE 11 CAN97-11-02 4 - 6			NONE 11 CAN97-11-03 9 - 11			NONE 11 CAN97-11-04 14 - 16		
SW7060 - Arsenic (mg/kg)												
Arsenic	3.9	(0.4)	[101.225]	4.2	(0.41)	[103.199]	3.4	(0.39)	[96.302]	7.9	(0.77)	[192.197]
SW7421 - Lead (mg/kg)												
Lead	9.2	(0.61)	[202.450]	2	(0.31)	[103.199]	4.4	(0.29)	[96.302]	3.5	(0.29)	[96.098]
SW7471 - Mercury (mg/kg)												
Mercury	ND	(0.053)	[295.683]	0 @	(0.053)	[294.118]	ND	(0.057)	[315.657]	0 @	(0.052)	[290.698]
SW7740 - Selenium (mg/kg)												
Selenium	0.18 @	(0.51)	[101.225]	0.4 @	(0.52)	[103.199]	0.083 @	(0.48)	[96.302]	0.17 @	(0.48)	[96.098]
SW7841 - Thallium (mg/kg)												
Thallium	ND	(0.51)	[101.225]	NA			NA			0.077 @	(0.48)	[96.098]
Soil pH (pH units)												
pH	8.4	()	[1.000]	8.4	()	[1.000]	8.6	()	[1.000]	9	()	[1.000]

TABLE B2 RESULTS OF INORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID: NONE LOCATION ID: 11 SAMPLE ID: CAN97-11-05 BEG. DEPTH - END DEPTH (FT.): 19 - 21			SITE ID: NONE LOCATION ID: 11 SAMPLE ID: CAN97-11-06 BEG. DEPTH - END DEPTH (FT.): 24 - 26			SITE ID: NONE LOCATION ID: 11 SAMPLE ID: CAN97-11-07 BEG. DEPTH - END DEPTH (FT.): 29 - 31			SITE ID: NONE LOCATION ID: 11 SAMPLE ID: CAN97-11-08 BEG. DEPTH - END DEPTH (FT.): 34 - 36		
Percent moisture (%)												
Percent moisture	13	()	[1.000]	11	()	[1.000]	7.9	()	[1.000]	11	()	[1.000]
SW6010 - Metals (mg/kg)												
Aluminum	20000	(20)	[100.000]	13000	(19)	[97.087]	11000	(19)	[92.593]	5600	(19)	[96.154]
Antimony	ND	(10)	[100.000]	0.48 @	(9.7)	[97.087]	3.5 @	(9.3)	[92.593]	ND	(9.6)	[96.154]
Arsenic	ND	(30)	[100.000]	ND	(29)	[97.087]	ND	(28)	[92.593]	ND	(29)	[96.154]
Barium	640	(1)	[100.000]	53	(0.97)	[97.087]	200	(0.93)	[92.593]	140	(0.96)	[96.154]
Beryllium	0.85 @	(0.2)	[100.000]	0.24 @	(0.19)	[97.087]	ND @	(0.19)	[92.593]	0.037 @	(0.19)	[96.154]
Cadmium	ND	(0.5)	[100.000]	0.25 @	(0.49)	[97.087]	ND	(0.46)	[92.593]	ND	(0.48)	[96.154]
Calcium	28000	(100)	[100.000]	28000	(97)	[97.087]	6300	(93)	[92.593]	37000	(96)	[96.154]
Chromium	13	(1)	[100.000]	9	(0.97)	[97.087]	9	(0.93)	[92.593]	5	(0.96)	[96.154]
Cobalt	3.5 @	(1)	[100.000]	2.2 @	(0.97)	[97.087]	1.5 @	(0.93)	[92.593]	1.2 @	(0.96)	[96.154]
Copper	4.6 @	(2)	[100.000]	2.6 @	(1.9)	[97.087]	2.7 @	(1.9)	[92.593]	3.2 @	(1.9)	[96.154]
Iron	11000	(5)	[100.000]	7400	(4.9)	[97.087]	7700	(4.6)	[92.593]	4200	(4.8)	[96.154]
Lead	8.4 @	(5)	[100.000]	3 @	(4.9)	[97.087]	5 @	(4.6)	[92.593]	0.77 @	(4.8)	[96.154]
Magnesium	8000	(100)	[100.000]	8000	(97)	[97.087]	8100	(93)	[92.593]	10000	(96)	[96.154]
Manganese	150	(1)	[100.000]	43	(0.97)	[97.087]	50	(0.93)	[92.593]	42	(0.96)	[96.154]
Molybdenum	0.53 @	(5)	[100.000]	0.59 @	(4.9)	[97.087]	0.25 @	(4.6)	[92.593]	0.3 @	(4.8)	[96.154]
Nickel	9.1 @	(2)	[100.000]	5.9 @	(1.9)	[97.087]	5.5 @	(1.9)	[92.593]	5 @	(1.9)	[96.154]
Potassium	4500	(300)	[100.000]	2600	(290)	[97.087]	2400	(280)	[92.593]	1100 @	(290)	[96.154]
Selenium	ND	(30)	[100.000]	ND	(29)	[97.087]	ND	(28)	[92.593]	ND	(29)	[96.154]
Silver	ND	(1)	[100.000]	ND	(0.97)	[97.087]	ND	(0.93)	[92.593]	ND	(0.96)	[96.154]
Sodium	370 @	(100)	[100.000]	250 @	(97)	[97.087]	210 @	(93)	[92.593]	170 @	(96)	[96.154]
Thallium	5.2 @	(10)	[100.000]	2.6 @	(9.7)	[97.087]	6.5 @	(9.3)	[92.593]	6.2 @	(9.6)	[96.154]
Vanadium	39	(2)	[100.000]	19	(1.9)	[97.087]	17	(1.9)	[92.593]	14	(1.9)	[96.154]
Zinc	29	(2)	[100.000]	13	(1.9)	[97.087]	14	(1.9)	[92.593]	7.8 @	(1.9)	[96.154]
SW7060 - Arsenic (mg/kg)												
Arsenic	6.4	(0.4)	[100.827]	3.6	(0.39)	[96.862]	3.1	(0.39)	[96.944]	2.6	(0.37)	[93.633]

TABLE B2

RESULTS OF INORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 11 CAN97-11-05 19 - 21			NONE 11 CAN97-11-06 24 - 26			NONE 11 CAN97-11-07 29 - 31			NONE 11 CAN97-11-08 34 - 36		
SW7421 - Lead (mg/kg)												
Lead	5.6	(0.3)	[100.827]	2.7	(0.29)	[96.862]	2.4	(0.29)	[96.944]	1.2 @	(0.28)	[93.633]
SW7471 - Mercury (mg/kg)												
Mercury	ND	(0.045)	[249.875]	ND	(0.053)	[295.683]	0 @	(0.051)	[285.731]	ND	(0.051)	[280.899]
SW7740 - Selenium (mg/kg)												
Selenium	0.12 @	(0.5)	[100.827]	0.06 @	(0.48)	[96.862]	0.065 @	(0.48)	[96.944]	ND	(0.47)	[93.633]
SW7841 - Thallium (mg/kg)												
Thallium	0.05 @	(0.5)	[100.827]	NA			0.039 @	(0.48)	[96.944]	ND	(0.47)	[93.633]
Soil pH (pH units)												
pH	8.8	()	[1.000]	8.7	()	[1.000]	8.7	()	[1.000]	8.4	()	[1.000]

TABLE B2

RESULTS OF INORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 11 CAN97-11-09 39 - 41			NONE 11 CAN97-11-99 Dup of CAN97-11-09 39 - 41			NONE 11 CAN97-11-10 46 - 48			NONE 11 CAN97-11-11 51 - 53		
Percent moisture (%)												
Percent moisture	5.8	()	[1.000]	6	()	[1.000]	12	()	[1.000]	6.5	()	[1.000]
SW6010 - Metals (mg/kg)												
Aluminum	4400	(17)	[86.207]	4500	(19)	[93.458]	ND	(78)	[392.157]	3700	(18)	[88.496]
Antimony	5.2 @	(8.6)	[86.207]	2.8 @	(9.3)	[93.458]	ND	(20)	[196.078]	ND	(8.8)	[88.496]
Arsenic	ND	(26)	[86.207]	ND	(28)	[93.458]	ND	(120)	[392.157]	0.2 @	(27)	[88.496]
Barium	23	(0.86)	[86.207]	18	(0.93)	[93.458]	ND	(3.9)	[392.157]	490	(0.88)	[88.496]
Beryllium	0.03 @	(0.17)	[86.207]	0.033 @	(0.19)	[93.458]	ND	(0.78)	[392.157]	0.0053 @	(0.18)	[88.496]
Cadmium	0.16 @	(0.43)	[86.207]	0.075 @	(0.47)	[93.458]	1.3 @	(2)	[392.157]	0.14 @	(0.44)	[88.496]
Calcium	7100	(86)	[86.207]	6500	(93)	[93.458]	90000	(200)	[196.078]	28000	(88)	[88.496]
Chromium	4.1 @	(0.86)	[86.207]	4.3 @	(0.93)	[93.458]	ND	(3.9)	[392.157]	4.1 @	(0.88)	[88.496]
Cobalt	1.2 @	(0.86)	[86.207]	1.2 @	(0.93)	[93.458]	ND	(3.9)	[392.157]	1.6 @	(0.88)	[88.496]
Copper	1.5 @	(1.7)	[86.207]	2.1 @	(1.9)	[93.458]	ND	(7.8)	[392.157]	0.96 @	(1.8)	[88.496]
Iron	4100	(4.3)	[86.207]	4400	(4.7)	[93.458]	1.5 @	(20)	[392.157]	3500	(4.4)	[88.496]
Lead	0.79 @	(4.3)	[86.207]	0.25 @	(4.7)	[93.458]	ND	(20)	[392.157]	ND	(4.4)	[88.496]
Magnesium	3900	(86)	[86.207]	4100	(93)	[93.458]	8.2 @	(390)	[392.157]	3100	(88)	[88.496]
Manganese	39	(0.86)	[86.207]	37	(0.93)	[93.458]	ND	(3.9)	[392.157]	48	(0.88)	[88.496]
Molybdenum	0.32 @	(4.3)	[86.207]	0.44 @	(4.7)	[93.458]	ND	(20)	[392.157]	0.2 @	(4.4)	[88.496]
Nickel	3.3 @	(1.7)	[86.207]	4.2 @	(1.9)	[93.458]	0.84 @	(7.8)	[392.157]	2.1 @	(1.8)	[88.496]
Potassium	1000 @	(260)	[86.207]	1000 @	(280)	[93.458]	ND	(1200)	[392.157]	670 @	(270)	[88.496]
Selenium	ND	(26)	[86.207]	ND	(28)	[93.458]	ND	(120)	[392.157]	0.2 @	(27)	[88.496]
Silver	ND	(0.86)	[86.207]	ND	(0.93)	[93.458]	ND	(3.9)	[392.157]	ND	(0.88)	[88.496]
Sodium	110 @	(86)	[86.207]	110 @	(93)	[93.458]	34 @	(390)	[392.157]	77 @	(88)	[88.496]
Thallium	0.26 @	(8.6)	[86.207]	3 @	(9.3)	[93.458]	13 @	(39)	[392.157]	0.74 @	(8.8)	[88.496]
Vanadium	11	(1.7)	[86.207]	12	(1.9)	[93.458]	14 @	(3.9)	[196.078]	12	(1.8)	[88.496]
Zinc	7.1 @	(1.7)	[86.207]	7.3 @	(1.9)	[93.458]	7.9 @	(3.9)	[196.078]	5.5 @	(1.8)	[88.496]
SW7060 - Arsenic (mg/kg)												
Arsenic	1.3 @	(0.35)	[87.733]	1.1 @	(0.37)	[92.507]	2.4	(0.38)	[94.697]	1.7 @	(0.36)	[89.876]

Compiled: 8 Febry 1994 () = Reporting Limit [] = Factor ' Not Detected NA = Not Applicable

TABLE B2 RESULTS OF INORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 11 CAN97-11-09 39 - 41			NONE 11 CAN97-11-99 Dup of CAN97-11-09 39 - 41			NONE 11 CAN97-11-10 46 - 48			NONE 11 CAN97-11-11 51 - 53		
SW7421 - Lead (mg/kg)												
Lead	1.3	(0.26)	[87.733]	1.1 @	(0.28)	[92.507]	1.3 @	(0.28)	[94.697]	1.4	(0.27)	[89.876]
SW7471 - Mercury (mg/kg)												
Mercury	ND	(0.048)	[265.393]	ND	(0.04)	[221.631]	ND	(0.054)	[299.043]	ND	(0.051)	[281.452]
SW7740 - Selenium (mg/kg)												
Selenium	ND	(0.44)	[87.733]	ND	(0.46)	[92.507]	0.046 @	(0.47)	[94.697]	ND	(0.45)	[89.876]
SW7841 - Thallium (mg/kg)												
Thallium	NA			NA			ND	(0.47)	[94.697]	NA		
Soil pH (pH units)												
pH	8.4	()	[1.000]	8.5	()	[1.000]	8.4	()	[1.000]	8.2	()	[1.000]

TABLE B2

RESULTS OF INORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 11 CAN97-11-12 54 - 56			NONE 11 CAN97-11-13 59 - 61			NONE 12 CAN97-12-06 5 - 7			NONE 12 CAN97-12-1 4 - 6		
Percent moisture (%)												
Percent moisture	5.3	()	[1.000]	4.2	()	[1.000]	5.6	()	[1.000]	5.2	()	[1.000]
SW6010 - Metals (mg/kg)												
Aluminum	2800	(17)	[83.333]	2000	(16)	[78.125]	10000	(18)	[89.286]	14000	(17)	[86.207]
Antimony	ND	(8.3)	[83.333]	ND	(7.8)	[78.125]	ND @	(8.9)	[89.286]	ND @	(8.6)	[86.207]
Arsenic	ND	(25)	[83.333]	0.46 @	(23)	[78.125]	0.86 @	(120)	[388.350]	ND @	(26)	[86.207]
Barium	12	(0.83)	[83.333]	7.3	(0.78)	[78.125]	670	(0.89)	[89.286]	93	(0.86)	[86.207]
Beryllium	ND	(0.17)	[83.333]	ND	(0.16)	[78.125]	0.37 @	(0.18)	[89.286]	0.55 @	(0.17)	[86.207]
Cadmium	ND	(0.42)	[83.333]	ND	(0.39)	[78.125]	0.34 @	(1.9)	[388.350]	0.57 @	(0.43)	[86.207]
Calcium	8500	(83)	[83.333]	2000	(78)	[78.125]	200000	(390)	[388.350]	12000	(86)	[86.207]
Chromium	3 @	(0.83)	[83.333]	1.9 @	(0.78)	[78.125]	6.9	(0.89)	[89.286]	12	(0.86)	[86.207]
Cobalt	1.1 @	(0.83)	[83.333]	0.84 @	(0.78)	[78.125]	2.7 @	(3.9)	[388.350]	3.8 @	(0.86)	[86.207]
Copper	0.85 @	(1.7)	[83.333]	0.89 @	(1.6)	[78.125]	3.4 @	(7.8)	[388.350]	7.5 @	(1.7)	[86.207]
Iron	3100	(4.2)	[83.333]	2400	(3.9)	[78.125]	5900	(4.5)	[89.286]	10000	(4.3)	[86.207]
Lead	ND	(4.2)	[83.333]	ND	(3.9)	[78.125]	ND @	(19)	[388.350]	13 @	(4.3)	[86.207]
Magnesium	1800	(83)	[83.333]	1000	(78)	[78.125]	3400	(89)	[89.286]	1900	(86)	[86.207]
Manganese	26	(0.83)	[83.333]	26	(0.78)	[78.125]	64	(0.89)	[89.286]	180	(0.86)	[86.207]
Molybdenum	0.25 @	(4.2)	[83.333]	0.14 @	(3.9)	[78.125]	0.35 @	(4.5)	[89.286]	0.53 @	(4.3)	[86.207]
Nickel	2.6 @	(1.7)	[83.333]	ND @	(1.6)	[78.125]	5.5 @	(7.8)	[388.350]	8.4 @	(1.7)	[86.207]
Potassium	530 @	(250)	[83.333]	380 @	(230)	[78.125]	1500	(270)	[89.286]	2500	(260)	[86.207]
Selenium	ND	(25)	[83.333]	0.71 @	(23)	[78.125]	1.1 @	(27)	[89.286]	1.2 @	(26)	[86.207]
Silver	ND	(0.83)	[83.333]	ND	(0.78)	[78.125]	ND @	(0.89)	[89.286]	ND @	(0.86)	[86.207]
Sodium	57 @	(83)	[83.333]	37 @	(78)	[78.125]	64 @	(89)	[89.286]	30 @	(86)	[86.207]
Thallium	4.3 @	(8.3)	[83.333]	2.3 @	(7.8)	[78.125]	10 @	(39)	[388.350]	1.6 @	(8.6)	[86.207]
Vanadium	9.4	(1.7)	[83.333]	5.8 @	(1.6)	[78.125]	17	(1.8)	[89.286]	22	(1.7)	[86.207]
Zinc	4.8 @	(1.7)	[83.333]	3.6 @	(1.6)	[78.125]	18 @	(7.8)	[388.350]	27	(1.7)	[86.207]
SW7060 - Arsenic (mg/kg)												
Arsenic	1 @	(0.34)	[85.851]	0.51 @	(0.36)	[89.217]	4.9	(0.35)	[88.277]	6	(0.67)	[167.437]

Compiled: 8 Febr 1994 () = Reporting Limit [] = Factor Not Detected NA = Not Applicable

TABLE B2 RESULTS OF INORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 11 CAN97-11-12 54 - 56			NONE 11 CAN97-11-13 59 - 61			NONE 12 CAN97-12-06 5 - 7			NONE 12 CAN97-12-1 4 - 6		
SW7421 - Lead (mg/kg)												
Lead	1.8	(0.26)	[85.851]	0.95 @	(0.27)	[89.217]	4.1	(0.26)	[88.277]	6.5	(0.5)	[167.437]
SW7471 - Mercury (mg/kg)												
Mercury	ND	(0.041)	[229.558]	ND	(0.047)	[260.960]	ND @	(0.045)	[252.220]	ND @	(0.05)	[277.593]
SW7740 - Selenium (mg/kg)												
Selenium	ND	(0.43)	[85.851]	ND	(0.45)	[89.217]	0.37 @	(0.44)	[88.230]	ND @	(0.42)	[83.701]
SW7841 - Thallium (mg/kg)												
Thallium	0.034 @	(0.43)	[85.851]	NA			NA			NA		
Soil pH (pH units)												
pH	8.4	()	[1.000]	8.2	()	[1.000]	8.3	()	[1.000]	8.2	()	[1.000]

TABLE B2

RESULTS OF INORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 12 CAN97-12-S 0 - 2			NONE 13 CAN97-13-06 5 - 7			NONE 13 CAN97-13-I 4 - 6			NONE 13 CAN97-13-S 0 - 2		
Percent moisture (%)												
Percent moisture	0.99	()	[1.000]	12	()	[1.000]	7.9	()	[1.000]	2	()	[1.000]
SW6010 - Metals (mg/kg)												
Aluminum	18000	(15)	[74.815]	13000	(19)	[96.154]	14000	(18)	[88.496]	15000	(16)	[81.633]
Antimony	0.028 @	(7.5)	[74.815]	ND @	(9.6)	[96.154]	2.9 @	(8.8)	[88.496]	6.6 @	(8.2)	[81.633]
Arsenic	ND	(22)	[74.815]	ND @	(120)	[384.615]	ND @	(27)	[88.496]	ND	(24)	[81.633]
Barium	96	(0.75)	[74.815]	210	(3.8)	[384.615]	81	(0.88)	[88.496]	78	(0.82)	[81.633]
Beryllium	0.62 @	(0.15)	[74.815]	0.44 @	(0.19)	[96.154]	0.57 @	(0.18)	[88.496]	0.51 @	(0.16)	[81.633]
Cadmium	0.32 @	(0.37)	[74.815]	1.1 @	(1.9)	[384.615]	0.37 @	(0.44)	[88.496]	0.38 @	(0.41)	[81.633]
Calcium	6500	(75)	[74.815]	140000	(380)	[384.615]	2300	(88)	[88.496]	2900	(82)	[81.633]
Chromium	15	(0.75)	[74.815]	8.7	(0.96)	[96.154]	13	(0.88)	[88.496]	13	(0.82)	[81.633]
Cobalt	4.2	(0.75)	[74.815]	4 @	(3.8)	[384.615]	4.3 @	(0.88)	[88.496]	4 @	(0.82)	[81.633]
Copper	8.2	(1.5)	[74.815]	5.6 @	(7.7)	[384.615]	7.8 @	(1.8)	[88.496]	7.3 @	(1.6)	[81.633]
Iron	13000	(3.7)	[74.815]	7600	(4.8)	[96.154]	11000	(4.4)	[88.496]	11000	(4.1)	[81.633]
Lead	20	(3.7)	[74.815]	0.33 @	(19)	[384.615]	13 @	(4.4)	[88.496]	15 @	(4.1)	[81.633]
Magnesium	2100	(75)	[74.815]	3100	(96)	[96.154]	1600	(88)	[88.496]	1700	(82)	[81.633]
Manganese	210	(0.75)	[74.815]	86	(0.96)	[96.154]	210	(0.88)	[88.496]	230	(0.82)	[81.633]
Molybdenum	0.44 @	(3.7)	[74.815]	0.58 @	(4.8)	[96.154]	0.67 @	(4.4)	[88.496]	0.51 @	(4.1)	[81.633]
Nickel	10	(1.5)	[74.815]	5.3 @	(7.7)	[384.615]	8.9 @	(1.8)	[88.496]	9.1	(1.6)	[81.633]
Potassium	3200	(220)	[74.815]	1900	(290)	[96.154]	2300	(270)	[88.496]	2700	(240)	[81.633]
Selenium	0.87 @	(22)	[74.815]	ND @	(29)	[96.154]	ND @	(27)	[88.496]	2.4 @	(24)	[81.633]
Silver	ND	(0.75)	[74.815]	ND @	(0.96)	[96.154]	ND @	(0.88)	[88.496]	ND	(0.82)	[81.633]
Sodium	38 @	(75)	[74.815]	79 @	(96)	[96.154]	33 @	(88)	[88.496]	29 @	(82)	[81.633]
Thallium	ND	(7.5)	[74.815]	11 @	(38)	[384.615]	ND @	(8.8)	[88.496]	0.11 @	(8.2)	[81.633]
Vanadium	29	(1.5)	[74.815]	19	(1.9)	[96.154]	22	(1.8)	[88.496]	24	(1.6)	[81.633]
Zinc	31	(1.5)	[74.815]	20 @	(7.7)	[384.615]	26	(1.8)	[88.496]	28	(1.6)	[81.633]
SW7060 - Arsenic (mg/kg)												
Arsenic	5	(0.3)	[75.373]	5.6	(0.36)	[89.888]	5.2	(0.37)	[93.601]	4.3	(0.33)	[82.943]

Compiled: 8 Febr 1994 () = Reporting Limit [] = Factor = Not Detected NA = Not Applicable

TABLE B2

RESULTS OF INORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID	LOCATION ID	SAMPLE ID	BEG. DEPTH - END DEPTH (FT.)									
	NONE	12	CAN97-12-S	0 - 2			NONE	13	CAN97-13-06	5 - 7			
SW7421 - Lead (mg/kg)													
Lead	16	(0.9)	[301.492]				4.6	(0.27)	[90.909]				
SW7471 - Mercury (mg/kg)													
Mercury	0.029 @	(0.043)	[240.476]				ND @	(0.044)	[247.036]				
SW7740 - Selenium (mg/kg)													
Selenium	0.34 @	(0.38)	[75.373]				0.032 @	(0.45)	[90.600]				
Soil pH (pH units)													
pH	8.1	()	[1.000]				8.6	()	[1.000]				

PARAMETER	NONE	13	CAN97-13-I	4 - 6			NONE	13	CAN97-13-S	0 - 2		
SW7421 - Lead (mg/kg)												
Lead	7.7	(0.56)	[187.203]				9.3	(1)	[331.772]			
SW7471 - Mercury (mg/kg)												
Mercury	ND @	(0.049)	[271.444]				0.021 @	(0.042)	[231.911]			
SW7740 - Selenium (mg/kg)												
Selenium	ND @	(0.47)	[93.632]				0.32 @	(0.41)	[82.943]			
Soil pH (pH units)												
pH	7.2	()	[1.000]				8.2	()	[1.000]			

TABLE B2

RESULTS OF INORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID											
	LOCATION ID											
	SAMPLE ID											
	BEG. DEPTH - END DEPTH (FT.)											
	NONE			NONE			NONE			NONE		
	13			14			14			14		
	CAN97-13-99 Dup of CAN97-13-S			CAN97-14-01			CAN97-14-02			CAN97-14-99 Dup of CAN97-14-02		
	0 - 2			0 - 2			4 - 6			4 - 6		
Percent moisture (%)												
Percent moisture	2.4	()	[1.000]	6.3	()	[1.000]	6.8	()	[1.000]	6.6	()	[1.000]
SW6010 - Metals (mg/kg)												
Aluminum	13000	(15)	[74.246]	12000	(18)	[87.719]	8100	(19)	[93.458]	7300	(19)	[92.593]
Antimony	2.3 @	(7.4)	[74.246]	ND	(8.8)	[87.719]	ND	(37)	[373.832]	160 @	(74)	[740.741]
Arsenic	ND	(22)	[74.246]	ND	(26)	[87.719]	5.8 @	(28)	[93.458]	ND	(28)	[92.593]
Barium	83	(0.74)	[74.246]	83	(0.88)	[87.719]	460	(0.93)	[93.458]	330	(0.93)	[92.593]
Beryllium	0.48 @	(0.15)	[74.246]	0.54 @	(0.18)	[87.719]	0.4 @	(0.19)	[93.458]	0.37 @	(0.19)	[92.593]
Cadmium	0.31 @	(0.37)	[74.246]	ND	(0.44)	[87.719]	0.2 @	(0.47)	[93.458]	ND	(0.46)	[92.593]
Calcium	3300	(74)	[74.246]	3100	(88)	[87.719]	100000	(370)	[373.832]	190000	(740)	[740.741]
Chromium	12	(0.74)	[74.246]	11	(0.88)	[87.719]	5.6	(0.93)	[93.458]	5.3	(0.93)	[92.593]
Cobalt	3.5 @	(0.74)	[74.246]	4.1 @	(0.88)	[87.719]	2.2 @	(0.93)	[93.458]	2.2 @	(0.93)	[92.593]
Copper	7 @	(1.5)	[74.246]	7.5 @	(1.8)	[87.719]	2.7 @	(1.9)	[93.458]	2.7 @	(1.9)	[92.593]
Iron	10000	(3.7)	[74.246]	10000	(4.4)	[87.719]	4900	(4.7)	[93.458]	4800	(4.6)	[92.593]
Lead	12 @	(3.7)	[74.246]	8.4 @	(4.4)	[87.719]	ND	(4.7)	[93.458]	ND	(4.6)	[92.593]
Magnesium	1600	(74)	[74.246]	1500	(88)	[87.719]	3300	(93)	[93.458]	3200	(93)	[92.593]
Manganese	210	(0.74)	[74.246]	240	(0.88)	[87.719]	47	(0.93)	[93.458]	48	(0.93)	[92.593]
Molybdenum	0.55 @	(3.7)	[74.246]	0.24 @	(4.4)	[87.719]	0.42 @	(4.7)	[93.458]	ND	(4.6)	[92.593]
Nickel	8.6	(1.5)	[74.246]	8.7 @	(1.8)	[87.719]	5.7 @	(1.9)	[93.458]	5.7 @	(1.9)	[92.593]
Potassium	2500	(220)	[74.246]	2400	(260)	[87.719]	1200 @	(280)	[93.458]	1200 @	(280)	[92.593]
Selenium	ND	(22)	[74.246]	1.4 @	(26)	[87.719]	2.2 @	(28)	[93.458]	ND	(28)	[92.593]
Silver	ND	(0.74)	[74.246]	ND	(0.88)	[87.719]	ND	(0.93)	[93.458]	ND	(0.93)	[92.593]
Sodium	28 @	(74)	[74.246]	29 @	(88)	[87.719]	63 @	(93)	[93.458]	ND	(93)	[92.593]
Thallium	0.28 @	(7.4)	[74.246]	ND	(8.8)	[87.719]	ND	(9.3)	[93.458]	ND	(9.3)	[92.593]
Vanadium	22	(1.5)	[74.246]	21	(1.8)	[87.719]	15	(1.9)	[93.458]	15	(1.9)	[92.593]
Zinc	27	(1.5)	[74.246]	26	(1.8)	[87.719]	13	(1.9)	[93.458]	12	(1.9)	[92.593]
SW7041 - Antimony by AA (mg/kg)												
Antimony	NA			NA			NA			0.095 @	(0.52)	[86.344]

Compiled: 8 Febr 1994 () = Reporting Limit [] = Factor = Not Detected NA = Not Applicable

TABLE B2

RESULTS OF INORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID	LOCATION ID	SAMPLE ID	BEG. DEPTH - END DEPTH (FT.)								
	NONE	13	CAN97-13-99 Dup of CAN97-13-S	0 - 2			NONE	14	CAN97-14-01	0 - 2		
SW7060 - Arsenic (mg/kg)												
Arsenic	4	(0.29)	[73.704]	4.2	(0.37)	[93.617]	4.3	(0.36)	[90.165]	4.2	(0.35)	[87.759]
SW7421 - Lead (mg/kg)												
Lead	9.1	(0.88)	[294.816]	8.9	(0.56)	[187.234]	3.5	(0.27)	[90.165]	3	(0.26)	[87.759]
SW7471 - Mercury (mg/kg)												
Mercury	0.024 @	(0.044)	[243.950]	ND	(0.053)	[296.138]	0.0032 @	(0.057)	[315.577]	0.0059 @	(0.054)	[297.407]
SW7740 - Selenium (mg/kg)												
Selenium	0.39 @	(0.37)	[73.704]	0.95 @	(0.47)	[93.617]	1.3 @	(0.45)	[90.165]	1 @	(0.44)	[87.759]
Soil pH (pH units)												
pH	8.2	()	[1.000]	7.6	()	[1.000]	8.3	()	[1.000]	8.5	()	[1.000]

PARAMETER	SITE ID	LOCATION ID	SAMPLE ID	BEG. DEPTH - END DEPTH (FT.)								
	NONE	14	CAN97-14-02	4 - 6			NONE	14	CAN97-14-99 Dup of CAN97-14-02	4 - 6		
SW7060 - Arsenic (mg/kg)												
Arsenic	4.3	(0.36)	[90.165]	4.2	(0.35)	[87.759]						
SW7421 - Lead (mg/kg)												
Lead	3.5	(0.27)	[90.165]	3	(0.26)	[87.759]						
SW7471 - Mercury (mg/kg)												
Mercury	0.0032 @	(0.057)	[315.577]	0.0059 @	(0.054)	[297.407]						
SW7740 - Selenium (mg/kg)												
Selenium	1.3 @	(0.45)	[90.165]	1 @	(0.44)	[87.759]						
Soil pH (pH units)												
pH	8.3	()	[1.000]	8.5	()	[1.000]						

TABLE B2

RESULTS OF INORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID	LOCATION ID	SAMPLE ID	BEG. DEPTH - END DEPTH (FT.)										
	NONE	14	CAN97-14-03	9 - 11			NONE	14	CAN97-14-04	14 - 16			NONE	14	CAN97-14-05	19 - 21			NONE	14	CAN97-14-06	24 - 26		
Percent moisture (%)																								
Percent moisture	5.9		()	[1.000]	9.4		()	[1.000]	12		()	[1.000]	5.3		()	[1.000]
SW6010 - Metals (mg/kg)																								
Aluminum	7000		(19)	[92.593]	5000		(19)	[95.238]	7500		(19)	[94.340]	7600		(19)	[93.458]
Antimony	ND		(37)	[370.370]	ND		(38)	[380.952]	ND		(38)	[377.359]	ND		(37)	[373.832]
Arsenic	4.5 @		(28)	[92.593]	0.73 @		(29)	[95.238]	3.2 @		(28)	[94.340]	ND		(28)	[93.458]
Barium	110		(0.93)	[92.593]	1100		(0.95)	[95.238]	130		(0.94)	[94.340]	710		(0.93)	[93.458]
Beryllium	0.28 @		(0.19)	[92.593]	0.17 @		(0.19)	[95.238]	0.22 @		(0.19)	[94.340]	0.23 @		(0.19)	[93.458]
Cadmium	0.0019 @		(0.46)	[92.593]	0.024 @		(0.48)	[95.238]	ND		(0.47)	[94.340]	0.05 @		(0.47)	[93.458]
Calcium	77000		(370)	[370.370]	84000		(380)	[380.952]	88000		(380)	[377.359]	24000		(370)	[373.832]
Chromium	5.7		(0.93)	[92.593]	4.1 @		(0.95)	[95.238]	5.2		(0.94)	[94.340]	5.7		(0.93)	[93.458]
Cobalt	2.1 @		(0.93)	[92.593]	1.3 @		(0.95)	[95.238]	1.7 @		(0.94)	[94.340]	1.4 @		(0.93)	[93.458]
Copper	1.8 @		(1.9)	[92.593]	1.1 @		(1.9)	[95.238]	2 @		(1.9)	[94.340]	1.6 @		(1.9)	[93.458]
Iron	4500		(4.6)	[92.593]	2600		(4.8)	[95.238]	4100		(4.7)	[94.340]	4600		(4.7)	[93.458]
Lead	ND		(4.6)	[92.593]	ND		(4.8)	[95.238]	ND		(4.7)	[94.340]	ND		(4.7)	[93.458]
Magnesium	3100		(93)	[92.593]	9000		(95)	[95.238]	9300		(94)	[94.340]	4800		(93)	[93.458]
Manganese	50		(0.93)	[92.593]	20		(0.95)	[95.238]	35		(0.94)	[94.340]	35		(0.93)	[93.458]
Molybdenum	0.28 @		(4.6)	[92.593]	ND		(4.8)	[95.238]	ND		(4.7)	[94.340]	0.35 @		(4.7)	[93.458]
Nickel	5.4 @		(1.9)	[92.593]	6.4 @		(1.9)	[95.238]	6.4 @		(1.9)	[94.340]	4.4 @		(1.9)	[93.458]
Potassium	1400		(280)	[92.593]	760 @		(290)	[95.238]	1400		(280)	[94.340]	1600		(280)	[93.458]
Selenium	1.5 @		(28)	[92.593]	1.9 @		(29)	[95.238]	ND		(28)	[94.340]	1.1 @		(28)	[93.458]
Silver	ND		(0.93)	[92.593]	ND		(0.95)	[95.238]	0.46 @		(0.94)	[94.340]	5		(0.93)	[93.458]
Sodium	110 @		(93)	[92.593]	180 @		(95)	[95.238]	270 @		(94)	[94.340]	210 @		(93)	[93.458]
Thallium	ND		(9.3)	[92.593]	0.25 @		(9.5)	[95.238]	1.4 @		(9.4)	[94.340]	ND		(9.3)	[93.458]
Vanadium	12		(1.9)	[92.593]	18		(1.9)	[95.238]	18		(1.9)	[94.340]	10		(1.9)	[93.458]
Zinc	11		(1.9)	[92.593]	5.8 @		(1.9)	[95.238]	9.5		(1.9)	[94.340]	8.8 @		(1.9)	[93.458]
SW7060 - Arsenic (mg/kg)																								
Arsenic	2.8		(0.35)	[88.558]	2.7		(0.36)	[89.736]	3.5		(0.36)	[90.188]	1.9		(0.34)	[83.807]

TABLE B2

RESULTS OF INORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 14 CAN97-14-03 9 - 11			NONE 14 CAN97-14-04 14 - 16			NONE 14 CAN97-14-05 19 - 21			NONE 14 CAN97-14-06 24 - 26		
SW7421 - Lead (mg/kg)												
Lead	3.1	(0.27)	[88.558]	1.8	(0.27)	[89.736]	2.3	(0.27)	[90.188]	2.1	(0.25)	[83.807]
SW7471 - Mercury (mg/kg)												
Mercury	ND	(0.056)	[312.559]	ND	(0.05)	[275.938]	ND	(0.043)	[236.742]	ND	(0.05)	[277.886]
SW7740 - Selenium (mg/kg)												
Selenium	0.69 @	(0.44)	[88.558]	1.2 @	(0.45)	[89.736]	1.1 @	(0.45)	[90.188]	ND	(0.42)	[83.807]
Soil pH (pH units)												
pH	8.4	()	[1.000]	7.6	()	[1.000]	7.5	()	[1.000]	8.6	()	[1.000]

TABLE B2 RESULTS OF INORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID	LOCATION ID	SAMPLE ID	BEG. DEPTH - END DEPTH (FT.)										
	NONE		CAN97-14-07	29 - 31			NONE		CAN97-14-08	34 - 36			NONE		CAN97-14-09	39 - 41			NONE		CAN97-14-10	44 - 46		
	14						14						14						14					
Percent moisture (%)																								
Percent moisture	7.1		()	[1.000]	3.9		()	[1.000]	5		()	[1.000]	6.2		()	[1.000]
SW6010 - Metals (mg/kg)																								
Aluminum	6400		(18)	[90.909]	3700		(17)	[86.207]	4600		(17)	[86.207]	5600		(18)	[90.909]
Antimony	1.5 @		(9.1)	[90.909]	ND		(8.6)	[86.207]	ND		(8.6)	[86.207]	ND		(9.1)	[90.909]
Arsenic	ND		(27)	[90.909]	2.3 @		(26)	[86.207]	ND		(26)	[86.207]	1.1 @		(27)	[90.909]
Barium	1000		(0.91)	[90.909]	27		(0.86)	[86.207]	22		(0.86)	[86.207]	29		(0.91)	[90.909]
Beryllium	0.2 @		(0.18)	[90.909]	0.14 @		(0.17)	[86.207]	ND @		(0.17)	[86.207]	0.19 @		(0.18)	[90.909]
Cadmium	0.19 @		(0.45)	[90.909]	0.13 @		(0.43)	[86.207]	0.0032 @		(0.43)	[86.207]	ND		(0.45)	[90.909]
Calcium	7300		(91)	[90.909]	25000		(86)	[86.207]	23000		(86)	[86.207]	27000		(91)	[90.909]
Chromium	5.2		(0.91)	[90.909]	3.3 @		(0.86)	[86.207]	4.3		(0.86)	[86.207]	5.1		(0.91)	[90.909]
Cobalt	1.4 @		(0.91)	[90.909]	1.1 @		(0.86)	[86.207]	1.5 @		(0.86)	[86.207]	1.4 @		(0.91)	[90.909]
Copper	2.7 @		(1.8)	[90.909]	0.86 @		(1.7)	[86.207]	1.1 @		(1.7)	[86.207]	1.2 @		(1.8)	[90.909]
Iron	4500		(4.5)	[90.909]	3300		(4.3)	[86.207]	4000		(4.3)	[86.207]	4700		(4.5)	[90.909]
Lead	0.41 @		(4.5)	[90.909]	ND		(4.3)	[86.207]	ND		(4.3)	[86.207]	ND		(4.5)	[90.909]
Magnesium	6400		(91)	[90.909]	2300		(86)	[86.207]	3000		(86)	[86.207]	3100		(91)	[90.909]
Manganese	30		(0.91)	[90.909]	39		(0.86)	[86.207]	41		(0.86)	[86.207]	51		(0.91)	[90.909]
Molybdenum	0.027 @		(4.5)	[90.909]	0.1 @		(4.3)	[86.207]	0.28 @		(4.3)	[86.207]	0.12 @		(4.5)	[90.909]
Nickel	5.1 @		(1.8)	[90.909]	3.4 @		(1.7)	[86.207]	3.8 @		(1.7)	[86.207]	4.2 @		(1.8)	[90.909]
Potassium	1300 @		(270)	[90.909]	810 @		(260)	[86.207]	1000 @		(260)	[86.207]	1200 @		(270)	[90.909]
Selenium	0.64 @		(27)	[90.909]	2.8 @		(26)	[86.207]	3.4 @		(26)	[86.207]	4.5 @		(27)	[90.909]
Silver	2.1 @		(0.91)	[90.909]	ND		(0.86)	[86.207]	ND		(0.86)	[86.207]	0.35 @		(0.91)	[90.909]
Sodium	200 @		(91)	[90.909]	90 @		(86)	[86.207]	80 @		(86)	[86.207]	80 @		(91)	[90.909]
Thallium	4.2 @		(9.1)	[90.909]	0.53 @		(8.6)	[86.207]	0.012 @		(8.6)	[86.207]	0.35 @		(9.1)	[90.909]
Vanadium	11		(1.8)	[90.909]	7.4 @		(1.7)	[86.207]	9.7		(1.7)	[86.207]	11		(1.8)	[90.909]
Zinc	9.2		(1.8)	[90.909]	6.4 @		(1.7)	[86.207]	7.6 @		(1.7)	[86.207]	9.1		(1.8)	[90.909]
SW7060 - Arsenic (mg/kg)																								
Arsenic	1.3 @		(0.36)	[91.223]	0.89 @		(0.35)	[88.185]	1 @		(0.35)	[86.281]	1.3 @		(0.36)	[88.842]

Compiled: 8 Feb 1994 () = Reporting Limit [] = Factor : Not Detected NA = Not Applicable

TABLE B2 RESULTS OF INORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 14 CAN97-14-07 29 - 31			NONE 14 CAN97-14-08 34 - 36			NONE 14 CAN97-14-09 39 - 41			NONE 14 CAN97-14-10 44 - 46		
SW7421 - Lead (mg/kg)												
Lead	2.4	(0.27)	[91.223]	1.8	(0.26)	[88.185]	1.8	(0.26)	[86.281]	2.2	(0.27)	[88.842]
SW7471 - Mercury (mg/kg)												
Mercury	ND	(0.048)	[269.107]	ND	(0.047)	[260.146]	ND	(0.041)	[228.833]	ND	(0.053)	[296.138]
SW7740 - Selenium (mg/kg)												
Selenium	0.63 @	(0.46)	[91.223]	ND	(0.44)	[88.185]	ND	(0.43)	[86.281]	ND	(0.44)	[88.842]
SW7841 - Thallium (mg/kg)												
Thallium	ND	(0.46)	[91.223]	NA			NA			NA		
Soil pH (pH units)												
pH	8.4	()	[1.000]	8	()	[1.000]	8.3	()	[1.000]	7.5	()	[1.000]

TABLE B2

RESULTS OF INORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 14 CAN97-14-11 49 - 51			NONE 14 CAN97-14-12 54 - 56			NONE 14 CAN97-14-13 59 - 61			NONE 15 CAN97-15-06 6 - 8		
Percent moisture (%)												
Percent moisture	4.73	()	[1.000]	4.9	()	[1.000]	4.7	()	[1.000]	7.7	()	[1.000]
SW6010 - Metals (mg/kg)												
Aluminum	3200	(18)	[90.909]	3500	(17)	[86.207]	4100	(16)	[81.301]	13000	(16)	[80.645]
Antimony	ND	(9.1)	[90.909]	1.2 @	(8.6)	[86.207]	ND	(8.1)	[81.301]	ND	(81)	[806.452]
Arsenic	1.1 @	(27)	[90.909]	ND	(26)	[86.207]	ND	(24)	[81.301]	7.5 @	(24)	[80.645]
Barium	16	(0.91)	[90.909]	14	(0.86)	[86.207]	27	(0.81)	[81.301]	380	(0.81)	[80.645]
Beryllium	0.12 @	(0.18)	[90.909]	0.13 @	(0.17)	[86.207]	0.15 @	(0.16)	[81.301]	0.45 @	(0.16)	[80.645]
Cadmium	ND	(0.45)	[90.909]	ND	(0.43)	[86.207]	0.04 @	(0.41)	[81.301]	ND	(0.4)	[80.645]
Calcium	18000	(91)	[90.909]	2800	(86)	[86.207]	28000	(81)	[81.301]	120000	(810)	[806.452]
Chromium	3.2 @	(0.91)	[90.909]	3.6 @	(0.86)	[86.207]	4.8	(0.81)	[81.301]	9.4	(0.81)	[80.645]
Cobalt	0.82 @	(0.91)	[90.909]	1.3 @	(0.86)	[86.207]	1.1 @	(0.81)	[81.301]	3 @	(0.81)	[80.645]
Copper	0.81 @	(1.8)	[90.909]	1.9 @	(1.7)	[86.207]	1.5 @	(1.6)	[81.301]	3.9 @	(1.6)	[80.645]
Iron	3100	(4.5)	[90.909]	3800	(4.3)	[86.207]	3900	(4.1)	[81.301]	9100	(40)	[806.452]
Lead	ND	(4.5)	[90.909]	ND	(4.3)	[86.207]	ND	(4.1)	[81.301]	1.2 @	(4)	[80.645]
Magnesium	2400	(91)	[90.909]	2100	(86)	[86.207]	2600	(81)	[81.301]	4000 @	(810)	[806.452]
Manganese	35	(0.91)	[90.909]	43	(0.86)	[86.207]	40	(0.81)	[81.301]	80	(8.1)	[806.452]
Molybdenum	0.03 @	(4.5)	[90.909]	ND	(4.3)	[86.207]	0.11 @	(4.1)	[81.301]	0.39 @	(4)	[80.645]
Nickel	3.1 @	(1.8)	[90.909]	3.6 @	(1.7)	[86.207]	4.3 @	(1.6)	[81.301]	7.7 @	(1.6)	[80.645]
Potassium	680 @	(270)	[90.909]	740 @	(260)	[86.207]	830 @	(240)	[81.301]	2100	(240)	[80.645]
Selenium	0.71 @	(27)	[90.909]	4.3 @	(26)	[86.207]	ND	(24)	[81.301]	ND	(24)	[80.645]
Silver	ND	(0.91)	[90.909]	ND	(0.86)	[86.207]	ND	(0.81)	[81.301]	ND	(0.81)	[80.645]
Sodium	61 @	(91)	[90.909]	47 @	(86)	[86.207]	46 @	(81)	[81.301]	52 @	(81)	[80.645]
Thallium	0.39 @	(9.1)	[90.909]	ND	(8.6)	[86.207]	1.6 @	(8.1)	[81.301]	70	(8.1)	[80.645]
Vanadium	8.6 @	(1.8)	[90.909]	9.5	(1.7)	[86.207]	10	(1.6)	[81.301]	27	(1.6)	[80.645]
Zinc	5.7 @	(1.8)	[90.909]	7.1 @	(1.7)	[86.207]	7.9 @	(1.6)	[81.301]	18	(1.6)	[80.645]
SW7041 - Antimony by AA (mg/kg)												
Antimony	NA			NA			NA			0.068 @	(0.51)	[84.643]

Compiled: 8 Febr 1994

() = Reporting Limit [] = Factor : Not Detected NA = Not Applicable

TABLE B2 RESULTS OF INORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 14 CAN97-14-11 49 - 51			NONE 14 CAN97-14-12 54 - 56			NONE 14 CAN97-14-13 59 - 61			NONE 15 CAN97-15-06 6 - 8		
SW7060 - Arsenic (mg/kg)												
Arsenic	0.81 @	(0.35)	[86.268]	0.79 @	(0.35)	[87.627]	1.3 @	(0.34)	[86.010]	5	(0.33)	[81.460]
SW7421 - Lead (mg/kg)												
Lead	2.1	(0.26)	[86.721]	2.1	(0.26)	[87.627]	2	(0.26)	[86.010]	4.2	(0.49)	[162.921]
SW7471 - Mercury (mg/kg)												
Mercury	ND	(0.052)	[291.477]	ND	(0.05)	[276.717]	ND	(0.038)	[209.864]	ND	(0.049)	[270.856]
SW7740 - Selenium (mg/kg)												
Selenium	ND	(0.43)	[86.721]	ND	(0.44)	[87.627]	ND	(0.43)	[86.010]	0.09 @	(0.41)	[81.460]
SW7841 - Thallium (mg/kg)												
Thallium	NA			NA			NA			0.15 @	(0.41)	[81.460]
Soil pH (pH units)												
pH	8.1	()	[1.000]	7.9	()	[1.000]	8.2	()	[1.000]	8.5	()	[1.000]

TABLE B2

RESULTS OF INORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID	LOCATION ID	SAMPLE ID	BEG. DEPTH - END DEPTH (FT.)										
	NONE	15	CAN97-15-I	4 - 6	NONE	15	CAN97-15-S	0 - 2	NONE	16	CAN97-16-06	5 - 7	NONE	16	CAN97-16-I	4 - 6
Percent moisture (%)																
Percent moisture	8.7	()	[1.000]		2.2	()	[1.000]		7.1	()	[1.000]		4	()	[1.000]	
SW6010 - Metals (mg/kg)																
Aluminum	15000	(16)	[81.967]		13000	(15)	[73.035]		15000	(18)	[89.286]		15000	(18)	[90.909]	
Antimony	1.8 @	(8.2)	[81.967]		ND	(7.3)	[73.035]		ND @	(8.9)	[89.286]		1.8 @	(9.1)	[90.909]	
Arsenic	2.9 @	(25)	[81.967]		ND	(22)	[73.035]		11 @	(110)	[357.143]		ND @	(27)	[90.909]	
Barium	80	(0.82)	[81.967]		290	(0.73)	[73.035]		440	(0.89)	[89.286]		82	(0.91)	[90.909]	
Beryllium	0.54 @	(0.16)	[81.967]		0.4 @	(0.15)	[73.035]		0.48 @	(0.18)	[89.286]		0.57 @	(0.18)	[90.909]	
Cadmium	0.5 @	(0.41)	[81.967]		1.2 @	(0.37)	[73.035]		1.7 @	(1.8)	[357.143]		0.44 @	(0.45)	[90.909]	
Calcium	2000	(82)	[81.967]		640000	(730)	[730.000]		140000	(360)	[357.143]		2400	(91)	[90.909]	
Chromium	13	(0.82)	[81.967]		11	(0.73)	[73.035]		9.8	(0.89)	[89.286]		14	(0.91)	[90.909]	
Cobalt	4.4	(0.82)	[81.967]		2.9 @	(0.73)	[73.035]		3.1 @	(3.6)	[357.143]		4.4 @	(0.91)	[90.909]	
Copper	7 @	(1.6)	[81.967]		7.8	(1.5)	[73.035]		5.5 @	(7.1)	[357.143]		8.1 @	(1.8)	[90.909]	
Iron	12000	(4.1)	[81.967]		9200	(3.7)	[73.035]		8300	(4.5)	[89.286]		12000	(4.5)	[90.909]	
Lead	8.5 @	(4.1)	[81.967]		14 @	(3.7)	[73.035]		5.6 @	(18)	[357.143]		14 @	(4.5)	[90.909]	
Magnesium	1900	(82)	[81.967]		2500	(73)	[73.035]		3500	(89)	[89.286]		1800	(91)	[90.909]	
Manganese	220	(0.82)	[81.967]		200	(0.73)	[73.035]		92	(0.89)	[89.286]		250	(0.91)	[90.909]	
Molybdenum	0.9 @	(4.1)	[81.967]		0.35 @	(3.7)	[73.035]		0.28 @	(4.5)	[89.286]		0.14 @	(4.5)	[90.909]	
Nickel	9.8	(1.6)	[81.967]		7.7	(1.5)	[73.035]		9.5 @	(7.1)	[357.143]		10	(1.8)	[90.909]	
Potassium	2400	(250)	[81.967]		2200	(220)	[73.035]		2400	(270)	[89.286]		2600	(270)	[90.909]	
Selenium	ND	(25)	[81.967]		3.6 @	(22)	[73.035]		ND @	(27)	[89.286]		1.6 @	(27)	[90.909]	
Silver	0.00033 @	(0.82)	[81.967]		ND	(0.73)	[73.035]		ND @	(0.89)	[89.286]		ND @	(0.91)	[90.909]	
Sodium	30 @	(82)	[81.967]		55 @	(73)	[73.035]		110 @	(89)	[89.286]		32 @	(91)	[90.909]	
Thallium	3.2 @	(8.2)	[81.967]		2.7 @	(7.3)	[73.035]		4.2 @	(36)	[357.143]		0.71 @	(9.1)	[90.909]	
Vanadium	24	(1.6)	[81.967]		22	(1.5)	[73.035]		24	(1.8)	[89.286]		24	(1.8)	[90.909]	
Zinc	27	(1.6)	[81.967]		36	(1.5)	[73.035]		22 @	(7.1)	[357.143]		30	(1.8)	[90.909]	
SW7060 - Arsenic (mg/kg)																
Arsenic	3.1	(0.33)	[82.977]		5.6	(0.59)	[147.091]		5.5	(0.72)	[180.912]		5.1	(0.34)	[86.088]	

Compiled: 8 Febr 1994 () = Reporting Limit [] = Factor = Not Detected NA = Not Applicable

TABLE B2

RESULTS OF INORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 15 CAN97-15-I 4 - 6			NONE 15 CAN97-15-S 0 - 2			NONE 16 CAN97-16-06 5 - 7			NONE 16 CAN97-16-I 4 - 6		
SW7421 - Lead (mg/kg)												
Lead	6	(0.5)	[165.953]	25	(2.2)	[735.457]	4.7	(0.27)	[90.456]	9.1	(0.52)	[172.176]
SW7471 - Mercury (mg/kg)												
Mercury	ND	(0.049)	[273.823]	0.024 @	(0.044)	[243.451]	ND @	(0.048)	[269.107]	ND @	(0.045)	[248.015]
SW7740 - Selenium (mg/kg)												
Selenium	ND	(0.41)	[82.977]	0.63 @	(0.37)	[73.546]	ND @	(0.45)	[90.495]	ND @	(0.43)	[86.052]
Soil pH (pH units)												
pH	7.6	()	[1.000]	7.2	()	[1.000]	8.2	()	[1.000]	7.9	()	[1.000]

TABLE B2 RESULTS OF INORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 16 CAN97-16-99 Dup of CAN97-16-I 0 - 0			NONE 16 CAN97-16-S 0 - 2			NONE 17 CAN97-17-06 6 - 8			NONE 17 CAN97-17-99 Dup of CAN97-17-06 6 - 8		
Percent moisture (%)												
Percent moisture	3.8	()	[1.000]	1.4	()	[1.000]	8.7	()	[1.000]	9.3	()	[1.000]
SW5010 - Metals (mg/kg)												
Aluminum	14000	(18)	[89.286]	15000	(15)	[73.493]	13000	(16)	[81.967]	13000	(16)	[81.967]
Antimony	4 @	(8.9)	[89.286]	ND	(7.3)	[73.493]	14 @	(82)	[820.000]	ND	(82)	[820.000]
Arsenic	ND @	(27)	[89.286]	ND	(22)	[73.493]	10 @	(25)	[81.967]	9.7 @	(25)	[81.967]
Barium	79	(0.89)	[89.286]	80	(0.73)	[73.493]	200	(0.82)	[81.967]	250	(0.82)	[81.967]
Beryllium	0.54 @	(0.18)	[89.286]	0.53 @	(0.15)	[73.493]	0.46 @	(0.16)	[81.957]	0.45 @	(0.16)	[81.967]
Cadmium	ND @	(0.45)	[89.286]	0.26 @	(0.37)	[73.493]	0.033 @	(0.41)	[81.967]	0.1 @	(0.41)	[81.967]
Calcium	2300	(89)	[89.286]	2400	(73)	[73.493]	150000	(820)	[820.000]	150000	(820)	[820.000]
Chromium	13	(0.89)	[89.286]	14	(0.73)	[73.493]	9.2	(0.82)	[81.967]	8.8	(0.82)	[81.967]
Cobalt	4.5	(0.89)	[89.286]	4.1	(0.73)	[73.493]	2.9 @	(0.82)	[81.967]	2.4 @	(0.82)	[81.967]
Copper	7.9 @	(1.8)	[89.286]	7.6	(1.5)	[73.493]	4.2 @	(1.6)	[81.967]	3.7 @	(1.6)	[81.967]
Iron	11000	(4.5)	[89.286]	12000	(3.7)	[73.493]	9100	(41)	[820.000]	8700	(41)	[820.000]
Lead	14 @	(4.5)	[89.286]	16 @	(3.7)	[73.493]	ND	(4.1)	[81.967]	ND	(4.1)	[81.967]
Magnesium	1700	(89)	[89.286]	1800	(73)	[73.493]	4000 @	(820)	[820.000]	4000 @	(820)	[820.000]
Manganese	240	(0.89)	[89.286]	230	(0.73)	[73.493]	95	(8.2)	[820.000]	90	(8.2)	[820.000]
Molybdenum	0.78 @	(4.5)	[89.286]	0.38 @	(3.7)	[73.493]	0.65 @	(4.1)	[81.967]	0.57 @	(4.1)	[81.967]
Nickel	8.9 @	(1.8)	[89.286]	10	(1.5)	[73.493]	7.5 @	(1.6)	[81.967]	7.2 @	(1.6)	[81.967]
Potassium	2500	(270)	[89.286]	2900	(220)	[73.493]	2100	(250)	[81.967]	2000	(250)	[81.967]
Selenium	ND @	(27)	[89.286]	0.67 @	(22)	[73.493]	ND	(25)	[81.967]	0.066 @	(25)	[81.967]
Silver	ND @	(0.89)	[89.286]	ND	(0.73)	[73.493]	ND	(0.82)	[81.967]	ND	(0.82)	[81.967]
Sodium	31 @	(89)	[89.286]	22 @	(73)	[73.493]	67 @	(82)	[81.967]	66 @	(82)	[81.967]
Thallium	1.7 @	(8.9)	[89.286]	0.92 @	(7.3)	[73.493]	66	(8.2)	[81.967]	71	(8.2)	[81.967]
Vanadium	22	(1.8)	[89.286]	25	(1.5)	[73.493]	21	(1.6)	[81.967]	21	(1.6)	[81.967]
Zinc	29	(1.8)	[89.286]	33	(1.5)	[73.493]	18	(1.6)	[81.967]	17	(1.6)	[81.967]
SW7041 - Antimony by AA (mg/kg)												
Antimony	NA			NA			NA			0.093 @	(0.47)	[77.643]

Compiled: 8 Febr 1994 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B2

RESULTS OF INORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 16 CAN97-16-99 Dup of CAN97-16-I 0 - 0			NONE 16 CAN97-16-S 0 - 2			NONE 17 CAN97-17-06 6 - 8			NONE 17 CAN97-17-99 Dup of CAN97-17-06 6 - 8		
SW7060 - Arsenic (mg/kg)												
Arsenic	5.1	(0.34)	[85.205]	3.9	(0.31)	[76.818]	3.8	(0.33)	[82.977]	4.6	(0.33)	[82.897]
SW7421 - Lead (mg/kg)												
Lead	8.8	(0.51)	[170.410]	11	(0.92)	[307.271]	3.6	(0.25)	[82.977]	3.4	(0.25)	[82.897]
SW7471 - Mercury (mg/kg)												
Mercury	ND @	(0.047)	[259.875]	0.027 @	(0.038)	[211.291]	ND	(0.049)	[273.823]	ND	(0.05)	[275.634]
SW7740 - Selenium (mg/kg)												
Selenium	ND @	(0.43)	[85.170]	0.45 @	(0.38)	[76.818]	1.1 @	(0.41)	[82.977]	1.1 @	(0.41)	[82.897]
SW7841 - Thallium (mg/kg)												
Thallium	NA			NA			0.13 @	(0.41)	[82.977]	0.19 @	(0.41)	[82.897]
Soil pH (pH units)												
pH	7.8	()	[1.000]	7.7	()	[1.000]	8.4	()	[1.000]	8.5	()	[1.000]

TABLE B2 RESULTS OF INORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 17 CAN97-17-I 4 - 6			NONE 17 CAN97-17-S 0 - 2			NONE 18 CAN97-18-06 5 - 7			NONE 18 CAN97-18-I 4 - 6		
Percent moisture (%)												
Percent moisture	9.3	()	[1.000]	0.19	()	[1.000]	7.8	()	[1.000]	9.6	()	[1.000]
SW6010 - Metals (mg/kg)												
Aluminum	15000	(17)	[82.645]	2900	(15)	[75.902]	14000	(160)	[820.000]	21000	(17)	[84.034]
Antimony	4.5 @	(8.3)	[82.645]	ND	(7.6)	[75.902]	12 @	(82)	[820.000]	3.1 @	(8.4)	[84.034]
Arsenic	9.1 @	(25)	[82.645]	ND	(23)	[75.902]	11 @	(24)	[80.000]	6.2 @	(25)	[84.034]
Barium	80	(0.83)	[82.645]	460	(0.76)	[75.902]	320	(0.8)	[80.000]	90	(0.84)	[84.034]
Beryllium	0.58 @	(0.17)	[82.645]	0.12 @	(0.15)	[75.902]	0.5 @	(0.16)	[80.000]	0.76 @	(0.17)	[84.034]
Cadmium	0.27 @	(0.41)	[82.645]	0.047 @	(0.38)	[75.902]	ND	(0.4)	[80.000]	0.4 @	(0.42)	[84.034]
Calcium	4000	(83)	[82.645]	75000	(760)	[759.000]	130000	(820)	[820.000]	2800	(84)	[84.034]
Chromium	14	(0.83)	[82.645]	2.8 @	(0.76)	[75.902]	9.4	(0.8)	[80.000]	17	(0.84)	[84.034]
Cobalt	4.6	(0.83)	[82.645]	1.2 @	(0.76)	[75.902]	3.1 @	(0.8)	[80.000]	5	(0.84)	[84.034]
Copper	7.5 @	(1.7)	[82.645]	2 @	(1.5)	[75.902]	5.6 @	(1.6)	[80.000]	9.6	(1.7)	[84.034]
Iron	12000	(4.1)	[82.645]	4700	(3.8)	[75.902]	10000	(41)	[820.000]	15000	(4.2)	[84.034]
Lead	9.1 @	(4.1)	[82.645]	2 @	(3.8)	[75.902]	ND	(4)	[80.000]	9.2 @	(4.2)	[84.034]
Magnesium	1800	(83)	[82.645]	1200	(76)	[75.902]	4700	(820)	[820.000]	2400	(84)	[84.034]
Manganese	240	(0.83)	[82.645]	460	(0.76)	[75.902]	110	(8.2)	[820.000]	230	(0.84)	[84.034]
Molybdenum	0.88 @	(4.1)	[82.645]	0.0023 @	(3.8)	[75.902]	0.82 @	(4)	[80.000]	0.59 @	(4.2)	[84.034]
Nickel	9.4	(1.7)	[82.645]	5.6 @	(1.5)	[75.902]	7 @	(1.6)	[80.000]	13	(1.7)	[84.034]
Potassium	2600	(250)	[82.645]	510 @	(230)	[75.902]	2100	(240)	[80.000]	3100	(250)	[84.034]
Selenium	ND	(25)	[82.645]	3.4 @	(23)	[75.902]	ND	(24)	[80.000]	1.6 @	(25)	[84.034]
Silver	0.098 @	(0.83)	[82.645]	0.13 @	(0.76)	[75.902]	ND	(0.8)	[80.000]	0.16 @	(0.84)	[84.034]
Sodium	33 @	(83)	[82.645]	41 @	(76)	[75.902]	110 @	(80)	[80.000]	71 @	(84)	[84.034]
Thallium	4.5 @	(8.3)	[82.645]	ND	(7.6)	[75.902]	72	(8)	[80.000]	7.2 @	(8.4)	[84.034]
Vanadium	25	(1.7)	[82.645]	15	(1.5)	[75.902]	26	(1.6)	[80.000]	32	(1.7)	[84.034]
Zinc	28	(1.7)	[82.645]	11	(1.5)	[75.902]	19	(1.6)	[80.000]	35	(1.7)	[84.034]
SW7060 - Arsenic (mg/kg)												
Arsenic	3.2	(0.33)	[82.279]	9	(0.62)	[155.334]	4.2	(0.33)	[81.549]	4.2	(0.33)	[83.173]

TABLE B2 RESULTS OF INORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 17 CAN97-17-I 4 - 6			NONE 17 CAN97-17-S 0 - 2			NONE 18 CAN97-18-OG 5 - 7			NONE 18 CAN97-18-I 4 - 6		
SW7421 - Lead (mg/kg)												
Lead	7.7	(0.49)	[164.558]	120	(9.3)	[106.677]	4.3	(0.49)	[163.098]	7.2	(0.5)	[166.345]
SW7471 - Mercury (mg/kg)												
Mercury	ND	(0.05)	[275.634]	0.098 @	(0.047)	[263.659]	ND	(0.049)	[271.150]	ND	(0.05)	[276.549]
SW7740 - Selenium (mg/kg)												
Selenium	0.16 @	(0.41)	[82.279]	0.4 @	(0.39)	[77.667]	ND	(0.41)	[81.549]	ND	(0.42)	[83.173]
SW7841 - Thallium (mg/kg)												
Thallium	NA			NA			0.13 @	(0.41)	[81.549]	0.19 @	(0.42)	[83.173]
Soil pH (pH units)												
pH	8.5	()	[1.000]	7.1	()	[1.000]	8.3	()	[1.000]	7.3	()	[1.000]

TABLE B2 RESULTS OF INORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 2S.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 18 CAN97-18-S 0 - 2			NONE 19 CAN97-19-06 5 - 7			NONE 19 CAN97-19-I 4 - 6			NONE 19 CAN97-19-S 0 - 2		
Percent moisture (%)												
Percent moisture	0.59	()	[1.000]	4.4	()	[1.000]	4.7	()	[1.000]	0.39	()	[1.000]
SW6010 - Metals (mg/kg)												
Aluminum	10000	(15)	[72.894]	16000	(16)	[78.125]	12000	(15)	[76.923]	14000	(14)	[71.708]
Antimony	ND	(7.3)	[72.894]	2 @	(7.8)	[78.125]	0.017 @	(7.7)	[76.923]	ND	(7.2)	[71.708]
Arsenic	ND	(22)	[72.894]	9 @	(23)	[78.125]	6.8 @	(23)	[76.923]	1.6 @	(22)	[71.708]
Barium	81	(0.73)	[72.894]	99	(0.78)	[78.125]	83	(0.77)	[76.923]	100	(0.72)	[71.708]
Beryllium	0.46 @	(0.15)	[72.894]	0.55 @	(0.16)	[78.125]	0.45 @	(0.15)	[76.923]	0.45 @	(0.14)	[71.708]
Cadmium	0.25 @	(0.36)	[72.894]	0.17 @	(0.39)	[78.125]	0.049 @	(0.38)	[76.923]	0.31 @	(0.36)	[71.708]
Calcium	8700	(73)	[72.894]	23000	(78)	[78.125]	25000	(77)	[76.923]	30000	(72)	[71.708]
Chromium	9.7	(0.73)	[72.894]	13	(0.78)	[78.125]	10	(0.77)	[76.923]	12	(0.72)	[71.708]
Cobalt	3.7	(0.73)	[72.894]	3.7 @	(0.78)	[78.125]	3.6 @	(0.77)	[76.923]	2.9 @	(0.72)	[71.708]
Copper	7 @	(1.5)	[72.894]	6.7 @	(1.6)	[78.125]	6.7 @	(1.5)	[76.923]	6.4 @	(1.4)	[71.708]
Iron	9300	(3.6)	[72.894]	11000	(3.9)	[78.125]	9100	(3.8)	[76.923]	9900	(3.6)	[71.708]
Lead	12 @	(3.6)	[72.894]	6.7 @	(3.9)	[78.125]	7.1 @	(3.8)	[76.923]	13 @	(3.6)	[71.708]
Magnesium	1600	(73)	[72.894]	2500	(78)	[78.125]	1800	(77)	[76.923]	1900	(72)	[71.708]
Manganese	210	(0.73)	[72.894]	150	(0.78)	[78.125]	150	(0.77)	[76.923]	200	(0.72)	[71.708]
Molybdenum	0.34 @	(3.6)	[72.894]	0.73 @	(3.9)	[78.125]	0.46 @	(3.8)	[76.923]	0.21 @	(3.6)	[71.708]
Nickel	8.5	(1.5)	[72.894]	8.9	(1.6)	[78.125]	6.7 @	(1.5)	[76.923]	8.5	(1.4)	[71.708]
Potassium	2300	(220)	[72.894]	2700	(230)	[78.125]	2100	(230)	[76.923]	2400	(220)	[71.708]
Selenium	4.9 @	(22)	[72.894]	ND	(23)	[78.125]	ND	(23)	[76.923]	2.4 @	(22)	[71.708]
Silver	ND	(0.73)	[72.894]	ND	(0.78)	[78.125]	ND	(0.77)	[76.923]	ND	(0.72)	[71.708]
Sodium	19 @	(73)	[72.894]	46 @	(78)	[78.125]	43 @	(77)	[76.923]	41 @	(72)	[71.708]
Thallium	ND	(7.3)	[72.894]	8.3 @	(7.8)	[78.125]	9.7 @	(7.7)	[76.923]	1.7 @	(7.2)	[71.708]
Vanadium	19	(1.5)	[72.894]	24	(1.6)	[78.125]	19	(1.5)	[76.923]	23	(1.4)	[71.708]
Zinc	26	(1.5)	[72.894]	28	(1.6)	[78.125]	33	(1.5)	[76.923]	130	(1.4)	[71.708]
SW7060 - Arsenic (mg/kg)												
Arsenic	6.6	(0.59)	[146.852]	5	(0.31)	[77.483]	4.1	(0.3)	[76.038]	4.5	(0.29)	[71.708]

Compiled: 8 F ry 1994 () = Reporting Limit [] = Factor = Not Detected NA = Not Applicable

TABLE B2

RESULTS OF INORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 18 CAN97-18-S 0 - 2			NONE 19 CAN97-19-06 5 - 7			NONE 19 CAN97-19-I 4 - 6			NONE 19 CAN97-19-S 0 - 2		
SW7421 - Lead (mg/kg)												
Lead	14	(0.88)	[293.704]	6.5	(0.46)	[154.967]	8.9	(0.46)	[152.075]	16	(0.86)	[286.833]
SW7471 - Mercury (mg/kg)												
Mercury	0.032 @	(0.048)	[264.720]	ND	(0.047)	[261.506]	ND	(0.047)	[262.329]	0.038 @	(0.043)	[239.027]
SW7740 - Selenium (mg/kg)												
Selenium	0.25 @	(0.37)	[73.426]	ND	(0.39)	[77.483]	ND	(0.38)	[76.038]	0.35 @	(0.36)	[71.708]
SW7841 - Thallium (mg/kg)												
Thallium	NA			0.15 @	(0.39)	[77.483]	0.084 @	(0.38)	[76.038]	NA		
Soil pH (pH units)												
pH	7.9	()	[1.000]	8.2	()	[1.000]	8.3	()	[1.000]	8	()	[1.000]

Compiled: 8 February 1994

() = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B2

RESULTS OF INORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 19 CAN97-19-99 Dup of CAN97-19-S 0 - 2			NONE 20 CAN97-20-06 7 - 9			NONE 20 CAN97-20-I 4 - 6			NONE 20 CAN97-20-S 0 - 2		
Percent moisture (%)												
Percent moisture	0.59	()	[1.000]	6.6	()	[1.000]	8.6	()	[1.000]	2	()	[1.000]
SW6010 - Metals (mg/kg)												
Aluminum	4100	(15)	[76.207]	15000	(18)	[90.909]	18000	(18)	[87.719]	12000	(15)	[76.722]
Antimony	ND	(7.6)	[76.207]	ND @	(9.1)	[90.909]	ND @	(8.8)	[87.719]	ND	(7.7)	[76.722]
Arsenic	5.2 @	(23)	[76.207]	ND @	(27)	[90.909]	ND @	(26)	[87.719]	ND	(23)	[76.722]
Barium	680	(0.76)	[76.207]	180	(0.91)	[90.909]	99	(0.88)	[87.719]	130	(0.77)	[76.722]
Beryllium	0.19 @	(0.15)	[76.207]	0.58 @	(0.18)	[90.909]	0.63 @	(0.18)	[87.719]	0.42 @	(0.15)	[76.722]
Cadmium	0.13 @	(0.38)	[76.207]	0.34 @	(0.45)	[90.909]	0.31 @	(0.44)	[87.719]	0.31 @	(0.38)	[76.722]
Calcium	26000	(760)	[762.000]	26000	(91)	[90.909]	11000	(88)	[87.719]	25000	(77)	[76.722]
Chromium	4.8	(0.76)	[76.207]	12	(0.91)	[90.909]	15	(0.88)	[87.719]	11	(0.77)	[76.722]
Cobalt	2.3 @	(0.76)	[76.207]	4 @	(0.91)	[90.909]	4.3 @	(0.88)	[87.719]	3.3 @	(0.77)	[76.722]
Copper	3.8 @	(1.5)	[76.207]	6.4 @	(1.8)	[90.909]	7.8 @	(1.8)	[87.719]	10	(1.5)	[76.722]
Iron	6600	(3.8)	[76.207]	11000	(4.5)	[90.909]	13000	(4.4)	[87.719]	9900	(3.8)	[76.722]
Lead	23	(3.8)	[76.207]	8.6 @	(4.5)	[90.909]	14 @	(4.4)	[87.719]	16 @	(3.8)	[76.722]
Magnesium	1700	(76)	[76.207]	2600	(91)	[90.909]	2100	(88)	[87.719]	1700	(77)	[76.722]
Manganese	650	(0.76)	[76.207]	130	(0.91)	[90.909]	170	(0.88)	[87.719]	300	(0.77)	[76.722]
Molybdenum	0.17 @	(3.8)	[76.207]	0.34 @	(4.5)	[90.909]	1.1 @	(4.4)	[87.719]	0.42 @	(3.8)	[76.722]
Nickel	6.7 @	(1.5)	[76.207]	10	(1.8)	[90.909]	11	(1.8)	[87.719]	8.2	(1.5)	[76.722]
Potassium	780 @	(230)	[76.207]	2400	(270)	[90.909]	2600	(260)	[87.719]	2300	(230)	[76.722]
Selenium	5.8 @	(23)	[76.207]	ND @	(27)	[90.909]	ND @	(26)	[87.719]	6.3 @	(23)	[76.722]
Silver	ND	(0.76)	[76.207]	ND @	(0.91)	[90.909]	ND @	(0.88)	[87.719]	ND	(0.77)	[76.722]
Sodium	47 @	(76)	[76.207]	88 @	(91)	[90.909]	64 @	(88)	[87.719]	34 @	(77)	[76.722]
Thallium	0.31 @	(7.6)	[76.207]	2.9 @	(9.1)	[90.909]	2.3 @	(8.8)	[87.719]	ND	(7.7)	[76.722]
Vanadium	22	(1.5)	[76.207]	21	(1.8)	[90.909]	27	(1.8)	[87.719]	20	(1.5)	[76.722]
Zinc	16	(1.5)	[76.207]	24	(1.8)	[90.909]	32	(1.8)	[87.719]	63	(1.5)	[76.722]
SW7060 - Arsenic (mg/kg)												
Arsenic	5	(0.61)	[153.578]	5.2	(0.36)	[89.972]	5.6	(0.36)	[88.951]	4.5	(0.31)	[77.878]

Compiled: 8 F[illegible]ry 1994 () = Reporting Limit [] = Facto[illegible] = Not Detected NA = Not Applicable

TABLE B2

RESULTS OF INORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 19 CAN97-19-99 Dup of CAN97-19-S 0 - 2			NONE 20 CAN97-20-06 7 - 9			NONE 20 CAN97-20-I 4 - 6			NONE 20 CAN97-20-S 0 - 2		
SW7421 - Lead (mg/kg)												
Lead	9	(0.46)	[153.578]	5.6	(0.27)	[89.972]	8	(0.53)	[177.901]	23	(2.3)	[778.779]
SW7471 - Mercury (mg/kg)												
Mercury	0.04 @	(0.048)	[264.720]	ND @	(0.046)	[254.920]	ND @	(0.047)	[260.498]	0.026 @	(0.046)	[255.102]
SW7740 - Selenium (mg/kg)												
Selenium	0.48 @	(0.38)	[76.789]	ND @	(0.45)	[89.943]	ND @	(0.44)	[88.912]	0.29 @	(0.39)	[77.878]
Soil pH (pH units)												
pH	7.2	()	[1.000]	8.4	()	[1.000]	8.4	()	[1.000]	7.9	()	[1.000]

TABLE B2 RESULTS OF INORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 21 CAN97-21-06 5 - 7			NONE 21 CAN97-21-99 Dup of CAN97-21-06 5 - 7			NONE 21 CAN97-21-I 4 - 6			NONE 21 CAN97-21-S 0 - 2		
Percent moisture (%)												
Percent moisture	4.4	()	[1.000]	5	()	[1.000]	4.8	()	[1.000]	0.19	()	[1.000]
SW6010 - Metals (mg/kg)												
Aluminum	17000	(16)	[77.519]	10000	(64)	[320.000]	12000	(16)	[79.365]	11000	(15)	[74.215]
Antimony	6.5 @	(7.8)	[77.519]	ND	(32)	[320.000]	ND	(79)	[793.651]	ND	(7.4)	[74.215]
Arsenic	4.6 @	(23)	[77.519]	4.2 @	(24)	[80.000]	5.3 @	(24)	[79.365]	3.1 @	(22)	[74.215]
Barium	75	(0.78)	[77.519]	430	(3.2)	[320.000]	170	(0.79)	[79.365]	150	(0.74)	[74.215]
Beryllium	0.62 @	(0.16)	[77.519]	0.35 @	(0.16)	[80.000]	0.39 @	(0.16)	[79.365]	0.33 @	(0.15)	[74.215]
Cadmium	0.29 @	(0.39)	[77.519]	0.0084 @	(0.4)	[80.000]	ND	(0.4)	[79.365]	0.13 @	(0.37)	[74.215]
Calcium	2900	(78)	[77.519]	160000	(320)	[320.000]	150000	(790)	[793.651]	170000	(740)	[742.000]
Chromium	14	(0.78)	[77.519]	7	(0.8)	[80.000]	8.6	(0.79)	[79.365]	7.3	(0.74)	[74.215]
Cobalt	4.4	(0.78)	[77.519]	2.3 @	(0.8)	[80.000]	2.5 @	(0.79)	[79.365]	2 @	(0.74)	[74.215]
Copper	6.6 @	(1.6)	[77.519]	3.5 @	(1.6)	[80.000]	4.4 @	(1.6)	[79.365]	3.9 @	(1.5)	[74.215]
Iron	12000	(3.9)	[77.519]	7000	(16)	[320.000]	8000	(40)	[793.651]	6200	(3.7)	[74.215]
Lead	7.3 @	(3.9)	[77.519]	ND	(4)	[80.000]	ND	(4)	[79.365]	ND	(3.7)	[74.215]
Magnesium	2300	(78)	[77.519]	2900	(320)	[320.000]	3100 @	(790)	[793.651]	2600	(74)	[74.215]
Manganese	140	(0.78)	[77.519]	110	(3.2)	[320.000]	110	(7.9)	[793.651]	89	(0.74)	[74.215]
Molybdenum	0.8 @	(3.9)	[77.519]	0.15 @	(4)	[80.000]	0.25 @	(4)	[79.365]	ND	(3.7)	[74.215]
Nickel	11	(1.6)	[77.519]	6 @	(1.6)	[80.000]	6.4 @	(1.6)	[79.365]	6.1 @	(1.5)	[74.215]
Potassium	2500	(230)	[77.519]	1600	(240)	[80.000]	2000	(240)	[79.365]	2200	(220)	[74.215]
Selenium	ND	(23)	[77.519]	1.7 @	(24)	[80.000]	3.2 @	(24)	[79.365]	1.4 @	(22)	[74.215]
Silver	0.15 @	(0.78)	[77.519]	ND	(0.8)	[80.000]	ND	(0.79)	[79.365]	ND	(0.74)	[74.215]
Sodium	39 @	(78)	[77.519]	73 @	(80)	[80.000]	84 @	(79)	[79.365]	43 @	(74)	[74.215]
Thallium	3.3 @	(7.8)	[77.519]	67	(8)	[80.000]	65	(7.9)	[79.365]	ND	(7.4)	[74.215]
Vanadium	26	(1.6)	[77.519]	15	(1.6)	[80.000]	18	(1.6)	[79.365]	15	(1.5)	[74.215]
Zinc	27	(1.6)	[77.519]	14	(1.6)	[80.000]	16	(1.6)	[79.365]	17	(1.5)	[74.215]
SW7041 - Antimony by AA (mg/kg)												
Antimony	NA			NA			0.016 @	(0.49)	[82.064]	NA		

Compiled: 8 (ary 1994 () = Reporting Limit [] = Factor ' = Not Detected NA = Not Applicable

TABLE B2 RESULTS OF INORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 21 CAN97-21-06 5 - 7			NONE 21 CAN97-21-99 Dup of CAN97-21-06 5 - 7			NONE 21 CAN97-21-I 4 - 6			NONE 21 CAN97-21-S 0 - 2		
SW7060 - Arsenic (mg/kg)												
Arsenic	4.1	(0.31)	[76.914]	2.7	(0.32)	[80.017]	3.7	(0.32)	[79.577]	4	(0.3)	[75.331]
SW7421 - Lead (mg/kg)												
Lead	4.5	(0.23)	[76.914]	3.1	(0.24)	[80.017]	3.4	(0.48)	[159.155]	4.2	(0.45)	[150.662]
SW7471 - Mercury (mg/kg)												
Mercury	ND	(0.047)	[261.506]	ND	(0.047)	[262.055]	ND	(0.047)	[262.605]	0.023 @	(0.045)	[250.476]
SW7740 - Selenium (mg/kg)												
Selenium	ND	(0.38)	[76.914]	0.85 @	(0.4)	[80.017]	0.47 @	(0.4)	[79.577]	1.1 @	(0.38)	[75.331]
SW7841 - Thallium (mg/kg)												
Thallium	NA			0.04 @	(0.4)	[80.017]	0.12 @	(0.4)	[79.577]	NA		
Soil pH (pH units)												
pH	7.6	()	[1.000]	8.5	()	[1.000]	8.5	()	[1.000]	7.9	()	[1.000]

TABLE B2 RESULTS OF INORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 2A CAN97-2A-06 8 - 10			NONE 2A CAN97-2A-I 4 - 6			NONE 2A CAN97-2A-S 0.5 - 1			NONE 2B CAN97-2B-06 8 - 10		
Percent moisture (%)												
Percent moisture	7.5	()	[1.000]	9.1	()	[1.000]	7.4	()	[1.000]	8.5	()	[1.000]
SW6010 - Metals (mg/kg)												
Aluminum	13000	(15)	[72.993]	13000	(14)	[70.922]	13000	(14)	[68.027]	10000	(14)	[71.942]
Antimony	ND	(29)	[291.971]	ND	(28)	[283.688]	ND	(6.8)	[68.027]	ND	(29)	[287.770]
Arsenic	4.6 @	(22)	[72.993]	4.6 @	(21)	[70.922]	0.028 @	(20)	[68.027]	0.36 @	(22)	[71.942]
Barium	160	(0.73)	[72.993]	210	(0.71)	[70.922]	180	(0.68)	[68.027]	90	(0.72)	[71.942]
Beryllium	0.44 @	(0.15)	[72.993]	0.41 @	(0.14)	[70.922]	0.4 @	(0.14)	[68.027]	0.35 @	(0.14)	[71.942]
Cadmium	0.087 @	(0.36)	[72.993]	ND	(0.35)	[70.922]	ND	(0.34)	[68.027]	ND	(0.36)	[71.942]
Calcium	110000	(290)	[291.971]	99000	(280)	[283.688]	22000	(68)	[68.027]	120000	(290)	[287.770]
Chromium	10	(0.73)	[72.993]	9.8	(0.71)	[70.922]	11	(0.68)	[68.027]	7.5	(0.72)	[71.942]
Cobalt	3.3 @	(0.73)	[72.993]	3 @	(0.71)	[70.922]	3 @	(0.68)	[68.027]	1.9 @	(0.72)	[71.942]
Copper	4.1 @	(1.5)	[72.993]	4.8 @	(1.4)	[70.922]	5.9 @	(1.4)	[68.027]	2.5 @	(1.4)	[71.942]
Iron	7900	(3.6)	[72.993]	8100	(3.5)	[70.922]	8900	(3.4)	[68.027]	5600	(3.6)	[71.942]
Lead	3.7 @	(3.6)	[72.993]	2.5 @	(3.5)	[70.922]	9.4 @	(3.4)	[68.027]	3.1 @	(3.6)	[71.942]
Magnesium	3700	(73)	[72.993]	2400	(71)	[70.922]	1800	(68)	[68.027]	2800	(72)	[71.942]
Manganese	120	(0.73)	[72.993]	110	(0.71)	[70.922]	170	(0.68)	[68.027]	54	(0.72)	[71.942]
Molybdenum	0.62 @	(3.6)	[72.993]	0.4 @	(3.5)	[70.922]	0.56 @	(3.4)	[68.027]	0.54 @	(3.6)	[71.942]
Nickel	7.1 @	(1.5)	[72.993]	6.2 @	(1.4)	[70.922]	7.2	(1.4)	[68.027]	5.7 @	(1.4)	[71.942]
Potassium	2400	(220)	[72.993]	2000	(210)	[70.922]	2200	(200)	[68.027]	1900	(220)	[71.942]
Selenium	1.5 @	(22)	[72.993]	ND	(21)	[70.922]	2.7 @	(20)	[68.027]	3.7 @	(22)	[71.942]
Silver	ND	(0.73)	[72.993]	ND	(0.71)	[70.922]	ND	(0.68)	[68.027]	ND	(0.72)	[71.942]
Sodium	66 @	(73)	[72.993]	51 @	(71)	[70.922]	40 @	(68)	[68.027]	61 @	(72)	[71.942]
Thallium	3.2 @	(7.3)	[72.993]	0.58 @	(7.1)	[70.922]	2.9 @	(6.8)	[68.027]	2.8 @	(7.2)	[71.942]
Vanadium	23	(1.5)	[72.993]	19	(1.4)	[70.922]	22	(1.4)	[68.027]	15	(1.4)	[71.942]
Zinc	20	(1.5)	[72.993]	21	(1.4)	[70.922]	23	(1.4)	[68.027]	14	(1.4)	[71.942]
SW7060 - Arsenic (mg/kg)												
Arsenic	2.4	(0.34)	[85.800]	2	(0.31)	[77.473]	4.5	(0.3)	[74.477]	ND	(0.3)	[75.372]

Compiled: 8 F ry 1994 () = Reporting Limit [] = Factor = Not Detected NA = Not Applicable

TABLE B2 RESULTS OF INORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 2A CAN97-2A-06 8 - 10			NONE 2A CAN97-2A-I 4 - 6			NONE 2A CAN97-2A-S 0.5 - 1			NONE 2B CAN97-2B-06 8 - 10		
SW7421 - Lead (mg/kg)												
Lead	5.9	(0.51)	[171.464]	6.3	(0.46)	[154.945]	7.8	(0.45)	[148.954]	4.1	(0.45)	[150.744]
SW7471 - Mercury (mg/kg)												
Mercury	ND	(0.051)	[284.495]	0.029 @	(0.052)	[289.503]	0.022 @	(0.04)	[224.982]	0.023 @	(0.052)	[287.604]
SW7740 - Selenium (mg/kg)												
Selenium	1.9 @	(0.43)	[85.800]	1.7 @	(0.39)	[77.473]	1.3 @	(0.37)	[74.477]	1.7 @	(0.38)	[75.372]
Soil pH (pH units)												
pH	8.5	()	[1.000]	8.4	()	[1.000]	8.5	()	[1.000]	8.5	()	[1.000]

TABLE B2

RESULTS OF INORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 2B CAN97-2B-1 4 - 6			NONE 2B CAN97-2B-99 Dup of CAN97-2B-1 4 - 6			NONE 2B CAN97-2B-S 0.5 - 1			NONE 3A CAN97-3A-06 8 - 10		
Percent moisture (%)												
Percent moisture	6.9	()	[1.000]	6.3	()	[1.000]	5.7	()	[1.000]	9.8	()	[1.000]
SW6010 - Metals (mg/kg)												
Aluminum	13000	(15)	[72.993]	12000	(14)	[69.444]	12000	(15)	[74.627]	14000	(68)	[339.000]
Antimony	ND	(29)	[291.971]	ND	(28)	[277.778]	ND	(30)	[298.507]	ND	(34)	[339.000]
Arsenic	7.7 @	(22)	[72.993]	8.9 @	(21)	[69.444]	3.4 @	(22)	[74.627]	8.6 @	(25)	[84.746]
Barium	91	(0.73)	[72.993]	92	(0.69)	[69.444]	140	(0.75)	[74.627]	41	(3.4)	[339.000]
Beryllium	0.41 @	(0.15)	[72.993]	0.4 @	(0.14)	[69.444]	0.37 @	(0.15)	[74.627]	0.63 @	(0.17)	[84.746]
Cadmium	ND	(0.36)	[72.993]	0.07 @	(0.35)	[69.444]	ND	(0.37)	[74.627]	0.06 @	(0.42)	[84.746]
Calcium	72000	(290)	[291.971]	76000	(280)	[277.778]	29000	(300)	[298.507]	56000	(340)	[339.000]
Chromium	10	(0.73)	[72.993]	9.9	(0.69)	[69.444]	11	(0.75)	[74.627]	9.5	(0.85)	[84.746]
Cobalt	3 @	(0.73)	[72.993]	2.9 @	(0.69)	[69.444]	2.4 @	(0.75)	[74.627]	3.6 @	(0.85)	[84.746]
Copper	4.3 @	(1.5)	[72.993]	4.3 @	(1.4)	[69.444]	5.3 @	(1.5)	[74.627]	4.3 @	(1.7)	[84.746]
Iron	8100	(3.6)	[72.993]	7900	(3.5)	[69.444]	8300	(3.7)	[74.627]	9200	(17)	[339.000]
Lead	2.6 @	(3.6)	[72.993]	3.3 @	(3.5)	[69.444]	13 @	(3.7)	[74.627]	2.3 @	(4.2)	[84.746]
Magnesium	2400	(73)	[72.993]	2300	(69)	[69.444]	1600	(75)	[74.627]	4600	(340)	[339.000]
Manganese	110	(0.73)	[72.993]	100	(0.69)	[69.444]	140	(0.75)	[74.627]	120	(3.4)	[339.000]
Molybdenum	0.28 @	(3.6)	[72.993]	0.45 @	(3.5)	[69.444]	0.55 @	(3.7)	[74.627]	0.73 @	(4.2)	[84.746]
Nickel	6.5 @	(1.5)	[72.993]	6 @	(1.4)	[69.444]	6.8 @	(1.5)	[74.627]	8.1 @	(1.7)	[84.746]
Potassium	2200	(220)	[72.993]	2000	(210)	[69.444]	2100	(220)	[74.627]	2900	(250)	[84.746]
Selenium	ND	(22)	[72.993]	1 @	(21)	[69.444]	ND	(22)	[74.627]	1.6 @	(25)	[84.746]
Silver	ND	(0.73)	[72.993]	ND	(0.69)	[69.444]	ND	(0.75)	[74.627]	ND	(0.85)	[84.746]
Sodium	43 @	(73)	[72.993]	42 @	(69)	[69.444]	43 @	(75)	[74.627]	250 @	(85)	[84.746]
Thallium	1.2 @	(7.3)	[72.993]	3.4 @	(6.9)	[69.444]	1.6 @	(7.5)	[74.627]	ND	(8.5)	[84.746]
Vanadium	21	(1.5)	[72.993]	20	(1.4)	[69.444]	21	(1.5)	[74.627]	19	(1.7)	[84.746]
Zinc	20	(1.5)	[72.993]	20	(1.4)	[69.444]	22	(1.5)	[74.627]	22	(1.7)	[84.746]
SW7060 - Arsenic (mg/kg)												
Arsenic	1.9	(0.29)	[73.069]	2	(0.29)	[72.601]	3.8	(0.61)	[152.582]	2.8	(0.33)	[81.518]

Compiled: 8 F ry 1994

() = Reporting Limit [] = Factor = Not Detected NA = Not Applicable

TABLE B2

RESULTS OF INORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 2B CAN97-2B-I 4 - 6			NONE 2B CAN97-2B-99 Dup of CAN97-2B-1 4 - 6			NONE 2B CAN97-2B-S 0.5 - 1			NONE 3A CAN97-3A-06 8 - 10		
SW7421 - Lead (mg/kg)												
Lead	5.5	(0.44)	[146.138]	5.5	(0.44)	[145.202]	8.9	(0.46)	[152.582]	7.5	(0.49)	[163.036]
SW7471 - Mercury (mg/kg)												
Mercury	0.024 @	(0.048)	[268.528]	0.038 @	(0.057)	[313.893]	0.024 @	(0.048)	[268.528]	ND	(0.042)	[230.968]
SW7740 - Selenium (mg/kg)												
Selenium	1.5 @	(0.37)	[73.069]	1.8	(0.36)	[72.601]	1.3 @	(0.38)	[76.291]	ND @	(0.41)	[81.518]
Soil pH (pH units)												
pH	8.4	()	[1.000]	8.5	()	[1.000]	8.4	()	[1.000]	7.7	()	[1.000]

TABLE 82

RESULTS OF INORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	NONE 3A CAN97-3A-I 4 - 6			NONE 3A CAN97-3A-S 0 - 2			NONE 3B CAN97-3B-06 8 - 10			NONE 3B CAN97-3B-I 4 - 6		
Percent moisture (%)												
Percent moisture	11	()	[1.000]	14	()	[1.000]	12	()	[1.000]	14	()	[1.000]
SW6010 - Metals (mg/kg)												
Aluminum	13000	(65)	[325.200]	11000	(180)	[900.901]	11000	(16)	[80.026]	13000	(17)	[85.499]
Antimony	ND	(33)	[325.200]	ND	(90)	[900.901]	ND	(80)	[800.256]	ND	(34)	[341.997]
Arsenic	7.6 @	(24)	[81.301]	6.5 @	(27)	[90.090]	ND	(24)	[80.026]	ND	(26)	[85.499]
Barium	220	(3.3)	[325.200]	170	(9)	[900.901]	85	(0.8)	[80.026]	250	(0.85)	[85.499]
Beryllium	0.52 @	(0.16)	[81.301]	0.39 @	(0.18)	[90.090]	0.71 @	(0.16)	[80.026]	0.58 @	(0.17)	[85.499]
Cadmium	0.4 @	(0.41)	[81.301]	0.2 @	(0.45)	[90.090]	0.43 @	(0.4)	[80.026]	0.066 @	(0.43)	[85.499]
Calcium	62000	(330)	[325.200]	250000	(900)	[900.901]	160000	(800)	[800.256]	59000	(340)	[341.997]
Chromium	8	(0.81)	[81.301]	6.9	(0.9)	[90.090]	7.1	(0.8)	[80.026]	8.4	(0.85)	[85.499]
Cobalt	2.6 @	(0.81)	[81.301]	2.3 @	(0.9)	[90.090]	2.8 @	(0.8)	[80.026]	2.8 @	(0.85)	[85.499]
Copper	4.5 @	(1.6)	[81.301]	3.5 @	(1.8)	[90.090]	4.6 @	(1.6)	[80.026]	4.3 @	(1.7)	[85.499]
Iron	7800	(16)	[325.200]	6600	(45)	[900.901]	5800	(4)	[80.026]	7700	(4.3)	[85.499]
Lead	2.7 @	(4.1)	[81.301]	ND	(4.5)	[90.090]	1.1 @	(4)	[80.026]	4.5 @	(4.3)	[85.499]
Magnesium	3700	(330)	[325.200]	4300 @	(900)	[900.901]	4200	(80)	[80.026]	4300	(85)	[85.499]
Manganese	120	(3.3)	[325.200]	55	(9)	[900.901]	110	(0.8)	[80.026]	110	(0.85)	[85.499]
Molybdenum	0.47 @	(4.1)	[81.301]	0.19 @	(4.5)	[90.090]	0.56 @	(4)	[80.026]	0.41 @	(4.3)	[85.499]
Nickel	7 @	(1.6)	[81.301]	6.5 @	(1.8)	[90.090]	6.4 @	(1.6)	[80.026]	7.3 @	(1.7)	[85.499]
Potassium	2200	(240)	[81.301]	1700	(270)	[90.090]	2200	(240)	[80.026]	2400	(260)	[85.499]
Selenium	ND	(24)	[81.301]	1.6 @	(27)	[90.090]	2.1 @	(24)	[80.026]	0.86 @	(26)	[85.499]
Silver	ND	(0.81)	[81.301]	ND	(0.9)	[90.090]	ND	(0.8)	[80.026]	ND	(0.85)	[85.499]
Sodium	330 @	(81)	[81.301]	420 @	(90)	[90.090]	220 @	(80)	[80.026]	250 @	(85)	[85.499]
Thallium	0.052 @	(8.1)	[81.301]	ND	(9)	[90.090]	ND	(8)	[80.026]	1.4 @	(8.5)	[85.499]
Vanadium	17	(1.6)	[81.301]	17	(1.8)	[90.090]	12	(1.6)	[80.026]	17	(1.7)	[85.499]
Zinc	19	(1.6)	[81.301]	17	(1.8)	[90.090]	16	(1.6)	[80.026]	20	(1.7)	[85.499]
SW7041 - Antimony by AA (mg/kg)												
Antimony	NA			0.052 @	(0.52)	[86.775]	0.027 @	(0.56)	[91.642]	NA		

Compiled: 8 F ry 1994

() = Reporting Limit [] = Factor

= Not Detected NA = Not Applicable

TABLE B2 RESULTS OF INORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 3A CAN97-3A-I 4 - 6			NONE 3A CAN97-3A-S 0 - 2			NONE 3B CAN97-3B-06 8 - 10			NONE 3B CAN97-3B-I 4 - 6		
SW7060 - Arsenic (mg/kg)												
Arsenic	3.4	(0.31)	[78.028]	5.1	(0.34)	[86.133]	0.064 @	(0.32)	[80.026]	2	(0.35)	[87.428]
SW7421 - Lead (mg/kg)												
Lead	4.4	(0.47)	[156.055]	4.3	(0.26)	[86.133]	4.2	(0.48)	[160.051]	6	(0.52)	[174.856]
SW7471 - Mercury (mg/kg)												
Mercury	ND	(0.051)	[280.899]	ND	(0.05)	[276.855]	ND	(0.06)	[334.225]	ND	(0.055)	[305.998]
SW7740 - Selenium (mg/kg)												
Selenium	0.6 @	(0.39)	[78.028]	0.58 @	(0.43)	[86.133]	ND	(0.4)	[80.026]	ND	(0.44)	[87.428]
Soil pH (pH units)												
pH	7.9	()	[1.000]	8.3	()	[1.000]	8.3	()	[1.000]	8.2	()	[1.000]

TABLE B2

RESULTS OF INORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 3B CAN97-3B-S 0 - 2			NONE 3C CAN97-3C-01 12 - 14			NONE 3C CAN97-3C-02 18 - 20			NONE 3C CAN97-3C-03 23 - 25		
Percent moisture (%)												
Percent moisture	13	()	[1.000]	9.2	()	[1.000]	11	()	[1.000]	8.8	()	[1.000]
SW6010 - Metals (mg/kg)												
Aluminum	15000	(16)	[81.520]	14000	(18)	[89.286]	14000	(19)	[97.000]	8000	(18)	[91.743]
Antimony	ND	(130)	[304.312]	ND @	(8.9)	[89.286]	ND @	(9.7)	[97.000]	ND @	(9.2)	[91.743]
Arsenic	8.6 @	(24)	[81.520]	ND @	(27)	[89.286]	ND @	(29)	[97.000]	2.9 @	(28)	[91.743]
Barium	170	(0.82)	[81.520]	130	(0.89)	[89.286]	52	(0.97)	[97.000]	59	(0.92)	[91.743]
Beryllium	0.62 @	(0.16)	[81.520]	0.63 @	(0.18)	[89.286]	0.64 @	(0.19)	[97.000]	0.48 @	(0.18)	[91.743]
Cadmium	ND	(0.41)	[81.520]	0.26 @	(0.45)	[89.286]	0.26 @	(0.48)	[97.000]	ND @	(0.46)	[91.743]
Calcium	130000	(1300)	[304.312]	5100	(89)	[89.286]	41000	(97)	[97.000]	49000	(920)	[917.000]
Chromium	11	(0.82)	[81.520]	12	(0.89)	[89.286]	10	(0.97)	[97.000]	6.1	(0.92)	[91.743]
Cobalt	4 @	(0.82)	[81.520]	3.6 @	(0.89)	[89.286]	3.6 @	(0.97)	[97.000]	2.5 @	(0.92)	[91.743]
Copper	5.4 @	(1.6)	[81.520]	7.9 @	(1.8)	[89.286]	5.4 @	(1.9)	[97.000]	2.6 @	(1.8)	[91.743]
Iron	9500	(4.1)	[81.520]	11000	(4.5)	[89.286]	10000	(4.8)	[97.000]	5700	(4.6)	[91.743]
Lead	1.4 @	(4.1)	[81.520]	10 @	(4.5)	[89.286]	7 @	(4.8)	[97.000]	2.7 @	(4.6)	[91.743]
Magnesium	3700	(82)	[81.520]	1800	(89)	[89.286]	3700	(97)	[97.000]	2800	(92)	[91.743]
Manganese	120	(0.82)	[81.520]	170	(0.89)	[89.286]	150	(0.97)	[97.000]	170	(0.92)	[91.743]
Molybdenum	0.33 @	(4.1)	[81.520]	0.74 @	(4.5)	[89.286]	0.14 @	(4.8)	[97.000]	0.046 @	(4.6)	[91.743]
Nickel	10	(1.6)	[81.520]	10	(1.8)	[89.286]	10	(1.9)	[97.000]	7.4 @	(1.8)	[91.743]
Potassium	2500	(240)	[81.520]	2200	(270)	[89.286]	2600	(290)	[97.000]	2000	(280)	[91.743]
Selenium	1.9 @	(24)	[81.520]	5.8 @	(27)	[89.286]	7.1 @	(29)	[97.000]	3.8 @	(28)	[91.743]
Silver	ND	(0.82)	[81.520]	ND @	(0.89)	[89.286]	ND @	(0.97)	[97.000]	ND @	(0.92)	[91.743]
Sodium	86 @	(82)	[81.520]	120 @	(89)	[89.286]	160 @	(97)	[97.000]	180 @	(92)	[91.743]
Thallium	0.047 @	(8.2)	[81.520]	ND @	(8.9)	[89.286]	0.69 @	(9.7)	[97.000]	1.6 @	(9.2)	[91.743]
Vanadium	26	(1.6)	[81.520]	22	(1.8)	[89.286]	27	(1.9)	[97.000]	11	(1.8)	[91.743]
Zinc	23	(1.6)	[81.520]	28	(1.8)	[89.286]	24	(1.9)	[97.000]	14	(1.8)	[91.743]
SW7041 - Antimony by AA (mg/kg)												
Antimony	0.21 @	(0.54)	[90.506]	NA			NA			NA		

Compiled: 8 F ry 1994

() = Reporting Limit [] = Factor ` = Not Detected NA = Not Applicable

TABLE B2

RESULTS OF INORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 3B CAN97-3B-S 0 - 2			NONE 3C CAN97-3C-01 12 - 14			NONE 3C CAN97-3C-02 18 - 20			NONE 3C CAN97-3C-03 23 - 25		
SW7060 - Arsenic (mg/kg)												
Arsenic	2.2	(0.33)	[81.520]	5.9	(0.36)	[91.018]	4.1	(0.37)	[91.349]	1.7 @	(0.37)	[92.923]
SW7421 - Lead (mg/kg)												
Lead	5.9	(0.49)	[163.039]	8.9	(0.55)	[182.037]	5.7	(0.27)	[91.349]	4.1	(0.28)	[92.923]
SW7471 - Mercury (mg/kg)												
Mercury	ND	(0.054)	[302.480]	0.033 @	(0.045)	[250.300]	0.024 @	(0.048)	[267.523]	0.017 @	(0.043)	[238.368]
SW7740 - Selenium (mg/kg)												
Selenium	ND	(0.41)	[81.520]	0.21 @	(0.46)	[91.018]	0.41 @	(0.46)	[91.349]	ND	(0.46)	[92.923]
Soil pH (pH units)												
pH	7.7	()	[1.000]	7.8	()	[1.000]	8.2	()	[1.000]	8.4	()	[1.000]

TABLE B2

RESULTS OF INORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 3C CAN97-3C-04 28 - 30			NONE 3C CAN97-3C-05 33 - 35			NONE 3C CAN97-3C-06 38 - 40			NONE 3C CAN97-3C-99 Dup of CAN97-3C-06 38 - 40		
Percent moisture (%)												
Percent moisture	9.3	()	[1.000]	11	()	[1.000]	11	()	[1.000]	10	()	[1.000]
SW6010 - Metals (mg/kg)												
Aluminum	11000	(18)	[90.090]	6800	(19)	[96.154]	5600	(18)	[89.286]	5100	(19)	[96.154]
Antimony	ND @	(9)	[90.090]	ND @	(9.6)	[96.154]	ND @	(8.9)	[89.286]	ND @	(9.6)	[96.154]
Arsenic	ND @	(27)	[90.090]	6 @	(29)	[96.154]	ND @	(27)	[89.286]	0.75 @	(29)	[96.154]
Barium	110	(0.9)	[90.090]	47	(0.96)	[96.154]	71	(0.89)	[89.286]	89	(0.96)	[96.154]
Beryllium	0.68 @	(0.18)	[90.090]	0.28 @	(0.19)	[96.154]	0.26 @	(0.18)	[89.286]	0.17 @	(0.19)	[96.154]
Cadmium	0.23 @	(0.45)	[90.090]	0.2 @	(0.48)	[96.154]	0.19 @	(0.45)	[89.286]	0.36 @	(0.48)	[96.154]
Calcium	42000	(90)	[90.090]	130000	(960)	[962.000]	140000	(890)	[893.000]	150000	(960)	[962.000]
Chromium	8.2	(0.9)	[90.090]	5.8	(0.96)	[96.154]	5.4	(0.89)	[89.286]	5	(0.96)	[96.154]
Cobalt	2.9 @	(0.9)	[90.090]	1.4 @	(0.96)	[96.154]	1.4 @	(0.89)	[89.286]	0.6 @	(0.96)	[96.154]
Copper	4.3 @	(1.8)	[90.090]	ND @	(1.9)	[96.154]	1.6 @	(1.8)	[89.286]	2.4 @	(1.9)	[96.154]
Iron	7000	(4.5)	[90.090]	4100	(4.8)	[96.154]	3400	(4.5)	[89.286]	3000	(4.8)	[96.154]
Lead	5.1 @	(4.5)	[90.090]	1.3 @	(4.8)	[96.154]	ND @	(4.5)	[89.286]	ND @	(4.8)	[96.154]
Magnesium	3800	(90)	[90.090]	5600	(96)	[96.154]	6400	(89)	[89.286]	6400	(96)	[96.154]
Manganese	120	(0.9)	[90.090]	43	(0.96)	[96.154]	32	(0.89)	[89.286]	27	(0.96)	[96.154]
Molybdenum	0.33 @	(4.5)	[90.090]	ND @	(4.8)	[96.154]	ND @	(4.5)	[89.286]	ND @	(4.8)	[96.154]
Nickel	7.3 @	(1.8)	[90.090]	5.1 @	(1.9)	[96.154]	4.9 @	(1.8)	[89.286]	4.1 @	(1.9)	[96.154]
Potassium	2500	(270)	[90.090]	1300 @	(290)	[96.154]	1000 @	(270)	[89.286]	900 @	(290)	[96.154]
Selenium	5.6 @	(27)	[90.090]	1.5 @	(29)	[96.154]	3.3 @	(27)	[89.286]	2.1 @	(29)	[96.154]
Silver	ND @	(0.9)	[90.090]	ND @	(0.96)	[96.154]	ND @	(0.89)	[89.286]	ND @	(0.96)	[96.154]
Sodium	230 @	(90)	[90.090]	150 @	(96)	[96.154]	140 @	(89)	[89.286]	140 @	(96)	[96.154]
Thallium	1 @	(9)	[90.090]	1.4 @	(9.6)	[96.154]	0.6 @	(8.9)	[89.286]	ND @	(9.6)	[96.154]
Vanadium	14	(1.8)	[90.090]	15	(1.9)	[96.154]	18	(1.8)	[89.286]	17	(1.9)	[96.154]
Zinc	18	(1.8)	[90.090]	9.7	(1.9)	[96.154]	7.2 @	(1.8)	[89.286]	6.3 @	(1.9)	[96.154]
SW7060 - Arsenic (mg/kg)												
Arsenic	3.2	(0.36)	[91.119]	2.7	(0.37)	[93.633]	2.1	(0.36)	[90.613]	2	(0.39)	[98.328]

Compiled: 8 (.ry 1994 , () = Reporting Limit [] = Factor = Not Detected NA = Not Applicable

TABLE B2 RESULTS OF INORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 3C CAN97-3C-04 28 - 30			NONE 3C CAN97-3C-05 33 - 35			NONE 3C CAN97-3C-06 38 - 40			NONE 3C CAN97-3C-99 Dup of CAN97-3C-06 38 - 40		
SW7421 - Lead (mg/kg)												
Lead	5.4	(0.27)	[91.119]	3.1	(0.28)	[93.633]	2.3	(0.27)	[90.613]	2.5	(0.29)	[98.328]
SW7471 - Mercury (mg/kg)												
Mercury	0.026 @	(0.052)	[290.141]	0.021 @	(0.042)	[234.082]	0.028 @	(0.051)	[280.899]	0.025 @	(0.05)	[277.778]
SW7740 - Selenium (mg/kg)												
Selenium	0.0046 @	(0.46)	[91.119]	0.3 @	(0.47)	[93.633]	0.23 @	(0.45)	[90.613]	0.35 @	(0.49)	[98.328]
Soil pH (pH units)												
pH	8.5	()	[1.000]	6.9	()	[1.000]	8.3	()	[1.000]	8.2	()	[1.000]

TABLE B2

RESULTS OF INORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 3C CAN97-3C-07 43 - 45			NONE 3C CAN97-3C-08 48 - 50			NONE 3C CAN97-3C-09 53 - 55			NONE 3C CAN97-3C-10 58 - 60		
Percent moisture (%)												
Percent moisture	9.3	()	[1.000]	10	()	[1.000]	11	()	[1.000]	7.2	()	[1.000]
SW6010 - Metals (mg/kg)												
Aluminum	8300	(19)	[93.458]	7000	(18)	[91.743]	3900	(20)	[101.000]	2600	(18)	[90.909]
Antimony	ND @	(9.3)	[93.458]	ND @	(9.2)	[91.743]	ND @	(10)	[101.000]	ND @	(9.1)	[90.909]
Arsenic	ND @	(28)	[93.458]	ND @	(28)	[91.743]	ND @	(30)	[101.000]	ND @	(27)	[90.909]
Barium	42	(0.93)	[93.458]	190	(0.92)	[91.743]	380	(1)	[101.000]	110	(0.91)	[90.909]
Beryllium	0.3 @	(0.19)	[93.458]	0.22 @	(0.18)	[91.743]	0.091 @	(0.2)	[101.000]	0.092 @	(0.18)	[90.909]
Cadmium	0.45 @	(0.47)	[93.458]	0.24 @	(0.46)	[91.743]	0.51 @	(0.5)	[101.000]	0.13 @	(0.45)	[90.909]
Calcium	21000	(93)	[93.458]	88000	(920)	[917.000]	130000	(1000)	[010.000]	52000	(910)	[909.000]
Chromium	6.3	(0.93)	[93.458]	7.8	(0.92)	[91.743]	6.3	(1)	[101.000]	2.7 @	(0.91)	[90.909]
Cobalt	2.2 @	(0.93)	[93.458]	1.7 @	(0.92)	[91.743]	0.86 @	(1)	[101.000]	0.94 @	(0.91)	[90.909]
Copper	3.4 @	(1.9)	[93.458]	3 @	(1.8)	[91.743]	2.1 @	(2)	[101.000]	0.78 @	(1.8)	[90.909]
Iron	6200	(4.7)	[93.458]	4800	(4.6)	[91.743]	2400	(5)	[101.000]	2300	(4.5)	[90.909]
Lead	6.7 @	(4.7)	[93.458]	ND @	(4.6)	[91.743]	ND @	(5)	[101.000]	ND @	(4.5)	[90.909]
Magnesium	4500	(93)	[93.458]	5800	(92)	[91.743]	15000	(100)	[101.000]	2500	(91)	[90.909]
Manganese	66	(0.93)	[93.458]	53	(0.92)	[91.743]	30	(1)	[101.000]	31	(0.91)	[90.909]
Molybdenum	ND @	(4.7)	[93.458]	ND @	(4.6)	[91.743]	ND @	(5)	[101.000]	ND @	(4.5)	[90.909]
Nickel	5.4 @	(1.9)	[93.458]	6 @	(1.8)	[91.743]	3.9 @	(2)	[101.000]	3.1 @	(1.8)	[90.909]
Potassium	2100	(280)	[93.458]	1500	(280)	[91.743]	620 @	(300)	[101.000]	480 @	(270)	[90.909]
Selenium	0.67 @	(28)	[93.458]	2.7 @	(28)	[91.743]	2.7 @	(30)	[101.000]	4.1 @	(27)	[90.909]
Silver	ND @	(0.93)	[93.458]	ND @	(0.92)	[91.743]	ND @	(1)	[101.000]	ND @	(0.91)	[90.909]
Sodium	180 @	(93)	[93.458]	180 @	(92)	[91.743]	160 @	(100)	[101.000]	85 @	(91)	[90.909]
Thallium	3.7 @	(9.3)	[93.458]	0.96 @	(9.2)	[91.743]	6.8 @	(10)	[101.000]	ND @	(9.1)	[90.909]
Vanadium	23	(1.9)	[93.458]	17	(1.8)	[91.743]	17	(2)	[101.000]	8 @	(1.8)	[90.909]
Zinc	14	(1.9)	[93.458]	11	(1.8)	[91.743]	4.7 @	(2)	[101.000]	4.3 @	(1.8)	[90.909]
SW7060 - Arsenic (mg/kg)												
Arsenic	2.6	(0.37)	[91.878]	2.4	(0.38)	[94.162]	2.5	(0.37)	[93.633]	1.1 @	(0.36)	[89.057]

Compiled: 8 ary 1994 () = Reporting Limit [] = Facto) = Not Detected NA = Not Applicable

TABLE B2 RESULTS OF INORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 3C CAN97-3C-07 43 - 45			NONE 3C CAN97-3C-08 48 - 50			NONE 3C CAN97-3C-09 53 - 55			NONE 3C CAN97-3C-10 58 - 60		
SW7421 - Lead (mg/kg)												
Lead	3.4	(0.28)	[91.878]	2.7	(0.28)	[94.162]	1.4	(0.28)	[93.633]	1.4	(0.26)	[85.523]
SW7471 - Mercury (mg/kg)												
Mercury	0.022 @	(0.05)	[275.634]	0.023 @	(0.053)	[292.398]	0.02 @	(0.051)	[280.899]	0.019 @	(0.039)	[215.517]
SW7740 - Selenium (mg/kg)												
Selenium	0.25 @	(0.46)	[91.878]	0.27 @	(0.47)	[94.162]	0.29 @	(0.47)	[93.633]	ND	(0.43)	[85.523]
Soil pH (pH units)												
pH	8.1	()	[1.000]	8.1	()	[1.000]	7.6	()	[1.000]	8.3	()	[1.000]

TABLE B2 RESULTS OF INORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 3C CAN97-3C-11 63 - 65			NONE 3C CAN97-3C-12 68 - 70			NONE 3C CAN97-3C-13 71 - 73			NONE 4A CAN97-4A-06 8 - 10		
Percent moisture (%)												
Percent moisture	4.6	()	[1.000]	5.2	()	[1.000]	5.4	()	[1.000]	7.7	()	[1.000]
SW6010 - Metals (mg/kg)												
Aluminum	2500	(18)	[90.909]	4700	(18)	[90.090]	4200	(17)	[84.034]	9500	(300)	[509.434]
Antimony	ND @	(9.1)	[90.909]	ND @	(9)	[90.090]	ND @	(8.4)	[84.034]	ND	(150)	[509.434]
Arsenic	ND @	(27)	[90.909]	ND @	(27)	[90.090]	ND @	(25)	[84.034]	1.8 @	(28)	[94.340]
Barium	22	(0.91)	[90.909]	39	(0.9)	[90.090]	49	(0.84)	[84.034]	160	(15)	[509.434]
Beryllium	0.13 @	(0.18)	[90.909]	0.21 @	(0.18)	[90.090]	0.2 @	(0.17)	[84.034]	0.43 @	(0.19)	[94.340]
Cadmium	0.23 @	(0.45)	[90.909]	0.48 @	(0.45)	[90.090]	0.31 @	(0.42)	[84.034]	0.25 @	(0.47)	[94.340]
Calcium	18000	(91)	[90.909]	7400	(90)	[90.090]	38000	(84)	[84.034]	130000	(1500)	[509.434]
Chromium	2.6 @	(0.91)	[90.909]	4.9	(0.9)	[90.090]	4 @	(0.84)	[84.034]	6.5	(0.94)	[94.340]
Cobalt	0.38 @	(0.91)	[90.909]	1.8 @	(0.9)	[90.090]	1.7 @	(0.84)	[84.034]	2.8 @	(0.94)	[94.340]
Copper	0.94 @	(1.8)	[90.909]	ND @	(1.8)	[90.090]	1.8 @	(1.7)	[84.034]	2.5 @	(1.9)	[94.340]
Iron	2600	(4.5)	[90.909]	4700	(4.5)	[90.090]	4100	(4.2)	[84.034]	7300	(75)	[509.434]
Lead	0.15 @	(4.5)	[90.909]	3.5 @	(4.5)	[90.090]	ND @	(4.2)	[84.034]	ND	(4.7)	[94.340]
Magnesium	1800	(91)	[90.909]	2600	(90)	[90.090]	2500	(84)	[84.034]	4400 @	(1500)	[509.434]
Manganese	29	(0.91)	[90.909]	100	(0.9)	[90.090]	81	(0.84)	[84.034]	83	(15)	[509.434]
Molybdenum	0.089 @	(4.5)	[90.909]	ND @	(4.5)	[90.090]	0.15 @	(4.2)	[84.034]	0.28 @	(4.7)	[94.340]
Nickel	2.8 @	(1.8)	[90.909]	4.8 @	(1.8)	[90.090]	4.2 @	(1.7)	[84.034]	7.1 @	(1.9)	[94.340]
Potassium	440 @	(270)	[90.909]	1000 @	(270)	[90.090]	860 @	(250)	[84.034]	1900	(280)	[94.340]
Selenium	2.1 @	(27)	[90.909]	1.6 @	(27)	[90.090]	2.8 @	(25)	[84.034]	1.4 @	(28)	[94.340]
Silver	ND @	(0.91)	[90.909]	ND @	(0.9)	[90.090]	ND @	(0.84)	[84.034]	ND	(0.94)	[94.340]
Sodium	56 @	(91)	[90.909]	76 @	(90)	[90.090]	60 @	(84)	[84.034]	220 @	(94)	[94.340]
Thallium	ND @	(9.1)	[90.909]	ND @	(9)	[90.090]	1.5 @	(8.4)	[84.034]	1.7 @	(9.4)	[94.340]
Vanadium	8.7 @	(1.8)	[90.909]	14	(1.8)	[90.090]	12	(1.7)	[84.034]	17	(1.9)	[94.340]
Zinc	4.8 @	(1.8)	[90.909]	8.6 @	(1.8)	[90.090]	7.8 @	(1.7)	[84.034]	15	(1.9)	[94.340]
SW7041 - Antimony by AA (mg/kg)												
Antimony	NA			NA			NA			0.069 @	(0.46)	[76.297]

Compiled: 8 ary 1994 () = Reporting Limit [] = Facto 'D = Not Detected NA = Not Applicable

TABLE B2

RESULTS OF INORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 3C CAN97-3C-11 63 - 65			NONE 3C CAN97-3C-12 68 - 70			NONE 3C CAN97-3C-13 71 - 73			NONE 4A CAN97-4A-06 8 - 10		
SW7060 - Arsenic (mg/kg)												
Arsenic	1.2 @	(0.36)	[89.591]	1.7 @	(0.35)	[87.904]	1.5 @	(0.35)	[87.362]	3.8	(0.38)	[95.878]
SW7421 - Lead (mg/kg)												
Lead	2.6	(0.27)	[89.591]	2.7	(0.26)	[87.904]	2.6	(0.26)	[87.362]	4.5	(0.29)	[95.878]
SW7471 - Mercury (mg/kg)												
Mercury	0.015 @	(0.039)	[218.838]	0.018 @	(0.045)	[251.155]	0.022 @	(0.043)	[240.246]	0.015 @	(0.054)	[300.951]
SW7740 - Selenium (mg/kg)												
Selenium	0.015 @	(0.45)	[89.591]	0.051 @	(0.44)	[87.904]	ND	(0.44)	[87.362]	0.81 @	(0.48)	[95.878]
Soil pH (pH units)												
pH	8	()	[1.000]	8.2	()	[1.000]	7.3	()	[1.000]	8.8	()	[1.000]

TABLE B2 RESULTS OF INORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID	LOCATION ID	SAMPLE ID	BEG. DEPTH - END DEPTH (FT.)										
	NONE	4A	CAN97-4A-I	4 - 6			NONE	4A	CAN97-4A-S	0.5 - 1			NONE	4A	CAN97-4A-99 Dup of CAN97-4A-S	0.5 - 1			NONE	4B	CAN97-4B-06	8 - 10		
Percent moisture (%)																								
Percent moisture	8.1		()	[1.000]	5.6		()	[1.000]	6		()	[1.000]	6.7		()	[1.000]
SW6010 - Metals (mg/kg)																								
Aluminum	7400		(150)	[754.000]	10000		(18)	[90.909]	11000		(17)	[84.034]	10000		(16)	[80.587]
Antimony	ND		(75)	[754.000]	ND		(9.1)	[90.909]	0.14 @		(8.4)	[84.034]	ND		(81)	[805.873]
Arsenic	1.6 @		(28)	[94.340]	ND		(27)	[90.909]	ND		(25)	[84.034]	ND		(24)	[80.587]
Barium	1000		(7.5)	[754.000]	56		(0.91)	[90.909]	59		(0.84)	[84.034]	530		(0.81)	[80.587]
Beryllium	0.35 @		(0.19)	[94.340]	0.39 @		(0.18)	[90.909]	0.4 @		(0.17)	[84.034]	0.36 @		(0.16)	[80.587]
Cadmium	0.061 @		(0.47)	[94.340]	0.18 @		(0.45)	[90.909]	0.033 @		(0.42)	[84.034]	0.13 @		(0.4)	[80.587]
Calcium	260000		(750)	[754.000]	2600		(91)	[90.909]	2400		(84)	[84.034]	160000		(810)	[805.873]
Chromium	4.5 @		(0.94)	[94.340]	10		(0.91)	[90.909]	10		(0.84)	[84.034]	7.8		(0.81)	[80.587]
Cobalt	1.9 @		(0.94)	[94.340]	3.1 @		(0.91)	[90.909]	3 @		(0.84)	[84.034]	2.2 @		(0.81)	[80.587]
Copper	2.4 @		(1.9)	[94.340]	5 @		(1.8)	[90.909]	5.2 @		(1.7)	[84.034]	2.1 @		(1.6)	[80.587]
Iron	4500		(38)	[754.000]	9000		(4.5)	[90.909]	9200		(4.2)	[84.034]	5900		(4)	[80.587]
Lead	ND		(4.7)	[94.340]	5.2 @		(4.5)	[90.909]	6.2 @		(4.2)	[84.034]	ND		(4)	[80.587]
Magnesium	3900		(750)	[754.000]	1200		(91)	[90.909]	1200		(84)	[84.034]	3900		(81)	[80.587]
Manganese	36 @		(7.5)	[754.000]	150		(0.91)	[90.909]	160		(0.84)	[84.034]	55		(0.81)	[80.587]
Molybdenum	ND		(4.7)	[94.340]	0.68 @		(4.5)	[90.909]	0.19 @		(4.2)	[84.034]	0.32 @		(4)	[80.587]
Nickel	4.1 @		(1.9)	[94.340]	5.9 @		(1.8)	[90.909]	5.8 @		(1.7)	[84.034]	6.5 @		(1.6)	[80.587]
Potassium	1000 @		(280)	[94.340]	1700		(270)	[90.909]	1800		(250)	[84.034]	2100		(240)	[80.587]
Selenium	ND		(28)	[94.340]	0.45 @		(27)	[90.909]	ND		(25)	[84.034]	2.4 @		(24)	[80.587]
Silver	ND		(0.94)	[94.340]	ND		(0.91)	[90.909]	ND		(0.84)	[84.034]	ND		(0.81)	[80.587]
Sodium	100 @		(94)	[94.340]	41 @		(91)	[90.909]	48 @		(84)	[84.034]	200 @		(81)	[80.587]
Thallium	1.8 @		(9.4)	[94.340]	2.7 @		(9.1)	[90.909]	ND		(8.4)	[84.034]	ND		(8.1)	[80.587]
Vanadium	11		(1.9)	[94.340]	19		(1.8)	[90.909]	19		(1.7)	[84.034]	16		(1.6)	[80.587]
Zinc	9.7		(1.9)	[94.340]	19		(1.8)	[90.909]	20		(1.7)	[84.034]	15		(1.6)	[80.587]
SW7041 - Antimony by AA (mg/kg)																								
Antimony	0.052 @		(0.52)	[87.051]	NA				NA				NA			

Compiled: 8 ! ıry 1994 () = Reporting Limit [] = Factor = Not Detected NA = Not Applicable

TABLE B2

RESULTS OF INORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 4A CAN97-4A-1 4 - 6			NONE 4A CAN97-4A-S 0.5 - 1			NONE 4A CAN97-4A-99 Dup of CAN97-4A-S 0.5 - 1			NONE 4B CAN97-4B-06 8 - 10		
SW7060 - Arsenic (mg/kg)												
Arsenic	4.8	(0.38)	[95.451]	3.6	(0.36)	[89.019]	3.5	(0.35)	[86.490]	0.6 @	(0.32)	[81.198]
SW7421 - Lead (mg/kg)												
Lead	2.7	(0.29)	[95.451]	7.7	(1.1)	[356.075]	5	(0.26)	[86.490]	3.9	(0.49)	[162.396]
SW7471 - Mercury (mg/kg)												
Mercury	0.016 @	(0.041)	[226.696]	0.018 @	(0.048)	[264.831]	0.013 @	(0.04)	[221.631]	ND	(0.04)	[223.294]
SW7740 - Selenium (mg/kg)												
Selenium	0.15 @	(0.48)	[95.451]	ND	(0.45)	[89.019]	ND	(0.43)	[86.490]	ND	(0.41)	[81.198]
Soil pH (pH units)												
pH	8.4	()	[1.000]	7.6	()	[1.000]	7.6	()	[1.000]	8.7	()	[1.000]

TABLE B2

RESULTS OF INORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	NONE 4B CAN97-4B-I 4 - 6			NONE 4B CAN97-4B-S 0 - 2			NONE 8A CAN97-8A-06 8 - 10			NONE 8A CAN97-8A-I 4 - 6		
Percent moisture (%)												
Percent moisture	7.1	()	[1.000]	4.8	()	[1.000]	10	()	[1.000]	8.8	()	[1.000]
SW6010 - Metals (mg/kg)												
Aluminum	8200	(16)	[81.547]	12000	(16)	[78.390]	9800	(16)	[79.365]	11000	(16)	[77.519]
Antimony	ND	(82)	[815.474]	ND	(7.8)	[78.390]	ND	(79)	[793.651]	ND	(78)	[775.194]
Arsenic	2.9 @	(24)	[81.547]	ND	(24)	[78.390]	ND	(24)	[79.365]	1.6 @	(23)	[77.519]
Barium	170	(0.82)	[81.547]	74	(0.78)	[78.390]	230	(0.79)	[79.365]	1100	(0.78)	[77.519]
Beryllium	0.32 @	(0.16)	[81.547]	0.44 @	(0.16)	[78.390]	0.52 @	(0.16)	[79.365]	0.42 @	(0.16)	[77.519]
Cadmium	0.2 @	(0.41)	[81.547]	0.49 @	(0.39)	[78.390]	0.094 @	(0.4)	[79.365]	ND	(0.39)	[77.519]
Calcium	190000	(820)	[815.474]	6400	(78)	[78.390]	260000	(790)	[793.651]	180000	(780)	[775.194]
Chromium	6.2	(0.82)	[81.547]	11	(0.78)	[78.390]	5.5	(0.79)	[79.365]	7.5	(0.78)	[77.519]
Cobalt	2.6 @	(0.82)	[81.547]	3 @	(0.78)	[78.390]	1.7 @	(0.79)	[79.365]	2.7 @	(0.78)	[77.519]
Copper	3.3 @	(1.6)	[81.547]	5.3 @	(1.6)	[78.390]	2 @	(1.6)	[79.365]	3.5 @	(1.6)	[77.519]
Iron	4900	(4.1)	[81.547]	8800	(3.9)	[78.390]	4300	(4)	[79.365]	5900	(3.9)	[77.519]
Lead	ND	(4.1)	[81.547]	9 @	(3.9)	[78.390]	ND	(4)	[79.365]	1 @	(3.9)	[77.519]
Magnesium	2300	(82)	[81.547]	1500	(78)	[78.390]	4600	(79)	[79.365]	3400	(78)	[77.519]
Manganese	48	(0.82)	[81.547]	140	(0.78)	[78.390]	40	(0.79)	[79.365]	84	(0.78)	[77.519]
Molybdenum	0.3 @	(4.1)	[81.547]	0.31 @	(3.9)	[78.390]	0.004 @	(4)	[79.365]	0.53 @	(3.9)	[77.519]
Nickel	6.1 @	(1.6)	[81.547]	7 @	(1.6)	[78.390]	4.6 @	(1.6)	[79.365]	6.8 @	(1.6)	[77.519]
Potassium	1300	(240)	[81.547]	2100	(240)	[78.390]	1500	(240)	[79.365]	1800	(230)	[77.519]
Selenium	ND	(24)	[81.547]	0.79 @	(24)	[78.390]	2.3 @	(24)	[79.365]	ND	(23)	[77.519]
Silver	ND	(0.82)	[81.547]	ND	(0.78)	[78.390]	ND	(0.79)	[79.365]	ND	(0.78)	[77.519]
Sodium	62 @	(82)	[81.547]	40 @	(78)	[78.390]	380 @	(79)	[79.365]	95 @	(78)	[77.519]
Thallium	2.7 @	(8.2)	[81.547]	1.3 @	(7.8)	[78.390]	1.4 @	(7.9)	[79.365]	3.6 @	(7.8)	[77.519]
Vanadium	12	(1.6)	[81.547]	19	(1.6)	[78.390]	12	(1.6)	[79.365]	17	(1.6)	[77.519]
Zinc	13	(1.6)	[81.547]	24	(1.6)	[78.390]	15	(1.6)	[79.365]	17	(1.6)	[77.519]
SW7041 - Antimony by AA (mg/kg)												
Antimony	0.05 @	(0.5)	[82.802]	NA			ND	(0.5)	[82.919]	0.14 @	(0.51)	[85.663]

Compiled: 8 F ary 1994

() = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B2 RESULTS OF INORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 4B CAN97-4B-I 4 - 6			NONE 4B CAN97-4B-S 0 - 2			NONE 8A CAN97-8A-06 8 - 10			NONE 8A CAN97-8A-I 4 - 6		
SW7060 - Arsenic (mg/kg)												
Arsenic	0.48 @	(0.33)	[82.170]	2.9	(0.32)	[78.979]	ND	(0.32)	[79.936]	ND	(0.34)	[84.999]
SW7421 - Lead (mg/kg)												
Lead	6.3	(0.49)	[164.340]	8.3	(0.47)	[157.958]	4.1	(0.48)	[159.872]	5.7	(0.51)	[169.999]
SW7471 - Mercury (mg/kg)												
Mercury	ND	(0.044)	[244.642]	ND	(0.053)	[291.783]	ND	(0.056)	[308.642]	0.044 @	(0.047)	[261.069]
SW7740 - Selenium (mg/kg)												
Selenium	ND	(0.41)	[82.170]	0.33 @	(0.39)	[78.979]	ND	(0.4)	[79.936]	1.8 @	(0.42)	[84.999]
Soil pH (pH units)												
pH	8.4	()	[1.000]	8.3	()	[1.000]	8.1	()	[1.000]	8.5	()	[1.000]

TABLE B2 RESULTS OF INORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 8A CAN97-8A-S 0.5 - 1			NONE 8B CAN97-8B-01 4 - 6			NONE 8B CAN97-8B-02 8 - 10			NONE 8B CAN97-8B-03 14 - 16		
Percent moisture (%)												
Percent moisture	7.1	()	[1.000]	8.3	()	[1.000]	8.2	()	[1.000]	9.2	()	[1.000]
SW6010 - Metals (mg/kg)												
Aluminum	17000	(15)	[74.752]	8600	(150)	[729.927]	12000	(160)	[819.672]	12000	(16)	[79.806]
Antimony	ND	(30)	[299.007]	ND	(73)	[729.927]	ND	(82)	[819.672]	ND	(32)	[319.224]
Arsenic	ND	(22)	[74.752]	4.1 @	(22)	[72.993]	7.6 @	(25)	[81.967]	1.1 @	(24)	[79.806]
Barium	130	(0.75)	[74.752]	1700	(7.3)	[729.927]	810	(8.2)	[819.672]	190	(0.8)	[79.806]
Beryllium	0.55 @	(0.15)	[74.752]	0.36 @	(0.15)	[72.993]	0.57 @	(0.16)	[81.967]	0.6 @	(0.16)	[79.806]
Cadmium	0.87 @	(0.37)	[74.752]	0.39 @	(0.36)	[72.993]	0.31 @	(0.41)	[81.967]	0.026 @	(0.4)	[79.806]
Calcium	57000	(300)	[299.007]	210000	(730)	[729.927]	140000	(820)	[819.672]	72000	(320)	[319.224]
Chromium	14	(0.75)	[74.752]	6.1	(0.73)	[72.993]	7.2	(0.82)	[81.967]	8.4	(0.8)	[79.806]
Cobalt	3.7 @	(0.75)	[74.752]	2.5 @	(0.73)	[72.993]	3.3 @	(0.82)	[81.967]	2.7 @	(0.8)	[79.806]
Copper	13	(1.5)	[74.752]	5.1 @	(1.5)	[72.993]	3.4 @	(1.6)	[81.967]	3.5 @	(1.6)	[79.806]
Iron	11000	(3.7)	[74.752]	5700	(36)	[729.927]	7600	(41)	[819.672]	7600	(4)	[79.806]
Lead	11 @	(3.7)	[74.752]	1.6 @	(3.6)	[72.993]	2.8 @	(4.1)	[81.967]	2.1 @	(4)	[79.806]
Magnesium	2300	(75)	[74.752]	4300	(730)	[729.927]	5200	(820)	[819.672]	3900	(80)	[79.806]
Manganese	160	(0.75)	[74.752]	70	(7.3)	[729.927]	110	(8.2)	[819.672]	110	(0.8)	[79.806]
Molybdenum	0.49 @	(3.7)	[74.752]	0.61 @	(3.6)	[72.993]	0.27 @	(4.1)	[81.967]	ND	(4)	[79.806]
Nickel	10	(1.5)	[74.752]	6.4 @	(1.5)	[72.993]	7.6 @	(1.6)	[81.967]	7.2 @	(1.6)	[79.806]
Potassium	2900	(220)	[74.752]	1300	(220)	[72.993]	2300	(250)	[81.967]	2400	(240)	[79.806]
Selenium	3 @	(22)	[74.752]	ND	(22)	[72.993]	0.68 @	(25)	[81.967]	3.2 @	(24)	[79.806]
Silver	ND	(0.75)	[74.752]	ND	(0.73)	[72.993]	ND	(0.82)	[81.967]	ND	(0.8)	[79.806]
Sodium	57 @	(75)	[74.752]	95 @	(73)	[72.993]	380 @	(82)	[81.967]	330 @	(80)	[79.806]
Thallium	2 @	(7.5)	[74.752]	ND	(7.3)	[72.993]	0.013 @	(8.2)	[81.967]	ND	(8)	[79.806]
Vanadium	25	(1.5)	[74.752]	13	(1.5)	[72.993]	17	(1.6)	[81.967]	19	(1.6)	[79.806]
Zinc	53	(1.5)	[74.752]	85	(1.5)	[72.993]	19	(1.6)	[81.967]	21	(1.6)	[79.806]
SW7041 - Antimony by AA (mg/kg)												
Antimony	NA			0.04 @	(0.47)	[79.023]	NA			NA		

Compiled: 8 F ry 1994 () = Reporting Limit [] = Factor ` = Not Detected NA = Not Applicable

TABLE B2 RESULTS OF INORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 8A CAN97-8A-S 0.5 - 1			NONE 8B CAN97-8B-01 4 - 6			NONE 8B CAN97-8B-02 8 - 10			NONE 8B CAN97-8B-03 14 - 16		
SW7060 - Arsenic (mg/kg)												
Arsenic	0.023 @	(0.3)	[75.275]	0.93 @	(0.35)	[86.549]	1.6 @	(0.33)	[82.525]	2.8	(0.33)	[82.188]
SW7421 - Lead (mg/kg)												
Lead	14	(0.9)	[301.098]	6.2	(0.48)	[158.730]	5.8	(0.5)	[165.049]	6	(0.49)	[164.376]
SW7471 - Mercury (mg/kg)												
Mercury	0.024 @	(0.039)	[215.285]	ND	(0.043)	[237.068]	ND	(0.049)	[272.331]	ND	(0.047)	[262.219]
SW7740 - Selenium (mg/kg)												
Selenium	0.12 @	(0.38)	[75.275]	0.48 @	(0.43)	[86.549]	0.48 @	(0.41)	[82.525]	0.92 @	(0.41)	[82.188]
Soil pH (pH units)												
pH	8.1	()	[1.000]	8.5	()	[1.000]	8.8	()	[1.000]	8.4	()	[1.000]

TABLE B2

RESULTS OF INORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 8B CAN97-8B-04 19 - 21			NONE 8B CAN97-8B-05 24 - 26			NONE 8B CAN97-8B-06 29 - 31			NONE 8B CAN97-8B-07 34 - 36		
Percent moisture (%)												
Percent moisture	9.2	()	[1.000]	9.7	()	[1.000]	6.3	()	[1.000]	5.4	()	[1.000]
SW8010 - Metals (mg/kg)												
Aluminum	8900	(17)	[84.070]	8800	(17)	[83.265]	6800	(15)	[73.098]	4700	(18)	[89.286]
Antimony	ND	(34)	[336.281]	ND	(33)	[333.059]	ND	(29)	[292.393]	ND @	(8.9)	[89.286]
Arsenic	2.1 @	(25)	[84.070]	3.1 @	(25)	[83.265]	1.8 @	(22)	[73.098]	0.34 @	(27)	[89.286]
Barium	190	(0.84)	[84.070]	760	(0.83)	[83.265]	56	(0.73)	[73.098]	62	(0.89)	[89.286]
Beryllium	0.31 @	(0.17)	[84.070]	0.24 @	(0.17)	[83.265]	0.2 @	(0.15)	[73.098]	0.15 @	(0.18)	[89.286]
Cadmium	ND	(0.42)	[84.070]	ND	(0.42)	[83.265]	ND	(0.37)	[73.098]	0.59 @	(0.45)	[89.286]
Calcium	140000	(340)	[336.281]	110000	(330)	[333.059]	68000	(290)	[292.393]	61000	(890)	[893.000]
Chromium	7.4	(0.84)	[84.070]	6.5	(0.83)	[83.265]	5.4	(0.73)	[73.098]	3.9 @	(0.89)	[89.286]
Cobalt	1.7 @	(0.84)	[84.070]	1.7 @	(0.83)	[83.265]	0.94 @	(0.73)	[73.098]	0.53 @	(0.89)	[89.286]
Copper	ND @	(1.7)	[84.070]	2.1 @	(1.7)	[83.265]	0.93 @	(1.5)	[73.098]	1.1 @	(1.8)	[89.286]
Iron	5200	(4.2)	[84.070]	4700	(4.2)	[83.265]	4400	(3.7)	[73.098]	3400	(4.5)	[89.286]
Lead	ND	(4.2)	[84.070]	ND	(4.2)	[83.265]	ND	(3.7)	[73.098]	ND @	(4.5)	[89.286]
Magnesium	5900	(84)	[84.070]	8100	(83)	[83.265]	3300	(73)	[73.098]	4000	(89)	[89.286]
Manganese	46	(0.84)	[84.070]	39	(0.83)	[83.265]	33	(0.73)	[73.098]	30	(0.89)	[89.286]
Molybdenum	0.31 @	(4.2)	[84.070]	0.17 @	(4.2)	[83.265]	ND	(3.7)	[73.098]	ND @	(4.5)	[89.286]
Nickel	4.7 @	(1.7)	[84.070]	4.9 @	(1.7)	[83.265]	3.6 @	(1.5)	[73.098]	3.8 @	(1.8)	[89.286]
Potassium	1700	(250)	[84.070]	1700	(250)	[83.265]	1300	(220)	[73.098]	920 @	(270)	[89.286]
Selenium	2.6 @	(25)	[84.070]	ND	(25)	[83.265]	4.4 @	(22)	[73.098]	ND @	(27)	[89.286]
Silver	ND	(0.84)	[84.070]	ND	(0.83)	[83.265]	ND	(0.73)	[73.098]	ND @	(0.89)	[89.286]
Sodium	260 @	(84)	[84.070]	240 @	(83)	[83.265]	140 @	(73)	[73.098]	110 @	(89)	[89.286]
Thallium	1.1 @	(8.4)	[84.070]	ND	(8.3)	[83.265]	2.6 @	(7.3)	[73.098]	0.44 @	(8.9)	[89.286]
Vanadium	17	(1.7)	[84.070]	13	(1.7)	[83.265]	9.3	(1.5)	[73.098]	7.8 @	(1.8)	[89.286]
Zinc	13	(1.7)	[84.070]	9.3	(1.7)	[83.265]	8.6	(1.5)	[73.098]	6.4 @	(1.8)	[89.286]
SW7060 - Arsenic (mg/kg)												
Arsenic	0.2 @	(0.33)	[83.434]	1.6 @	(0.34)	[83.895]	1.4 @	(0.3)	[74.114]	1.5 @	(0.35)	[87.362]

Compiled: 8 ary 1994 () = Reporting Limit [] = Factor) = Not Detected NA = Not Applicable

TABLE B2

RESULTS OF INORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 88 CAN97-88-04 19 - 21			NONE 88 CAN97-88-05 24 - 26			NONE 88 CAN97-88-06 29 - 31			NONE 88 CAN97-88-07 34 - 36		
SW7421 - Lead (mg/kg)												
Lead	2.6	(0.25)	[83.434]	2.6	(0.25)	[83.895]	2.5	(0.22)	[74.114]	2	(0.26)	[87.362]
SW7471 - Mercury (mg/kg)												
Mercury	ND	(0.05)	[275.330]	ND	(0.055)	[307.617]	ND	(0.053)	[296.454]	0.017 @	(0.043)	[240.246]
SW7740 - Selenium (mg/kg)												
Selenium	ND	(0.42)	[83.434]	0.26 @	(0.42)	[83.895]	ND	(0.37)	[74.114]	ND	(0.44)	[87.362]
Soil pH (pH units)												
pH	8.1	()	[1.000]	8.2	()	[1.000]	8.4	()	[1.000]	7.5	()	[1.000]

TABLE B2 RESULTS OF INORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 8B CAN97-8B-08 39 - 41			NONE 8B CAN97-8B-09 44 - 46			NONE 8B CAN97-8B-10 49 - 51			NONE 8B CAN97-8B-11 54 - 56		
Percent moisture (%)												
Percent moisture	5.5	()	[1.000]	4.6	()	[1.000]	7.4	()	[1.000]	5.6	()	[1.000]
SW6010 - Metals (mg/kg)												
Aluminum	5200	(15)	[72.979]	4000	(15)	[75.958]	4400	(16)	[79.405]	3900	(15)	[76.210]
Antimony	1.2 @	(7.3)	[72.979]	0.18 @	(7.6)	[75.958]	ND	(7.9)	[79.405]	ND	(7.6)	[76.210]
Arsenic	ND	(22)	[72.979]	ND	(23)	[75.958]	ND	(24)	[79.405]	0.4 @	(23)	[76.210]
Barium	22	(0.73)	[72.979]	14	(0.76)	[75.958]	20	(0.79)	[79.405]	15	(0.76)	[76.210]
Beryllium	0.18 @	(0.15)	[72.979]	ND @	(0.15)	[75.958]	0.15 @	(0.16)	[79.405]	0.14 @	(0.15)	[76.210]
Cadmium	0.045 @	(0.36)	[72.979]	0.02 @	(0.38)	[75.958]	0.22 @	(0.4)	[79.405]	0.011 @	(0.38)	[76.210]
Calcium	15000	(73)	[72.979]	12000	(76)	[75.958]	26000	(79)	[79.405]	11000	(76)	[76.210]
Chromium	5	(0.73)	[72.979]	4.6	(0.76)	[75.958]	4.7	(0.79)	[79.405]	4.3	(0.76)	[76.210]
Cobalt	1.5 @	(0.73)	[72.979]	1.1 @	(0.76)	[75.958]	2.1 @	(0.79)	[79.405]	1.3 @	(0.76)	[76.210]
Copper	1 @	(1.5)	[72.979]	0.98 @	(1.5)	[75.958]	1.1 @	(1.6)	[79.405]	1 @	(1.5)	[76.210]
Iron	4200	(3.6)	[72.979]	3700	(3.8)	[75.958]	3700	(4)	[79.405]	3600	(3.8)	[76.210]
Lead	0.61 @	(3.6)	[72.979]	0.69 @	(3.8)	[75.958]	0.15 @	(4)	[79.405]	4.4 @	(3.8)	[76.210]
Magnesium	3300	(73)	[72.979]	3100	(76)	[75.958]	4200	(79)	[79.405]	2800	(76)	[76.210]
Manganese	48	(0.73)	[72.979]	34	(0.76)	[75.958]	65	(0.79)	[79.405]	43	(0.76)	[76.210]
Molybdenum	0.11 @	(3.6)	[72.979]	0.43 @	(3.8)	[75.958]	0.31 @	(4)	[79.405]	ND	(3.8)	[76.210]
Nickel	3.5 @	(1.5)	[72.979]	3.2 @	(1.5)	[75.958]	3.5 @	(1.6)	[79.405]	2.9 @	(1.5)	[76.210]
Potassium	1100	(220)	[72.979]	850 @	(230)	[75.958]	750 @	(240)	[79.405]	720 @	(230)	[76.210]
Selenium	0.94 @	(22)	[72.979]	ND	(23)	[75.958]	ND	(24)	[79.405]	2.7 @	(23)	[76.210]
Silver	ND	(0.73)	[72.979]	ND	(0.76)	[75.958]	ND	(0.79)	[79.405]	ND	(0.76)	[76.210]
Sodium	66 @	(73)	[72.979]	48 @	(76)	[75.958]	44 @	(79)	[79.405]	41 @	(76)	[76.210]
Thallium	0.18 @	(7.3)	[72.979]	2.1 @	(7.6)	[75.958]	ND	(7.9)	[79.405]	1.4 @	(7.6)	[76.210]
Vanadium	11	(1.5)	[72.979]	11	(1.5)	[75.958]	12	(1.6)	[79.405]	11	(1.5)	[76.210]
Zinc	8.8	(1.5)	[72.979]	7.5	(1.5)	[75.958]	8.2	(1.6)	[79.405]	6.3 @	(1.5)	[76.210]
SW7060 - Arsenic (mg/kg)												
Arsenic	1.8	(0.3)	[74.521]	1.4 @	(0.3)	[75.411]	1.4 @	(0.32)	[79.994]	1.9	(0.31)	[76.763]

Compiled: 8 ' ary 1994 () = Reporting Limit [] = Factor 'D = Not Detected NA = Not Applicable

TABLE B2 RESULTS OF INORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 8B CAN97-8B-08 39 - 41			NONE 8B CAN97-8B-09 44 - 46			NONE 8B CAN97-8B-10 49 - 51			NONE 8B CAN97-8B-11 54 - 56		
SW7421 - Lead (mg/kg)												
Lead	2.3	(0.22)	[74.521]	3.2	(0.23)	[75.411]	3.6	(0.24)	[79.994]	2.3	(0.23)	[76.763]
SW7471 - Mercury (mg/kg)												
Mercury	ND	(0.053)	[293.945]	ND	(0.043)	[238.231]	ND	(0.044)	[245.435]	ND	(0.043)	[240.755]
SW7740 - Selenium (mg/kg)												
Selenium	ND	(0.37)	[74.521]	ND	(0.38)	[75.411]	0.014 @	(0.4)	[79.994]	ND	(0.38)	[76.763]
Soil pH (pH units)												
pH	8.3	()	[1.000]	7.9	()	[1.000]	7.7	()	[1.000]	7.6	()	[1.000]

TABLE B2 RESULTS OF INORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	NONE 8B CAN97-8B-12 59 - 61			NONE 8B CAN97-8B-99 Dup of CAN97-8B-12 59 - 61			NONE 8B CAN97-8B-13 64 - 66			NONE 8G CAN97-8G-01 0 - 2		
Percent moisture (%)												
Percent moisture	1.8	()	[1.000]	2	()	[1.000]	5.2	()	[1.000]	8	()	[1.000]
SW6010 - Metals (mg/kg)												
Aluminum	1900	(17)	[84.746]	2000	(17)	[84.746]	3500	(15)	[72.748]	9300	(16)	[78.125]
Antimony	ND @	(8.5)	[84.746]	ND @	(8.5)	[84.746]	ND	(7.3)	[72.748]	ND	(31)	[312.500]
Arsenic	ND @	(25)	[84.746]	ND @	(25)	[84.746]	ND	(22)	[72.748]	1.8 @	(23)	[78.125]
Barium	29	(0.85)	[84.746]	38	(0.85)	[84.746]	15	(0.73)	[72.748]	170	(0.78)	[78.125]
Beryllium	0.087 @	(0.17)	[84.746]	0.082 @	(0.17)	[84.746]	0.12 @	(0.15)	[72.748]	0.41 @	(0.16)	[78.125]
Cadmium	0.094 @	(0.42)	[84.746]	0.17 @	(0.42)	[84.746]	0.0022 @	(0.36)	[72.748]	0.33 @	(0.39)	[78.125]
Calcium	9300	(85)	[84.746]	11000	(85)	[84.746]	9400	(73)	[72.748]	79000	(310)	[312.500]
Chromium	2 @	(0.85)	[84.746]	2.2 @	(0.85)	[84.746]	3.9	(0.73)	[72.748]	7.6	(0.78)	[78.125]
Cobalt	0.42 @	(0.85)	[84.746]	0.53 @	(0.85)	[84.746]	1.3 @	(0.73)	[72.748]	3.2 @	(0.78)	[78.125]
Copper	0.67 @	(1.7)	[84.746]	0.82 @	(1.7)	[84.746]	1.2 @	(1.5)	[72.748]	5 @	(1.6)	[78.125]
Iron	2200	(4.2)	[84.746]	2200	(4.2)	[84.746]	3800	(3.6)	[72.748]	6800	(3.9)	[78.125]
Lead	ND @	(4.2)	[84.746]	0.82 @	(4.2)	[84.746]	0.31 @	(3.6)	[72.748]	3.7 @	(3.9)	[78.125]
Magnesium	1100	(85)	[84.746]	1200	(85)	[84.746]	1800	(73)	[72.748]	2300	(78)	[78.125]
Manganese	23	(0.85)	[84.746]	27	(0.85)	[84.746]	45	(0.73)	[72.748]	140	(0.78)	[78.125]
Molybdenum	ND @	(4.2)	[84.746]	ND @	(4.2)	[84.746]	0.19 @	(3.6)	[72.748]	0.6 @	(3.9)	[78.125]
Nickel	2.9 @	(1.7)	[84.746]	2.2 @	(1.7)	[84.746]	3.3 @	(1.5)	[72.748]	14 @	(6.2)	[312.500]
Potassium	360 @	(250)	[84.746]	370 @	(250)	[84.746]	590 @	(220)	[72.748]	1500	(230)	[78.125]
Selenium	1.6 @	(25)	[84.746]	2.3 @	(25)	[84.746]	1.8 @	(22)	[72.748]	ND	(23)	[78.125]
Silver	ND @	(0.85)	[84.746]	ND @	(0.85)	[84.746]	ND	(0.73)	[72.748]	ND	(0.78)	[78.125]
Sodium	16 @	(85)	[84.746]	25 @	(85)	[84.746]	28 @	(73)	[72.748]	48 @	(78)	[78.125]
Thallium	ND @	(8.5)	[84.746]	2.6 @	(8.5)	[84.746]	ND	(7.3)	[72.748]	ND	(7.8)	[78.125]
Vanadium	5.6 @	(1.7)	[84.746]	5.5 @	(1.7)	[84.746]	10	(1.5)	[72.748]	18	(1.6)	[78.125]
Zinc	3.7 @	(1.7)	[84.746]	3.8 @	(1.7)	[84.746]	6.9 @	(1.5)	[72.748]	16	(1.6)	[78.125]
SW7060 - Arsenic (mg/kg)												
Arsenic	0.85 @	(0.34)	[84.160]	1 @	(0.35)	[88.731]	1.8	(0.29)	[73.254]	4.9	(0.33)	[81.726]

Compiled: 8 F ary 1994 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable

TABLE B2

RESULTS OF INORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE 8B CAN97-8B-12 59 - 61			NONE 8B CAN97-8B-99 Dup of CAN97-8B-12 59 - 61			NONE 8B CAN97-8B-13 64 - 66			NONE BG CAN97-8G-01 0 - 2		
SW7421 - Lead (mg/kg)												
Lead	1.7	(0.25)	[84.160]	2.6	(0.26)	[86.475]	2.6	(0.22)	[73.254]	9.7	(0.98)	[326.904]
SW7471 - Mercury (mg/kg)												
Mercury	0.02 @	(0.046)	[254.582]	0.018 @	(0.037)	[204.082]	ND	(0.05)	[277.593]	0.023 @	(0.051)	[286.041]
SW7740 - Selenium (mg/kg)												
Selenium	ND	(0.42)	[84.160]	ND	(0.43)	[86.475]	ND	(0.37)	[73.254]	0.78 @	(0.41)	[81.726]
Soil pH (pH units)												
pH	7.5	()	[1.000]	8.5	()	[1.000]	8.5	()	[1.000]	8.2	()	[1.000]

TABLE B2 RESULTS OF INORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE BG CAN97-BG-05 19 - 21			NONE BG CAN97-BG-07 32 - 34			NONE BG CAN97-BG-08 34 - 36			NONE BG CAN97-BG-09 39 - 41		
Percent moisture (%)												
Percent moisture	5.6	()	[1.000]	5	()	[1.000]	5.5	()	[1.000]	7.4	()	[1.000]
SW6010 - Metals (mg/kg)												
Aluminum	9000	(15)	[74.627]	5100	(16)	[77.519]	4900	(15)	[73.529]	5600	(17)	[84.034]
Antimony	ND	(30)	[298.000]	ND	(31)	[310.078]	ND	(29)	[294.118]	ND	(34)	[336.000]
Arsenic	ND	(22)	[74.627]	1 @	(23)	[77.519]	0.21 @	(22)	[73.529]	2 @	(25)	[84.034]
Barium	62	(0.75)	[74.627]	860	(0.78)	[77.519]	140	(0.74)	[73.529]	260	(0.84)	[84.034]
Beryllium	0.29 @	(0.15)	[74.627]	0.15 @	(0.16)	[77.519]	0.16 @	(0.15)	[73.529]	0.18 @	(0.17)	[84.034]
Cadmium	0.16 @	(0.37)	[74.627]	0.27 @	(0.39)	[77.519]	0.23 @	(0.37)	[73.529]	0.45 @	(0.42)	[84.034]
Calcium	83000	(300)	[298.000]	69000	(310)	[310.078]	39000	(290)	[294.118]	47000	(340)	[336.000]
Chromium	6.7	(0.75)	[74.627]	4.2	(0.78)	[77.519]	4.2	(0.74)	[73.529]	5.4	(0.84)	[84.034]
Cobalt	1.9 @	(0.75)	[74.627]	1.5 @	(0.78)	[77.519]	1.3 @	(0.74)	[73.529]	2 @	(0.84)	[84.034]
Copper	2.1 @	(1.5)	[74.627]	2 @	(1.6)	[77.519]	1.3 @	(1.5)	[73.529]	2.3 @	(1.7)	[84.034]
Iron	5600	(3.7)	[74.627]	3600	(3.9)	[77.519]	3600	(3.7)	[73.529]	4400	(4.2)	[84.034]
Lead	ND	(3.7)	[74.627]	ND	(3.9)	[77.519]	ND	(3.7)	[73.529]	1.4 @	(4.2)	[84.034]
Magnesium	3000	(75)	[74.627]	5400	(78)	[77.519]	4500	(74)	[73.529]	7700	(84)	[84.034]
Manganese	54	(0.75)	[74.627]	34	(0.78)	[77.519]	36	(0.74)	[73.529]	52	(0.84)	[84.034]
Molybdenum	0.36 @	(3.7)	[74.627]	0.36 @	(3.9)	[77.519]	0.33 @	(3.7)	[73.529]	0.12 @	(4.2)	[84.034]
Nickel	7.9 @	(6)	[298.000]	7.9 @	(6.2)	[310.078]	6.4 @	(5.9)	[294.118]	8.1 @	(6.7)	[336.000]
Potassium	2000	(220)	[74.627]	1200	(230)	[77.519]	1100	(220)	[73.529]	1300	(250)	[84.034]
Selenium	ND	(22)	[74.627]	ND	(23)	[77.519]	ND	(22)	[73.529]	ND	(25)	[84.034]
Silver	ND	(0.75)	[74.627]	ND	(0.78)	[77.519]	ND	(0.74)	[73.529]	ND	(0.84)	[84.034]
Sodium	190 @	(75)	[74.627]	120 @	(78)	[77.519]	97 @	(74)	[73.529]	110 @	(84)	[84.034]
Thallium	ND	(7.5)	[74.627]	ND	(7.8)	[77.519]	ND	(7.4)	[73.529]	ND	(8.4)	[84.034]
Vanadium	14	(1.5)	[74.627]	10	(1.6)	[77.519]	9.9	(1.5)	[73.529]	15	(1.7)	[84.034]
Zinc	13	(1.5)	[74.627]	7.8 @	(1.6)	[77.519]	7.2 @	(1.5)	[73.529]	8.5	(1.7)	[84.034]
SW7060 - Arsenic (mg/kg)												
Arsenic	3.4	(0.29)	[72.556]	2.7	(0.29)	[72.098]	1.9	(0.32)	[80.779]	1.8	(0.3)	[74.477]

Compiled: 8 (ary 1994 () = Reporting Limit [] = Factor] = Not Detected NA = Not Applicable

TABLE B2 RESULTS OF INORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE BG CAN97-BG-05 19 - 21			NONE BG CAN97-BG-07 32 - 34			NONE BG CAN97-BG-08 34 - 36			NONE BG CAN97-BG-09 39 - 41		
SW7421 - Lead (mg/kg)												
Lead	3.2	(0.22)	[72.556]	2	(0.22)	[72.098]	2.3	(0.24)	[80.779]	2.9	(0.22)	[74.477]
SW7471 - Mercury (mg/kg)												
Mercury	0.031 @	(0.05)	[278.769]	ND @	(0.043)	[239.234]	0.044 @	(0.041)	[230.044]	0.045 @	(0.054)	[299.976]
SW7740 - Selenium (mg/kg)												
Selenium	0.18 @	(0.36)	[72.556]	0.55 @	(0.36)	[72.098]	0.0016 @	(0.4)	[80.779]	0.071 @	(0.37)	[74.477]
Soil pH (pH units)												
pH	8.3	()	[1.000]	8.5	()	[1.000]	8.6	()	[1.000]	8.4	()	[1.000]

TABLE B2

RESULTS OF INORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE BG CAN97-BG-10 44 - 46			NONE BG CAN97-BG-11 51 - 53			NONE BG CAN97-BG-12 56 - 58			NONE BG CAN97-BG-13 59 - 61		
Percent moisture (%)												
Percent moisture	7.6	()	[1.000]	2.2	()	[1.000]	2	()	[1.000]	1.4	()	[1.000]
SW6010 - Metals (mg/kg)												
Aluminum	4500	(17)	[84.034]	2100	(15)	[74.074]	1900	(16)	[78.125]	1800	(15)	[74.627]
Antimony	ND	(8.4)	[84.034]	1.5 @	(7.4)	[74.074]	ND	(7.8)	[78.125]	4.6 @	(7.5)	[74.627]
Arsenic	1.9 @	(25)	[84.034]	ND	(22)	[74.074]	ND	(23)	[78.125]	ND	(22)	[74.627]
Barium	19	(0.84)	[84.034]	7.6	(0.74)	[74.074]	9.4	(0.78)	[78.125]	9.7	(0.75)	[74.627]
Beryllium	0.15 @	(0.17)	[84.034]	0.084 @	(0.15)	[74.074]	0.073 @	(0.16)	[78.125]	0.07 @	(0.15)	[74.627]
Cadmium	0.3 @	(0.42)	[84.034]	0.065 @	(0.37)	[74.074]	ND @	(0.39)	[78.125]	0.12 @	(0.37)	[74.627]
Calcium	37000	(84)	[84.034]	400	(74)	[74.074]	2100	(78)	[78.125]	530	(75)	[74.627]
Chromium	4.3	(0.84)	[84.034]	2.2 @	(0.74)	[74.074]	1.6 @	(0.78)	[78.125]	1.6 @	(0.75)	[74.627]
Cobalt	1 @	(0.84)	[84.034]	0.57 @	(0.74)	[74.074]	0.93 @	(0.78)	[78.125]	0.62 @	(0.75)	[74.627]
Copper	1.8 @	(1.7)	[84.034]	0.78 @	(1.5)	[74.074]	0.97 @	(1.6)	[78.125]	0.69 @	(1.5)	[74.627]
Iron	3500	(4.2)	[84.034]	2400	(3.7)	[74.074]	2100	(3.9)	[78.125]	2100	(3.7)	[74.627]
Lead	1 @	(4.2)	[84.034]	1.2 @	(3.7)	[74.074]	1.3 @	(3.9)	[78.125]	0.51 @	(3.7)	[74.627]
Magnesium	7200	(84)	[84.034]	1200	(74)	[74.074]	900	(78)	[78.125]	840	(75)	[74.627]
Manganese	32	(0.84)	[84.034]	17	(0.74)	[74.074]	21	(0.78)	[78.125]	23	(0.75)	[74.627]
Molybdenum	0.35 @	(4.2)	[84.034]	0.36 @	(3.7)	[74.074]	0.25 @	(3.9)	[78.125]	0.38 @	(3.7)	[74.627]
Nickel	3.9 @	(1.7)	[84.034]	2.6 @	(1.5)	[74.074]	1.9 @	(1.6)	[78.125]	1.6 @	(1.5)	[74.627]
Potassium	910 @	(250)	[84.034]	420 @	(220)	[74.074]	360 @	(230)	[78.125]	360 @	(220)	[74.627]
Selenium	ND	(25)	[84.034]	ND	(22)	[74.074]	ND	(23)	[78.125]	ND	(22)	[74.627]
Silver	ND	(0.84)	[84.034]	ND	(0.74)	[74.074]	ND	(0.78)	[78.125]	ND	(0.75)	[74.627]
Sodium	81 @	(84)	[84.034]	29 @	(74)	[74.074]	24 @	(78)	[78.125]	22 @	(75)	[74.627]
Thallium	ND	(8.4)	[84.034]	ND	(7.4)	[74.074]	ND	(7.8)	[78.125]	ND	(7.5)	[74.627]
Vanadium	14	(1.7)	[84.034]	6.6 @	(1.5)	[74.074]	5.2 @	(1.6)	[78.125]	5 @	(1.5)	[74.627]
Zinc	6.9 @	(1.7)	[84.034]	4.3 @	(1.5)	[74.074]	4.2 @	(1.6)	[78.125]	4 @	(1.5)	[74.627]
SW7060 - Arsenic (mg/kg)												
Arsenic	1.7	(0.29)	[72.150]	0.63 @	(0.28)	[69.558]	0.97 @	(0.3)	[75.030]	0.89 @	(0.32)	[79.858]

Compiled: 8 F ry 1994 () = Reporting Limit [] = Factor = Not Detected NA = Not Applicable

TABLE B2 RESULTS OF INORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE BG CAN97-BG-10 44 - 46			NONE BG CAN97-BG-11 51 - 53			NONE BG CAN97-BG-12 56 - 58			NONE BG CAN97-BG-13 59 - 61		
SW7421 - Lead (mg/kg)												
Lead	2.2	(0.22)	[72.150]	1.2	(0.21)	[69.558]	1.6	(0.23)	[75.030]	1.5	(0.24)	[79.858]
SW7471 - Mercury (mg/kg)												
Mercury	0.034 @	(0.041)	[225.469]	0.041 @	(0.037)	[204.499]	0.027 @	(0.048)	[268.528]	0.037 @	(0.041)	[230.500]
SW7740 - Selenium (mg/kg)												
Selenium	ND	(0.36)	[72.150]	ND	(0.35)	[69.558]	ND	(0.38)	[75.030]	ND	(0.4)	[79.858]
Soil pH (pH units)												
pH	8.4	()	[1.000]	8.5	()	[1.000]	8.8	()	[1.000]	8.7	()	[1.000]

TABLE B2 RESULTS OF INORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE BG CAN97-BG-99 Dup of CAN97-BG-01 0 - 2			NONE BG CAN97-BG-02 4 - 6			NONE BG CAN97-BG-03 9 - 11			NONE BG CAN97-BG-04 17 - 19		
Percent moisture (%)												
Percent moisture	7.7	()	[1.000]	10	()	[1.000]	7.5	()	[1.000]	7.6	()	[1.000]
SW6010 - Metals (mg/kg)												
Aluminum	8900	(14)	[71.429]	11000	(16)	[81.967]	7200	(16)	[78.125]	5800	(15)	[73.529]
Antimony	ND	(29)	[285.714]	ND	(66)	[656.000]	ND	(31)	[312.500]	ND	(59)	[588.000]
Arsenic	5.7 @	(21)	[71.429]	ND	(25)	[81.967]	4.3 @	(23)	[78.125]	0.44 @	(22)	[73.529]
Barium	160	(0.71)	[71.429]	300	(0.82)	[81.967]	96	(0.78)	[78.125]	150	(0.74)	[73.529]
Beryllium	0.34 @	(0.14)	[71.429]	0.48 @	(0.16)	[81.967]	0.31 @	(0.16)	[78.125]	0.19 @	(0.15)	[73.529]
Cadmium	ND	(0.36)	[71.429]	0.3 @	(0.41)	[81.967]	0.28 @	(0.39)	[78.125]	0.2 @	(0.37)	[73.529]
Calcium	95000	(290)	[285.714]	180000	(660)	[656.000]	100000	(310)	[312.500]	220000	(590)	[588.000]
Chromium	7.2	(0.71)	[71.429]	6.5	(0.82)	[81.967]	5.5	(0.78)	[78.125]	4	(0.74)	[73.529]
Cobalt	3 @	(0.71)	[71.429]	2.2 @	(0.82)	[81.967]	1.9 @	(0.78)	[78.125]	1.6 @	(0.74)	[73.529]
Copper	4.8 @	(1.4)	[71.429]	3.4 @	(1.6)	[81.967]	2.1 @	(1.6)	[78.125]	1.7 @	(1.5)	[73.529]
Iron	6300	(3.6)	[71.429]	6000	(4.1)	[81.967]	4600	(3.9)	[78.125]	3200	(3.7)	[73.529]
Lead	0.95 @	(3.6)	[71.429]	ND	(4.1)	[81.967]	ND	(3.9)	[78.125]	ND	(3.7)	[73.529]
Magnesium	2400	(71)	[71.429]	3400	(82)	[81.967]	2600	(78)	[78.125]	2900	(74)	[73.529]
Manganese	140	(0.71)	[71.429]	48	(0.82)	[81.967]	43	(0.78)	[78.125]	25	(0.74)	[73.529]
Molybdenum	0.41 @	(3.6)	[71.429]	0.13 @	(4.1)	[81.967]	0.3 @	(3.9)	[78.125]	0.075 @	(3.7)	[73.529]
Nickel	11 @	(5.7)	[285.714]	7.6 @	(1.6)	[81.967]	9.6 @	(6.2)	[312.500]	5 @	(1.5)	[73.529]
Potassium	1500	(210)	[71.429]	1700	(250)	[81.967]	1600	(230)	[78.125]	1200	(220)	[73.529]
Selenium	ND	(21)	[71.429]	ND	(25)	[81.967]	ND	(23)	[78.125]	ND	(22)	[73.529]
Silver	ND	(0.71)	[71.429]	ND	(0.82)	[81.967]	ND	(0.78)	[78.125]	ND	(0.74)	[73.529]
Sodium	45 @	(71)	[71.429]	100 @	(82)	[81.967]	210 @	(78)	[78.125]	200 @	(74)	[73.529]
Thallium	1.2 @	(7.1)	[71.429]	2.2 @	(8.2)	[81.967]	ND	(7.8)	[78.125]	ND	(7.4)	[73.529]
Vanadium	16	(1.4)	[71.429]	17	(1.6)	[81.967]	11	(1.6)	[78.125]	9	(1.5)	[73.529]
Zinc	15	(1.4)	[71.429]	15	(1.6)	[81.967]	12	(1.6)	[78.125]	8.7	(1.5)	[73.529]
SW7041 - Antimony by AA (mg/kg)												
Antimony	NA			0.069 @	(0.52)	[86.806]	NA			0.0079 @	(0.47)	[78.996]

Compiled: 8 ary 1994 () = Reporting Limit [] = Factor) = Not Detected NA = Not Applicable

TABLE B2 RESULTS OF INORGANIC ANALYSES FOR SOIL SAMPLES, CANNON LANDFILL 25.

PARAMETER	SITE ID LOCATION ID SAMPLE ID BEG. DEPTH - END DEPTH (FT.)											
	NONE BG CAN97-BG-99 Dup of CAN97-BG-01 0 - 2			NONE BG CAN97-BG-02 4 - 6			NONE BG CAN97-BG-03 9 - 11			NONE BG CAN97-BG-04 17 - 18		
SW7060 - Arsenic (mg/kg)												
Arsenic	5.3	(0.34)	[83.986]	6.9	(0.6)	[150.150]	3.4	(0.3)	[75.075]	4	(0.33)	[83.250]
SW7421 - Lead (mg/kg)												
Lead	8.6	(1)	[335.945]	4.2	(0.23)	[75.075]	3.7	(0.23)	[75.075]	2.6	(0.25)	[83.250]
SW7471 - Mercury (mg/kg)												
Mercury	0.024 @	(0.049)	[270.856]	0.061 @	(0.053)	[292.398]	0.043 @	(0.051)	[284.495]	0.062 @	(0.046)	[257.679]
SW7740 - Selenium (mg/kg)												
Selenium	0.49 @	(0.42)	[83.986]	0.73 @	(0.38)	[75.075]	0.78 @	(0.38)	[75.075]	0.49 @	(0.42)	[83.250]
Soil pH (pH units)												
pH	8.4	()	[1.000]	8.5	()	[1.000]	8.6	()	[1.000]	8.3	()	[1.000]

APPENDIX C

COPIES OF ORIGINAL LABORATORY REPORT

Appendix C
Table of Contents

Trench No.	Page No.
Trench 1	1
Trench 2	3
Trench 3	29
Trench 4	55
Trench 5	57
Trench 5QC	83
Trench 6	95
Trench 7	97
Trench 8	117
Background Trench	125
Rinsate	143
Chain of Custody Forms	153

CANNON AFB
ASBESTOS SAMPLE ANALYSIS
SWDED-GL REPORT NO. 15263

1. REFERENCE: Reference is made to Tulsa Test Request MIL 90-113 requesting testing of possible asbestos samples.

2. SAMPLES: On December 5 and 10, 1990 nine bulk samples were received for analysis by Polarized Light Microscopy.

SWD LAB NO.	FIELD SAMPLE NO.	LOCATION	TOTAL VOLUME (liters)
A-1413	T-101	Rubble Pile - Trench 1	N/A
A-1414	T-301	Rubble Pile - Trench 3	N/A
A-1417	T-201	Rubble Pile - Trench 2	N/A
A-1418	T-401	Rubble Pile - Trench 4	N/A
A-1419	T-501	Rubble Pile - Trench 5	N/A
A-1420	T-501QC	Rubble Pile - Trench 5	N/A
A-1421	T-601	Rubble Pile - Trench 6	N/A
A-1422	T-701	Rubble Pile - Trench 7	N/A
A-1423	T-801	Rubble Pile - Trench 8	N/A

3. RESULTS OF PLM ANALYSIS:

SWD LAB NO.	FIELD SAMPLE NO.	TYPE MATERIAL	ASBESTOS TYPE	PERCENT ASBESTOS
→ A-1413	T-101	Soil	Actinolite	Trace
A-1414	T-301	Soil	None	Detected
A-1417	T-201	Soil	None	Detected
A-1418	T-401	Soil	None	Detected
A-1419	T-501	Soil	None	Detected
A-1420	T-501QC	Soil	None	Detected
A-1421	T-601	Soil	None	Detected
A-1422	T-701	Soil	None	Detected
A-1423	T-801	Soil	None	Detected

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DATE RECEIVED: 5-DEC-1990

REPORT NUMBER: D90-30984
REPORT DATE: 3-JAN-1991

SAMPLE SUBMITTED BY: US Army Corp of Engineers
ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Janice Stewart

SAMPLE MATRIX: SOIL
ID MARKS: T-102 0-3892

TEST REQUESTED	DETECTION LIMIT			RESULTS	
PCB by EPA Method 8080					
Arochlor 1016	0.1	mg/Kg	<	0.1	mg/Kg
Arochlor 1221	0.1	mg/Kg	<	0.1	mg/Kg
Arochlor 1232	0.1	mg/Kg	<	0.1	mg/Kg
Arochlor 1242	0.1	mg/Kg	<	0.1	mg/Kg
Arochlor 1248	0.1	mg/Kg	<	0.1	mg/Kg
Arochlor 1254	0.1	mg/Kg	<	0.1	mg/Kg
Arochlor 1260	0.1	mg/Kg	<	0.1	mg/Kg

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David R. Godwin, Ph.D.
Chief Executive Officer

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CANNON AFB
ASBESTOS SAMPLE ANALYSIS
SWDED-GL REPORT NO. 15263

1. REFERENCE: Reference is made to Tulsa Test Request MIL 90-113 requesting testing of possible asbestos samples.

2. SAMPLES: On December 5 and 10, 1990 nine bulk samples were received for analysis by Polarized Light Microscopy.

SWD LAB NO.	FIELD SAMPLE NO.	LOCATION	TOTAL VOLUME (liters)
A-1413	T-101	Rubble Pile - Trench 1	N/A
A-1414	T-301	Rubble Pile - Trench 3	N/A
A-1417	T-201	Rubble Pile - Trench 2	N/A
A-1418	T-401	Rubble Pile - Trench 4	N/A
A-1419	T-501	Rubble Pile - Trench 5	N/A
A-1420	T-501QC	Rubble Pile - Trench 5	N/A
A-1421	T-601	Rubble Pile - Trench 6	N/A
A-1422	T-701	Rubble Pile - Trench 7	N/A
A-1423	T-801	Rubble Pile - Trench 8	N/A

3. RESULTS OF PLM ANALYSIS:

SWD LAB NO.	FIELD SAMPLE NO.	TYPE MATERIAL	ASBESTOS TYPE	PERCENT ASBESTOS
A-1413	T-101	Soil	Actinolite	Trace
A-1414	T-301	Soil	None	Detected
A-1417	T-201	Soil	None	Detected
A-1418	T-401	Soil	None	Detected
A-1419	T-501	Soil	None	Detected
A-1420	T-501QC	Soil	None	Detected
A-1421	T-601	Soil	None	Detected
A-1422	T-701	Soil	None	Detected
A-1423	T-801	Soil	None	Detected

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DATE RECEIVED: 6-DEC-1990

REPORT NUMBER: D90-31110
REPORT DATE: 3-JAN-1991

SAMPLE SUBMITTED BY: US Army Corp of Engineers
ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Cathy Hutchins

SAMPLE MATRIX: SOIL
ID MARKS: T202 0-3912

TEST REQUESTED	DETECTION LIMIT			RESULTS	
PCB by EPA Method 8080					
Arochlor 1016	0.1	mg/Kg	<	0.1	mg/Kg
Arochlor 1221	0.1	mg/Kg	<	0.1	mg/Kg
Arochlor 1232	0.1	mg/Kg	<	0.1	mg/Kg
Arochlor 1242	0.1	mg/Kg	<	0.1	mg/Kg
Arochlor 1248	0.1	mg/Kg	<	0.1	mg/Kg
Arochlor 1254	0.1	mg/Kg	<	0.1	mg/Kg
Arochlor 1260	0.1	mg/Kg	<	0.1	mg/Kg

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DATE RECEIVED: 6-DEC-1990

REPORT NUMBER: D90-31111
REPORT DATE: 3-JAN-1991

SAMPLE SUBMITTED BY: US Army Corp of Engineers
ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Cathy Hutchins

SAMPLE MATRIX: SOIL
ID MARKS: T203 0-3913

TEST REQUESTED	DETECTION LIMIT			RESULTS	
EPA 8270 TCLP - Extractable Organics					
o-Cresol	0.04	mg/L	<	0.04	mg/L
m-Cresol	0.04	mg/L	<	0.04	mg/L
p-Cresol	0.04	mg/L	<	0.04	mg/L
2,4-Dinitrotoluene	0.02	mg/L	<	0.02	mg/L
Hexachlorobenzene	0.02	mg/L	<	0.02	mg/L
Hexachlorobutadiene	0.02	mg/L	<	0.02	mg/L
Hexachloroethane	0.02	mg/L	<	0.02	mg/L
Nitrobenzene	0.02	mg/L	<	0.02	mg/L
Pentachlorophenol	0.10	mg/L	<	0.10	mg/L
Pyridine	0.02	mg/L	<	0.02	mg/L
2,4,5-Trichlorophenol	0.02	mg/L	<	0.02	mg/L
2,4,6-Trichlorophenol	0.02	mg/L	<	0.02	mg/L

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE LEVEL(µg/L)	PERCENT RECOVERED
Nitrobenzene-d5(SS)	50	70.1
2-Fluorobiphenyl(SS)	50	74.3
Terphenyl-d14(SS)	50	77.4
Phenol-d6(SS)	100	58.4
2-Fluorophenol(SS)	100	61.8
2,4,6-Tribromophenol(SS)	100	53.0

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DATE RECEIVED: 6-DEC-1990

REPORT NUMBER: D90-31111
REPORT DATE: 3-JAN-1991

SAMPLE SUBMITTED BY: US Army Corp of Engineers
ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Cathy Hutchins

SAMPLE MATRIX: SOIL
ID MARKS: T203 0-3913

TEST REQUESTED	DETECTION LIMIT			RESULTS	
EPA 8240 TCLP - Volatile Organics					
Benzene	0.01	mg/L	<	0.01	mg/L
Carbon tetrachloride	0.01	mg/L	<	0.01	mg/L
Chlorobenzene	0.01	mg/L	<	0.01	mg/L
Chloroform	0.01	mg/L	<	0.01	mg/L
1,4-Dichlorobenzene	0.01	mg/L	<	0.01	mg/L
1,2-Dichloroethane	0.01	mg/L	<	0.01	mg/L
1,1-Dichloroethene	0.01	mg/L	<	0.01	mg/L
Methyl ethyl ketone	0.05	mg/L	<	0.05	mg/L
Tetrachloroethene	0.01	mg/L	<	0.01	mg/L
Trichloroethene	0.01	mg/L	<	0.01	mg/L
Vinyl chloride	0.02	mg/L	<	0.02	mg/L

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE LEVEL(µg/L)	PERCENT RECOVERED
1,2-Dichloroethane-d4(SS)	50	106
Toluene-d8(SS)	50	94.2
Bromofluorobenzene(SS)	50	98.6

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REPORT NUMBER: D90-31111
REPORT DATE: 3-JAN-1991

SAMPLE SUBMITTED BY: US Army Corp of Engineers
ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Cathy Hutchins

SAMPLE MATRIX: SOIL
ID MARKS: T203 0-3913

TEST REQUESTED	DETECTION LIMIT		RESULTS		
TCLP Herbicides					
2,4-D	5.0	mg/L	<	5.0	mg/L
2,4,5-TP Silvex	0.5	mg/L	<	0.5	mg/L

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SAMPLE SUBMITTED BY: US Army Corp of Engineers
ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Cathy Hutchins

SAMPLE MATRIX: SOIL
ID MARKS: T203 0-3913

TEST REQUESTED	DETECTION LIMIT		RESULTS		
TCLP Pesticides					
Chlordane	0.014	mg/L	<	0.014	mg/L
Heptachlor	0.0010	mg/L	<	0.0010	mg/L
Heptachlor epoxide	0.0010	mg/L	<	0.0010	mg/L
Endrin	0.006	mg/L	<	0.006	mg/L
Lindane	0.004	mg/L	<	0.004	mg/L
Methoxychlor	0.18	mg/L	<	0.18	mg/L
Toxaphene	0.24	mg/L	<	0.24	mg/L

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REPORT DATE: 3-JAN-1991

SAMPLE SUBMITTED BY: US Army Corp of Engineers
ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Cathy Hutchins

SAMPLE MATRIX: SOIL
ID MARKS: T203 0-3913

TEST REQUESTED	DETECTION LIMIT		RESULTS		
TCLP METALS:					
Silver	0.01	mg/L	<	0.01	mg/L
Arsenic	0.05	mg/L	<	0.05	mg/L
Barium	0.1	mg/L		0.8	mg/L
Cadmium	0.01	mg/L	<	0.01	mg/L
Chromium	0.05	mg/L	<	0.05	mg/L
Mercury	0.001	mg/L		0.002	mg/L
Lead	0.02	mg/L	<	0.02	mg/L
Selenium	0.05	mg/L	<	0.05	mg/L

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DATE RECEIVED: 6-DEC-1990

REPORT NUMBER: D90-31112
REPORT DATE: 3-JAN-1991

SAMPLE SUBMITTED BY: US Army Corp of Engineers
ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Cathy Hutchins

SAMPLE MATRIX: SOIL
ID MARKS: T204 0-3914

TEST REQUESTED	DETECTION LIMIT			RESULTS	
EPA 8240 Volatile Organics					
Acrolein	10.0	µg/Kg	<	10.0	µg/Kg
Acrylonitrile	10.0	µg/Kg	<	10.0	µg/Kg
Benzene	5.0	µg/Kg	<	5.0	µg/Kg
Bromodichloromethane	5.0	µg/Kg	<	5.0	µg/Kg
Bromoform	5.0	µg/Kg	<	5.0	µg/Kg
Bromomethane	10.0	µg/Kg	<	10.0	µg/Kg
Carbon tetrachloride	5.0	µg/Kg	<	5.0	µg/Kg
Chlorobenzene	5.0	µg/Kg	<	5.0	µg/Kg
Chlorodibromomethane	5.0	µg/Kg	<	5.0	µg/Kg
Chloroethane	10.0	µg/Kg	<	10.0	µg/Kg
2-Chloroethyvinyl ether	10.0	µg/Kg	<	10.0	µg/Kg
Chloroform	5.0	µg/Kg	<	5.0	µg/Kg
Chloromethane	10.0	µg/Kg	<	10.0	µg/Kg
1,2-Dichlorobenzene	5.0	µg/Kg	<	5.0	µg/Kg
1,3-Dichlorobenzene	5.0	µg/Kg	<	5.0	µg/Kg
1,4-Dichlorobenzene	5.0	µg/Kg	<	5.0	µg/Kg
1,1-Dichloroethane	5.0	µg/Kg	<	5.0	µg/Kg
1,2-Dichloroethane	5.0	µg/Kg	<	5.0	µg/Kg
1,1-Dichloroethene	5.0	µg/Kg	<	5.0	µg/Kg
trans-1,2-Dichloroethene	5.0	µg/Kg	<	5.0	µg/Kg
1,2-Dichloropropane	5.0	µg/Kg	<	5.0	µg/Kg
cis-1,3-Dichloropropene	5.0	µg/Kg	<	5.0	µg/Kg
trans-1,3 Dichloropropene	5.0	µg/Kg	<	5.0	µg/Kg
Ethylbenzene	5.0	µg/Kg	<	5.0	µg/Kg
Methylene chloride	10.0	µg/Kg	<	10.0	µg/Kg
1,1,2,2-Tetrachloroethane	5.0	µg/Kg	<	5.0	µg/Kg
Tetrachloroethene	5.0	µg/Kg	<	5.0	µg/Kg
Toluene	5.0	µg/Kg	<	5.0	µg/Kg
1,1,1-Trichloroethane	5.0	µg/Kg	<	5.0	µg/Kg
1,1,2-Trichloroethane	5.0	µg/Kg	<	5.0	µg/Kg

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REPORT NUMBER: D90-31112

TEST REQUESTED	DETECTION LIMIT			RESULTS	
EPA 8240 (Continued) Volatile Organics					
Trichloroethene	5.0	µg/Kg	<	5.0	µg/Kg
Trichlorofluoromethane	10.0	µg/Kg	<	10.0	µg/Kg
Vinyl chloride	10.0	µg/Kg	<	10.0	µg/Kg
Xylenes	5.0	µg/Kg	<	5.0	µg/Kg

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE LEVEL(µg/Kg)	PERCENT RECOVERED
1,2-Dichloroethane-d4 (SS)	50	113
Toluene-d8 (SS)	50	114
Bromofluorobenzene (SS)	50	77.0

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Chief Executive Officer

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DATE RECEIVED: 6-DEC-1990

REPORT NUMBER: D90-31112
REPORT DATE: 3-JAN-1991

SAMPLE SUBMITTED BY: US Army Corp of Engineers
ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Cathy Hutchins

SAMPLE MATRIX: SOIL
ID MARKS: T204 0-3914

TEST REQUESTED	DETECTION LIMIT			RESULTS	
EPA 8270 Acid Extractable Organics					
4-Chloro-3-methylphenol	660	µg/Kg	<	660	µg/Kg
2-Chlorophenol	660	µg/Kg	<	660	µg/Kg
2,4-Dichlorophenol	660	µg/Kg	<	660	µg/Kg
2,4-Dimethylphenol	660	µg/Kg	<	660	µg/Kg
4,6-Dinitro-2-methylphenol	660	µg/Kg	<	660	µg/Kg
2,4-Dinitrophenol	3300	µg/Kg	<	3300	µg/Kg
2-Methylphenol	660	µg/Kg	<	660	µg/Kg
2-Nitrophenol	660	µg/Kg	<	660	µg/Kg
4-Nitrophenol	3300	µg/Kg	<	3300	µg/Kg
Pentachlorophenol	3300	µg/Kg	<	3300	µg/Kg
Phenol	660	µg/Kg	<	660	µg/Kg
2,4,6-Trichlorophenol	660	µg/Kg	<	660	µg/Kg

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE LEVEL(µg/Kg)	PERCENT RECOVERED
Phenol-d5 (SS)	100	40.7
2-Fluorophenol (SS)	100	46.4
2,4,6-Tribromophenol (SS)	100	32.4

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Chief Executive Officer

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DATE RECEIVED: 6-DEC-1990

REPORT NUMBER: D90-31112
REPORT DATE: 3-JAN-1991

SAMPLE SUBMITTED BY: US Army Corp of Engineers
ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Cathy Hutchins

SAMPLE MATRIX: SOIL
ID MARKS: T204 0-3914

TEST REQUESTED	DETECTION LIMIT			RESULTS	
EPA 8270 Base-Neutral Extractable Organics					
Acenaphthene	660	µg/Kg	<	660	µg/Kg
Acenaphthylene	660	µg/Kg	<	660	µg/Kg
Anthracene	660	µg/Kg	<	660	µg/Kg
Benzidine	660	µg/Kg	<	660	µg/Kg
Benzo(a)anthracene	660	µg/Kg	<	660	µg/Kg
Benzo(b)fluoranthene	660	µg/Kg	<	660	µg/Kg
Benzo(k)fluoranthene	660	µg/Kg	<	660	µg/Kg
Benzo(g,h,i)perylene	660	µg/Kg	<	660	µg/Kg
Benzo(a)pyrene	660	µg/Kg	<	660	µg/Kg
Bis(2-chloroethoxy)methane	660	µg/Kg	<	660	µg/Kg
Bis(2-chloroethyl)ether	660	µg/Kg	<	660	µg/Kg
Bis(2-chloroisopropyl)ether	660	µg/Kg	<	660	µg/Kg
Bis(2-ethylhexyl)phthalate	660	µg/Kg		3400	µg/Kg
4-Bromophenylphenyl ether	660	µg/Kg	<	660	µg/Kg
Butyl benzyl phthalate	660	µg/Kg	<	660	µg/Kg
2-Chloronaphthalene	660	µg/Kg	<	660	µg/Kg
4-Chlorophenylphenyl ether	660	µg/Kg	<	660	µg/Kg
Chrysene	660	µg/Kg	<	660	µg/Kg
Dibenz(a,h)anthracene	660	µg/Kg	<	660	µg/Kg
Di-n-butylphthalate	660	µg/Kg	<	660	µg/Kg
1,3-Dichlorobenzene	660	µg/Kg	<	660	µg/Kg
1,4-Dichlorobenzene	660	µg/Kg	<	660	µg/Kg
1,2-Dichlorobenzene	660	µg/Kg	<	660	µg/Kg
3,3'-Dichlorobenzidine	1300	µg/Kg	<	1300	µg/Kg
Diethylphthalate	660	µg/Kg	<	660	µg/Kg
Dimethylphthalate	660	µg/Kg	<	660	µg/Kg
2,4-Dinitrotoluene	660	µg/Kg	<	660	µg/Kg
2,6-Dinitrotoluene	660	µg/Kg	<	660	µg/Kg
Di-n-octylphthalate	660	µg/Kg	<	660	µg/Kg
Fluoranthene	660	µg/Kg	<	660	µg/Kg

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REPORT NUMBER: D90-31112

TEST REQUESTED	DETECTION LIMIT			RESULTS	
EPA 8270 (Continued) Base-Neutral Extractable Organics					
Fluorene	660	µg/Kg	<	660	µg/Kg
Hexachlorobenzene	660	µg/Kg	<	660	µg/Kg
Hexachlorobutadiene	660	µg/Kg	<	660	µg/Kg
Hexachlorocyclobutandiene	660	µg/Kg	<	660	µg/Kg
Hexachloroethane	660	µg/Kg	<	660	µg/Kg
Indeno(1,2,3-cd)pyrene	660	µg/Kg	<	660	µg/Kg
Isophorone	660	µg/Kg	<	660	µg/Kg
Naphthalene	660	µg/Kg	<	660	µg/Kg
Nitrobenzene	660	µg/Kg	<	660	µg/Kg
N-Nitrosodimethylamine	660	µg/Kg	<	660	µg/Kg
N-Nitrosodiphenylamine	660	µg/Kg	<	660	µg/Kg
N-Nitrosodipropylamine	660	µg/Kg	<	660	µg/Kg
Phenanthrene	660	µg/Kg	<	660	µg/Kg
Pyrene	660	µg/Kg	<	660	µg/Kg
1,2,4-Trichlorobenzene	660	µg/Kg	<	660	µg/Kg

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE LEVEL(µg/Kg)	PERCENT RECOVERED
Nitrobenzene-d5 (SS)	50	49.9
2-Fluorobenzene (SS)	50	63.8
Terphenyl-d14 (SS)	50	74.5

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DATE RECEIVED: 6-DEC-1990

REPORT NUMBER: D90-31112
REPORT DATE: 3-JAN-1991

SAMPLE SUBMITTED BY: US Army Corp of Engineers
ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Cathy Hutchins

SAMPLE MATRIX: SOIL
ID MARKS: T204 0-3914

TENTATIVELY IDENTIFIED COMPOUNDS

COMPOUND	RETENTION TIME	FRACTION	RESULTS	
Tentatively Identified Compounds - ABN				
No compounds detected		ABN	660	µg/Kg

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DATE RECEIVED: 6-DEC-1990

REPORT NUMBER: D90-31112
REPORT DATE: 3-JAN-1991

SAMPLE SUBMITTED BY: US Army Corp of Engineers
ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Cathy Hutchins

SAMPLE MATRIX: SOIL
ID MARKS: T204 0-3914

TENTATIVELY IDENTIFIED COMPOUNDS

COMPOUND	RETENTION TIME	FRACTION	RESULTS	
Tentatively Identified Compounds - VOA				
No compounds detected		VOA	10	µg/Kg

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16

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DATE RECEIVED: 6-DEC-1990

REPORT NUMBER: D90-31112
REPORT DATE: 7-JAN-1991

SAMPLE SUBMITTED BY: US Army Corp of Engineers
ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Cathy Hutchins

SAMPLE MATRIX: SOIL
ID MARKS: T204 0-3914

TEST REQUESTED	DETECTION LIMIT			RESULTS	
Organochlorine Pesticides and PCB's					
Aldrin	27	µg/Kg	<	27	µg/Kg
Alpha-BHC	20	µg/Kg	<	20	µg/Kg
Beta-BHC	40	µg/Kg	<	40	µg/Kg
Delta-BHC	60	µg/Kg	<	60	µg/Kg
Gamma-BHC(Lindane)	26	µg/Kg	<	26	µg/Kg
Chlordane	93	µg/Kg	<	93	µg/Kg
4,4'-DDD	73	µg/Kg	<	73	µg/Kg
4,4'-DDE	26	µg/Kg	<	26	µg/Kg
4,4'-DDT	80	µg/Kg	<	80	µg/Kg
Dieldrin	13	µg/Kg	<	13	µg/Kg
Endosulfan I	93	µg/Kg	<	93	µg/Kg
Endosulfan II	26	µg/Kg	<	26	µg/Kg
Endosulfan Sulfate	442	µg/Kg	<	442	µg/Kg
Endrin	40	µg/Kg	<	40	µg/Kg
Endrin Aldehyde	154	µg/Kg	<	154	µg/Kg
Heptachlor	20	µg/Kg	<	20	µg/Kg
Heptachlor Epoxide	556	µg/Kg	<	556	µg/Kg
Methoxychlor	1210	µg/Kg	<	1210	µg/Kg
Toxaphene	1610	µg/Kg	<	1610	µg/Kg
Arochlor-1016	67	µg/Kg	<	67	µg/Kg
Arochlor-1221	67	µg/Kg	<	67	µg/Kg
Arochlor-1232	67	µg/Kg	<	67	µg/Kg
Arochlor-1242	67	µg/Kg	<	67	µg/Kg
Arochlor-1248	67	µg/Kg	<	67	µg/Kg
Arochlor-1254	67	µg/Kg	<	67	µg/Kg
Arochlor-1260	67	µg/Kg	<	67	µg/Kg

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DATE RECEIVED: 6-DEC-1990

REPORT NUMBER: D90-31113
REPORT DATE: 3-JAN-1991

SAMPLE SUBMITTED BY: US Army Corp of Engineers
ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Cathy Hutchins

SAMPLE MATRIX: SOIL
ID MARKS: T205 0-3915

TEST REQUESTED	DETECTION LIMIT		RESULTS		
TOTAL METALS:					
Silver	1.0	mg/Kg	<	1.0	mg/Kg
Arsenic	0.1	mg/Kg		2.4	mg/Kg
Barium	1.0	mg/Kg		63.9	mg/Kg
Beryllium	1.0	mg/Kg	<	1.0	mg/Kg
Cadmium	1.0	mg/Kg		1.8	mg/Kg
Cobalt	1.0	mg/Kg		3.1	mg/Kg
Chromium	1.0	mg/Kg		5.9	mg/Kg
Copper	1.0	mg/Kg		5.0	mg/Kg
Mercury	0.01	mg/Kg		0.03	mg/Kg
Manganese	1.0	mg/Kg		85.0	mg/Kg
Molybdenum	1.0	mg/Kg		28.0	mg/Kg
Nickel	1.0	mg/Kg		7.9	mg/Kg
Lead	1.0	mg/Kg	<	1.0	mg/Kg
Antimony	1.0	mg/Kg	<	1.0	mg/Kg
Selenium	0.1	mg/Kg	<	0.1	mg/Kg
Thallium	1.0	mg/Kg	<	1.0	mg/Kg
Vanadium	1.0	mg/Kg		12.8	mg/Kg
Zinc	1.0	mg/Kg		14.6	mg/Kg

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DATE RECEIVED: 6-DEC-1990

REPORT NUMBER: D90-31114
REPORT DATE: 3-JAN-1991

SAMPLE SUBMITTED BY: US Army Corp of Engineers
ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Cathy Hutchins

SAMPLE MATRIX: SOIL
ID MARKS: T206 0-3916

TEST REQUESTED	DETECTION LIMIT			RESULTS	
EPA 8240 Volatile Organics					
Acrolein	10.0	µg/Kg	<	10.0	µg/Kg
Acrylonitrile	10.0	µg/Kg	<	10.0	µg/Kg
Benzene	5.0	µg/Kg	<	5.0	µg/Kg
Bromodichloromethane	5.0	µg/Kg	<	5.0	µg/Kg
Bromoform	5.0	µg/Kg	<	5.0	µg/Kg
Bromomethane	10.0	µg/Kg	<	10.0	µg/Kg
Carbon tetrachloride	5.0	µg/Kg	<	5.0	µg/Kg
Chlorobenzene	5.0	µg/Kg	<	5.0	µg/Kg
Chlorodibromomethane	5.0	µg/Kg	<	5.0	µg/Kg
Chloroethane	10.0	µg/Kg	<	10.0	µg/Kg
2-Chloroethyvinyl ether	10.0	µg/Kg	<	10.0	µg/Kg
Chloroform	5.0	µg/Kg	<	5.0	µg/Kg
Chloromethane	10.0	µg/Kg	<	10.0	µg/Kg
1,2-Dichlorobenzene	5.0	µg/Kg	<	5.0	µg/Kg
1,3-Dichlorobenzene	5.0	µg/Kg	<	5.0	µg/Kg
1,4-Dichlorobenzene	5.0	µg/Kg	<	5.0	µg/Kg
1,1-Dichloroethane	5.0	µg/Kg	<	5.0	µg/Kg
1,2-Dichloroethane	5.0	µg/Kg	<	5.0	µg/Kg
1,1-Dichloroethene	5.0	µg/Kg	<	5.0	µg/Kg
trans-1,2-Dichloroethene	5.0	µg/Kg	<	5.0	µg/Kg
1,2-Dichloropropane	5.0	µg/Kg	<	5.0	µg/Kg
cis-1,3-Dichloropropene	5.0	µg/Kg	<	5.0	µg/Kg
trans-1,3 Dichloropropene	5.0	µg/Kg	<	5.0	µg/Kg
Ethylbenzene	5.0	µg/Kg	<	5.0	µg/Kg
Methylene chloride	10.0	µg/Kg	<	10.0	µg/Kg
1,1,2,2-Tetrachloroethane	5.0	µg/Kg	<	5.0	µg/Kg
Tetrachloroethene	5.0	µg/Kg	<	5.0	µg/Kg
Toluene	5.0	µg/Kg	<	5.0	µg/Kg
1,1,1-Trichloroethane	5.0	µg/Kg	<	5.0	µg/Kg
1,1,2-Trichloroethane	5.0	µg/Kg	<	5.0	µg/Kg

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REPORT NUMBER: D90-31114

TEST REQUESTED	DETECTION LIMIT			RESULTS	
EPA 8240 (Continued) Volatile Organics					
Trichloroethene	5.0	µg/Kg	<	5.0	µg/Kg
Trichlorofluoromethane	10.0	µg/Kg	<	10.0	µg/Kg
Vinyl chloride	10.0	µg/Kg	<	10.0	µg/Kg
Xylenes	5.0	µg/Kg	<	5.0	µg/Kg

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE LEVEL(µg/Kg)	PERCENT RECOVERED
1,2-Dichloroethane-d4 (SS)	50	100
Toluene-d8 (SS)	50	106
Bromofluorobenzene (SS)	50	85.1

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20

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DATE RECEIVED: 6-DEC-1990

REPORT NUMBER: D90-31114
REPORT DATE: 3-JAN-1991

SAMPLE SUBMITTED BY: US Army Corp of Engineers
ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Cathy Hutchins

SAMPLE MATRIX: SOIL
ID MARKS: T206 0-3916

TEST REQUESTED	DETECTION LIMIT			RESULTS	
EPA 8270 Acid Extractable Organics					
4-Chloro-3-methylphenol	660	µg/Kg	<	660	µg/Kg
2-Chlorophenol	660	µg/Kg	<	660	µg/Kg
2,4-Dichlorophenol	660	µg/Kg	<	660	µg/Kg
2,4-Dimethylphenol	660	µg/Kg	<	660	µg/Kg
4,6-Dinitro-2-methylphenol	660	µg/Kg	<	660	µg/Kg
2,4-Dinitrophenol	3300	µg/Kg	<	3300	µg/Kg
2-Methylphenol	660	µg/Kg	<	660	µg/Kg
2-Nitrophenol	660	µg/Kg	<	660	µg/Kg
4-Nitrophenol	3300	µg/Kg	<	3300	µg/Kg
Pentachlorophenol	3300	µg/Kg	<	3300	µg/Kg
Phenol	660	µg/Kg	<	660	µg/Kg
2,4,6-Trichlorophenol	660	µg/Kg	<	660	µg/Kg

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE LEVEL(µg/Kg)	PERCENT RECOVERED
Phenol-d5 (SS)	100	34.4
2-Fluorophenol (SS)	100	50.7
2,4,6-Tribromophenol (SS)	100	40.1

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SAMPLE SUBMITTED BY: US Army Corp of Engineers
ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Cathy Hutchins

SAMPLE MATRIX: SOIL
ID MARKS: T206 0-3916

TEST REQUESTED	DETECTION LIMIT			RESULTS	
EPA 8270 Base-Neutral Extractable Organics					
Acenaphthene	660	µg/Kg	<	660	µg/Kg
Acenaphthylene	660	µg/Kg	<	660	µg/Kg
Anthracene	660	µg/Kg	<	660	µg/Kg
Benzidine	660	µg/Kg	<	660	µg/Kg
Benzo(a)anthracene	660	µg/Kg	<	660	µg/Kg
Benzo(b)fluoranthene	660	µg/Kg	<	660	µg/Kg
Benzo(k)fluoranthene	660	µg/Kg	<	660	µg/Kg
Benzo(g,h,i)perylene	660	µg/Kg	<	660	µg/Kg
Benzo(a)pyrene	660	µg/Kg	<	660	µg/Kg
Bis(2-chloroethoxy)methane	660	µg/Kg	<	660	µg/Kg
Bis(2-chloroethyl)ether	660	µg/Kg	<	660	µg/Kg
Bis(2-chloroisopropyl)ether	660	µg/Kg	<	660	µg/Kg
Bis(2-ethylhexyl)phthalate	660	µg/Kg	<	660	µg/Kg
4-Bromophenylphenyl ether	660	µg/Kg	<	660	µg/Kg
Butyl benzyl phthalate	660	µg/Kg	<	660	µg/Kg
2-Chloronaphthalene	660	µg/Kg	<	660	µg/Kg
4-Chlorophenylphenyl ether	660	µg/Kg	<	660	µg/Kg
Chrysene	660	µg/Kg	<	660	µg/Kg
Dibenz(a,h)anthracene	660	µg/Kg	<	660	µg/Kg
Di-n-butylphthalate	660	µg/Kg	<	660	µg/Kg
1,3-Dichlorobenzene	660	µg/Kg	<	660	µg/Kg
1,4-Dichlorobenzene	660	µg/Kg	<	660	µg/Kg
1,2-Dichlorobenzene	660	µg/Kg	<	660	µg/Kg
3,3'-Dichlorobenzidine	1300	µg/Kg	<	1300	µg/Kg
Diethylphthalate	660	µg/Kg	<	660	µg/Kg
Dimethylphthalate	660	µg/Kg	<	660	µg/Kg
2,4-Dinitrotoluene	660	µg/Kg	<	660	µg/Kg
2,6-Dinitrotoluene	660	µg/Kg	<	660	µg/Kg
Di-n-octylphthalate	660	µg/Kg	<	660	µg/Kg
Fluoranthene	660	µg/Kg	<	660	µg/Kg

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REPORT NUMBER: D90-31114

TEST REQUESTED	DETECTION LIMIT			RESULTS	
EPA 8270 (Continued) Base-Neutral Extractable Organics					
Fluorene	660	µg/Kg	<	660	µg/Kg
Hexachlorobenzene	660	µg/Kg	<	660	µg/Kg
Hexachlorobutadiene	660	µg/Kg	<	660	µg/Kg
Hexachlorocyclobutandiene	660	µg/Kg	<	660	µg/Kg
Hexachloroethane	660	µg/Kg	<	660	µg/Kg
Indeno(1,2,3-cd)pyrene	660	µg/Kg	<	660	µg/Kg
Isophorone	660	µg/Kg	<	660	µg/Kg
Naphthalene	660	µg/Kg	<	660	µg/Kg
Nitrobenzene	660	µg/Kg	<	660	µg/Kg
N-Nitrosodimethylamine	660	µg/Kg	<	660	µg/Kg
N-Nitrosodiphenylamine	660	µg/Kg	<	660	µg/Kg
N-Nitrosodipropylamine	660	µg/Kg	<	660	µg/Kg
Phenanthrene	660	µg/Kg	<	660	µg/Kg
Pyrene	660	µg/Kg	<	660	µg/Kg
1,2,4-Trichlorobenzene	660	µg/Kg	<	660	µg/Kg

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE LEVEL(µg/Kg)	PERCENT RECOVERED
Nitrobenzene-d5 (SS)	50	52.7
2-Fluorobenzene (SS)	50	90.4
Terphenyl-d14 (SS)	50	85.4

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Chief Executive Officer

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DATE RECEIVED: 6-DEC-1990

REPORT NUMBER: D90-31114
REPORT DATE: 3-JAN-1991

SAMPLE SUBMITTED BY: US Army Corp of Engineers
ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Cathy Hutchins

SAMPLE MATRIX: SOIL
ID MARKS: T206 0-3916

TENTATIVELY IDENTIFIED COMPOUNDS

COMPOUND	RETENTION TIME	FRACTION	RESULTS	
Tentatively Identified Compounds - ABN				
No compounds detected		ABN	660	µg/Kg

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REPORT NUMBER: D90-31114
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SAMPLE SUBMITTED BY: US Army Corp of Engineers
ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Cathy Hutchins

SAMPLE MATRIX: SOIL
ID MARKS: T206 0-3916

TENTATIVELY IDENTIFIED COMPOUNDS

COMPOUND	RETENTION TIME	FRACTION	RESULTS	
Tentatively Identified Compounds - VOA				
No compounds detected		VOA	10	µg/kg

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DATE RECEIVED: 6-DEC-1990

REPORT NUMBER: D90-31114
REPORT DATE: 7-JAN-1991

SAMPLE SUBMITTED BY: US Army Corp of Engineers
ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Cathy Hutchins

SAMPLE MATRIX: SOIL
ID MARKS: T206 0-3916

TEST REQUESTED	DETECTION LIMIT			RESULTS	
Organochlorine Pesticides and PCB's					
Aldrin	27	µg/Kg	<	27	µg/Kg
Alpha-BHC	20	µg/Kg	<	20	µg/Kg
Beta-BHC	40	µg/Kg	<	40	µg/Kg
Delta-BHC	60	µg/Kg	<	60	µg/Kg
Gamma-BHC(Lindane)	26	µg/Kg	<	26	µg/Kg
Chlordane	93	µg/Kg	<	93	µg/Kg
4,4'-DDD	73	µg/Kg	<	73	µg/Kg
4,4'-DDE	26	µg/Kg	<	26	µg/Kg
4,4'-DDT	80	µg/Kg	<	80	µg/Kg
Dieldrin	13	µg/Kg	<	13	µg/Kg
Endosulfan I	93	µg/Kg	<	93	µg/Kg
Endosulfan II	26	µg/Kg	<	26	µg/Kg
Endosulfan Sulfate	442	µg/Kg	<	442	µg/Kg
Endrin	40	µg/Kg	<	40	µg/Kg
Endrin Aldehyde	154	µg/Kg	<	154	µg/Kg
Heptachlor	20	µg/Kg	<	20	µg/Kg
Heptachlor Epoxide	556	µg/Kg	<	556	µg/Kg
Methoxychlor	1210	µg/Kg	<	1210	µg/Kg
Toxaphene	1610	µg/Kg	<	1610	µg/Kg
Arochlor-1016	67	µg/Kg	<	67	µg/Kg
Arochlor-1221	67	µg/Kg	<	67	µg/Kg
Arochlor-1232	67	µg/Kg	<	67	µg/Kg
Arochlor-1242	67	µg/Kg	<	67	µg/Kg
Arochlor-1248	67	µg/Kg	<	67	µg/Kg
Arochlor-1254	67	µg/Kg	<	67	µg/Kg
Arochlor-1260	67	µg/Kg	<	67	µg/Kg

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DATE RECEIVED: 6-DEC-1990

REPORT NUMBER: D90-31115
REPORT DATE: 3-JAN-1991

SAMPLE SUBMITTED BY: US Army Corp of Engineers
ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Cathy Hutchins

SAMPLE MATRIX: SOIL
ID MARKS: T207 0-3917

TEST REQUESTED	DETECTION LIMIT		RESULTS		
TOTAL METALS:					
Silver	1.0	mg/Kg	<	1.0	mg/Kg
Arsenic	0.1	mg/Kg		1.7	mg/Kg
Barium	1.0	mg/Kg		121	mg/Kg
Beryllium	1.0	mg/Kg	<	1.0	mg/Kg
Cadmium	1.0	mg/Kg		2.9	mg/Kg
Cobalt	1.0	mg/Kg		3.3	mg/Kg
Chromium	1.0	mg/Kg		9.6	mg/Kg
Copper	1.0	mg/Kg		4.5	mg/Kg
Mercury	0.01	mg/Kg		0.01	mg/Kg
Manganese	1.0	mg/Kg		57.0	mg/Kg
Molybdenum	1.0	mg/Kg		47.8	mg/Kg
Nickel	1.0	mg/Kg		7.1	mg/Kg
Lead	1.0	mg/Kg	<	1.0	mg/Kg
Antimony	1.0	mg/Kg	<	1.0	mg/Kg
Selenium	0.1	mg/Kg		1.6	mg/Kg
Thallium	1.0	mg/Kg	<	1.0	mg/Kg
Vanadium	1.0	mg/Kg		17.7	mg/Kg
Zinc	1.0	mg/Kg		19.6	mg/Kg

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CANNON AFB
ASBESTOS SAMPLE ANALYSIS
SWDED-GL REPORT NO. 15263

1. REFERENCE: Reference is made to Tulsa Test Request MIL 90-113 requesting testing of possible asbestos samples.

2. SAMPLES: On December 5 and 10, 1990 nine bulk samples were received for analysis by Polarized Light Microscopy.

SWD LAB NO.	FIELD SAMPLE NO.	LOCATION	TOTAL VOLUME (liters)
A-1413	T-101	Rubble Pile - Trench 1	N/A
A-1414	T-301	Rubble Pile - Trench 3	N/A
A-1417	T-201	Rubble Pile - Trench 2	N/A
A-1418	T-401	Rubble Pile - Trench 4	N/A
A-1419	T-501	Rubble Pile - Trench 5	N/A
A-1420	T-501QC	Rubble Pile - Trench 5	N/A
A-1421	T-601	Rubble Pile - Trench 6	N/A
A-1422	T-701	Rubble Pile - Trench 7	N/A
A-1423	T-801	Rubble Pile - Trench 8	N/A

3. RESULTS OF PLM ANALYSIS:

SWD LAB NO.	FIELD SAMPLE NO.	TYPE MATERIAL	ASBESTOS TYPE	PERCENT ASBESTOS
A-1413	T-101	Soil		None Detected
A-1414	T-301	Soil	Actinolite	Trace
A-1417	T-201	Soil		None Detected
A-1418	T-401	Soil		None Detected
A-1419	T-501	Soil		None Detected
A-1420	T-501QC	Soil		None Detected
A-1421	T-601	Soil		None Detected
A-1422	T-701	Soil		None Detected
A-1423	T-801	Soil		None Detected

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DATE RECEIVED: 5-DEC-1990

REPORT NUMBER: D90-30985
REPORT DATE: 3-JAN-1991

SAMPLE SUBMITTED BY: US Army Corp of Engineers
ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Janice Stewart

SAMPLE MATRIX: SOIL
ID MARKS: T-302 0-3894

TEST REQUESTED	DETECTION LIMIT			RESULTS	
PCB by EPA Method 8080					
Arochlor 1016	0.1	mg/Kg	<	0.1	mg/Kg
Arochlor 1221	0.1	mg/Kg	<	0.1	mg/Kg
Arochlor 1232	0.1	mg/Kg	<	0.1	mg/Kg
Arochlor 1242	0.1	mg/Kg	<	0.1	mg/Kg
Arochlor 1248	0.1	mg/Kg	<	0.1	mg/Kg
Arochlor 1254	0.1	mg/Kg	<	0.1	mg/Kg
Arochlor 1260	0.1	mg/Kg	<	0.1	mg/Kg

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DATE RECEIVED: 5-DEC-1990

REPORT NUMBER: D90-30986
REPORT DATE: 3-JAN-1991

SAMPLE SUBMITTED BY: US Army Corp of Engineers
ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Janice Stewart

SAMPLE MATRIX: SOIL
ID MARKS: T-303 0-3895

TEST REQUESTED	DETECTION LIMIT			RESULTS	
EPA 8270 TCLP - Extractable Organics					
o-Cresol	0.08	mg/L	<	0.08	mg/L
m-Cresol	0.08	mg/L	<	0.08	mg/L
p-Cresol	0.08	mg/L	<	0.08	mg/L
2,4-Dinitrotoluene	0.04	mg/L	<	0.04	mg/L
Hexachlorobenzene	0.04	mg/L	<	0.04	mg/L
Hexachlorobutadiene	0.04	mg/L	<	0.04	mg/L
Hexachloroethane	0.04	mg/L	<	0.04	mg/L
Nitrobenzene	0.04	mg/L	<	0.04	mg/L
Pentachlorophenol	0.20	mg/L	<	0.20	mg/L
Pyridine	0.04	mg/L	<	0.04	mg/L
2,4,5-Trichlorophenol	0.04	mg/L	<	0.04	mg/L
2,4,6-Trichlorophenol	0.04	mg/L	<	0.04	mg/L

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE LEVEL(µg/L)	PERCENT RECOVERED
Nitrobenzene-d5(SS)	50	52.1
2-Fluorobiphenyl(SS)	50	68.9
Terphenyl-d14(SS)	50	82.9
Phenol-d6(SS)	100	23.8
2-Fluorophenol(SS)	100	35.3
2,4,6-Tribromophenol(SS)	100	59.5

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DATE RECEIVED: 5-DEC-1990

REPORT NUMBER: D90-30986
REPORT DATE: 3-JAN-1991

SAMPLE SUBMITTED BY: US Army Corp of Engineers
ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Janice Stewart

SAMPLE MATRIX: SOIL
ID MARKS: T-303 0-3895

TEST REQUESTED	DETECTION LIMIT			RESULTS	
EPA 8240 TCLP - Volatile Organics					
Benzene	0.01	mg/L	<	0.01	mg/L
Carbon tetrachloride	0.01	mg/L	<	0.01	mg/L
Chlorobenzene	0.01	mg/L	<	0.01	mg/L
Chloroform	0.01	mg/L	<	0.01	mg/L
1,4-Dichlorobenzene	0.01	mg/L	<	0.01	mg/L
1,2-Dichloroethane	0.01	mg/L	<	0.01	mg/L
1,1-Dichloroethene	0.01	mg/L	<	0.01	mg/L
Methyl ethyl ketone	0.05	mg/L	<	0.05	mg/L
Tetrachloroethene	0.01	mg/L	<	0.01	mg/L
Trichloroethene	0.01	mg/L	<	0.01	mg/L
Vinyl chloride	0.02	mg/L	<	0.02	mg/L

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE LEVEL(µg/L)	PERCENT RECOVERED
1,2-Dichloroethane-d4(SS)	50	114
Toluene-d8(SS)	50	98.5
Bromofluorobenzene(SS)	50	91.1

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REPORT NUMBER: D90-30986
REPORT DATE: 3-JAN-1991

SAMPLE SUBMITTED BY: US Army Corp of Engineers
ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Janice Stewart

SAMPLE MATRIX: SOIL
ID MARKS: T-303 0-3895

TEST REQUESTED	DETECTION LIMIT		RESULTS		
TCLP Herbicides					
2,4-D	5.0	mg/L	<	5.0	mg/L
2,4,5-TP Silvex	0.5	mg/L	<	0.5	mg/L

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ATTENTION: Ms. Janice Stewart

SAMPLE MATRIX: SOIL
ID MARKS: T-303 0-3895

TEST REQUESTED	DETECTION LIMIT		RESULTS		
TCLP Pesticides					
Chlordane	0.014	mg/L	<	0.014	mg/L
Heptachlor	0.0030	mg/L	<	0.0030	mg/L
Heptachlor epoxide	0.0830	mg/L	<	0.0830	mg/L
Endrin	0.006	mg/L	<	0.006	mg/L
Lindane	0.004	mg/L	<	0.004	mg/L
Methoxychlor	0.18	mg/L	<	0.18	mg/L
Toxaphene	0.24	mg/L	<	0.24	mg/L

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ATTENTION: Ms. Janice Stewart

SAMPLE MATRIX: SOIL
ID MARKS: T-303 0-3895

TEST REQUESTED	DETECTION LIMIT			RESULTS	
TCLP METALS:					
Silver	0.01	mg/L	<	0.01	mg/L
Arsenic	0.05	mg/L	<	0.05	mg/L
Barium	0.1	mg/L		1.3	mg/L
Cadmium	0.01	mg/L		0.01	mg/L
Chromium	0.05	mg/L	<	0.05	mg/L
Mercury	0.001	mg/L	<	0.001	mg/L
Lead	0.02	mg/L	<	0.02	mg/L
Selenium	0.05	mg/L	<	0.05	mg/L

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DATE RECEIVED: 5-DEC-1990

REPORT NUMBER: D90-30987
REPORT DATE: 3-JAN-1991

SAMPLE SUBMITTED BY: US Army Corp of Engineers
ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Janice Stewart

SAMPLE MATRIX: SOIL
ID MARKS: T-304 0-3896

TEST REQUESTED	DETECTION LIMIT			RESULTS	
EPA 8240 Volatile Organics					
Acrolein	10.0	µg/Kg	<	10.0	µg/Kg
Acrylonitrile	10.0	µg/Kg	<	10.0	µg/Kg
Benzene	5.0	µg/Kg	<	5.0	µg/Kg
Bromodichloromethane	5.0	µg/Kg	<	5.0	µg/Kg
Bromoform	5.0	µg/Kg	<	5.0	µg/Kg
Bromomethane	10.0	µg/Kg	<	10.0	µg/Kg
Carbon tetrachloride	5.0	µg/Kg	<	5.0	µg/Kg
Chlorobenzene	5.0	µg/Kg	<	5.0	µg/Kg
Chlorodibromomethane	5.0	µg/Kg	<	5.0	µg/Kg
Chloroethane	10.0	µg/Kg	<	10.0	µg/Kg
2-Chloroethyvinyl ether	10.0	µg/Kg	<	10.0	µg/Kg
Chloroform	5.0	µg/Kg	<	5.0	µg/Kg
Chloromethane	10.0	µg/Kg	<	10.0	µg/Kg
1,2-Dichlorobenzene	5.0	µg/Kg	<	5.0	µg/Kg
1,3-Dichlorobenzene	5.0	µg/Kg	<	5.0	µg/Kg
1,4-Dichlorobenzene	5.0	µg/Kg	<	5.0	µg/Kg
1,1-Dichloroethane	5.0	µg/Kg	<	5.0	µg/Kg
1,2-Dichloroethane	5.0	µg/Kg	<	5.0	µg/Kg
1,1-Dichloroethene	5.0	µg/Kg	<	5.0	µg/Kg
trans-1,2-Dichloroethene	5.0	µg/Kg	<	5.0	µg/Kg
1,2-Dichloropropane	5.0	µg/Kg	<	5.0	µg/Kg
cis-1,3-Dichloropropene	5.0	µg/Kg	<	5.0	µg/Kg
trans-1,3 Dichloropropene	5.0	µg/Kg	<	5.0	µg/Kg
Ethylbenzene	5.0	µg/Kg	<	5.0	µg/Kg
Methylene chloride	10.0	µg/Kg	<	10.0	µg/Kg
1,1,2,2-Tetrachloroethane	5.0	µg/Kg	<	5.0	µg/Kg
Tetrachloroethene	5.0	µg/Kg	<	5.0	µg/Kg
Toluene	5.0	µg/Kg	<	5.0	µg/Kg
1,1,1-Trichloroethane	5.0	µg/Kg	<	5.0	µg/Kg
1,1,2-Trichloroethane	5.0	µg/Kg	<	5.0	µg/Kg

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REPORT NUMBER: D90-30987

TEST REQUESTED	DETECTION LIMIT			RESULTS	
EPA 8240 (Continued) Volatile Organics					
Trichloroethene	5.0	µg/Kg	<	5.0	µg/Kg
Trichlorofluoromethane	10.0	µg/Kg	<	10.0	µg/Kg
Vinyl chloride	10.0	µg/Kg	<	10.0	µg/Kg
Xylenes	5.0	µg/Kg	<	5.0	µg/Kg

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE LEVEL(µg/Kg)	PERCENT RECOVERED
1,2-Dichloroethane-d4 (SS)	50	112
Toluene-d8 (SS)	50	98.6
Bromofluorobenzene (SS)	50	85.2

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DATE RECEIVED: 5-DEC-1990

REPORT NUMBER: D90-30987
REPORT DATE: 3-JAN-1991

SAMPLE SUBMITTED BY: US Army Corp of Engineers
ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Janice Stewart

SAMPLE MATRIX: SOIL
ID MARKS: T-304 0-3896

TEST REQUESTED	DETECTION LIMIT			RESULTS	
EPA 8270 Acid Extractable Organics					
4-Chloro-3-methylphenol	660	µg/Kg	<	660	µg/Kg
2-Chlorophenol	660	µg/Kg	<	660	µg/Kg
2,4-Dichlorophenol	660	µg/Kg	<	660	µg/Kg
2,4-Dimethylphenol	660	µg/Kg	<	660	µg/Kg
4,6-Dinitro-2-methylphenol	660	µg/Kg	<	660	µg/Kg
2,4-Dinitrophenol	3300	µg/Kg	<	3300	µg/Kg
2-Methylphenol	660	µg/Kg	<	660	µg/Kg
2-Nitrophenol	660	µg/Kg	<	660	µg/Kg
4-Nitrophenol	3300	µg/Kg	<	3300	µg/Kg
Pentachlorophenol	3300	µg/Kg	<	3300	µg/Kg
Phenol	660	µg/Kg	<	660	µg/Kg
2,4,6-Trichlorophenol	660	µg/Kg	<	660	µg/Kg

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE LEVEL(µg/Kg)	PERCENT RECOVERED
Phenol-d5 (SS)	100	74.3
2-Fluorophenol (SS)	100	70.2
2,4,6-Tribromophenol (SS)	100	50.3

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DATE RECEIVED: 5-DEC-1990

REPORT NUMBER: D90-30987
REPORT DATE: 3-JAN-1991

SAMPLE SUBMITTED BY: US Army Corp of Engineers
ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Janice Stewart

SAMPLE MATRIX: SOIL
ID MARKS: T-304 0-3896

TEST REQUESTED	DETECTION LIMIT			RESULTS	
EPA 8270 Base-Neutral Extractable Organics					
Acenaphthene	660	µg/Kg	<	660	µg/Kg
Acenaphthylene	660	µg/Kg	<	660	µg/Kg
Anthracene	660	µg/Kg	<	660	µg/Kg
Benzidine	660	µg/Kg	<	660	µg/Kg
Benzo(a)anthracene	660	µg/Kg	<	660	µg/Kg
Benzo(b)fluoranthene	660	µg/Kg	<	660	µg/Kg
Benzo(k)fluoranthene	660	µg/Kg	<	660	µg/Kg
Benzo(g,h,i)perylene	660	µg/Kg	<	660	µg/Kg
Benzo(a)pyrene	660	µg/Kg	<	660	µg/Kg
Bis(2-chloroethoxy)methane	660	µg/Kg	<	660	µg/Kg
Bis(2-chloroethyl)ether	660	µg/Kg	<	660	µg/Kg
Bis(2-chloroisopropyl)ether	660	µg/Kg	<	660	µg/Kg
Bis(2-ethylhexyl)phthalate	660	µg/Kg	<	660	µg/Kg
4-Bromophenylphenyl ether	660	µg/Kg	<	660	µg/Kg
Butyl benzyl phthalate	660	µg/Kg	<	660	µg/Kg
2-Chloronaphthalene	660	µg/Kg	<	660	µg/Kg
4-Chlorophenylphenyl ether	660	µg/Kg	<	660	µg/Kg
Chrysene	660	µg/Kg	<	660	µg/Kg
Dibenz(a,h)anthracene	660	µg/Kg	<	660	µg/Kg
Di-n-butylphthalate	660	µg/Kg	<	660	µg/Kg
1,3-Dichlorobenzene	660	µg/Kg	<	660	µg/Kg
1,4-Dichlorobenzene	660	µg/Kg	<	660	µg/Kg
1,2-Dichlorobenzene	660	µg/Kg	<	660	µg/Kg
3,3'-Dichlorobenzidine	1300	µg/Kg	<	1300	µg/Kg
Diethylphthalate	660	µg/Kg	<	660	µg/Kg
Dimethylphthalate	660	µg/Kg	<	660	µg/Kg
2,4-Dinitrotoluene	660	µg/Kg	<	660	µg/Kg
2,6-Dinitrotoluene	660	µg/Kg	<	660	µg/Kg
Di-n-octylphthalate	660	µg/Kg	<	660	µg/Kg
Fluoranthene	660	µg/Kg	<	660	µg/Kg

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REPORT NUMBER: D90-30987

TEST REQUESTED	DETECTION LIMIT			RESULTS	
EPA 8270 (Continued) Base-Neutral Extractable Organics					
Fluorene	660	µg/Kg	<	660	µg/Kg
Hexachlorobenzene	660	µg/Kg	<	660	µg/Kg
Hexachlorobutadiene	660	µg/Kg	<	660	µg/Kg
Hexachlorocyclobutandiene	660	µg/Kg	<	660	µg/Kg
Hexachloroethane	660	µg/Kg	<	660	µg/Kg
Indeno(1,2,3-cd)pyrene	660	µg/Kg	<	660	µg/Kg
Isophorone	660	µg/Kg	<	660	µg/Kg
Naphthalene	660	µg/Kg	<	660	µg/Kg
Nitrobenzene	660	µg/Kg	<	660	µg/Kg
N-Nitrosodimethylamine	660	µg/Kg	<	660	µg/Kg
N-Nitrosodiphenylamine	660	µg/Kg	<	660	µg/Kg
N-Nitrosodipropylamine	660	µg/Kg	<	660	µg/Kg
Phenanthrene	660	µg/Kg	<	660	µg/Kg
Pyrene	660	µg/Kg	<	660	µg/Kg
1,2,4-Trichlorobenzene	660	µg/Kg	<	660	µg/Kg

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE LEVEL(µg/Kg)	PERCENT RECOVERED
Nitrobenzene-d5 (SS)	50	62.3
2-Fluorobenzene (SS)	50	73.2
Terphenyl-d14 (SS)	50	81.9

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Chief Executive Officer

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DATE RECEIVED: 5-DEC-1990

REPORT NUMBER: D90-30987
REPORT DATE: 3-JAN-1991

SAMPLE SUBMITTED BY: US Army Corp of Engineers
ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Janice Stewart

SAMPLE MATRIX: SOIL
ID MARKS: T-304 0-3896

TENTATIVELY IDENTIFIED COMPOUNDS

COMPOUND	RETENTION TIME	FRACTION	RESULTS	
Tentatively Identified Compounds - ABN				
No compounds detected		ABN	660	µg/Kg

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SAMPLE MATRIX: SOIL
ID MARKS: T-304 0-3896

TENTATIVELY IDENTIFIED COMPOUNDS

COMPOUND	RETENTION TIME	FRACTION	RESULTS	
Tentatively Identified Compounds - VOA				
No compounds detected		VOA	10	µg/Kg

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ATTENTION: Ms. Janice Stewart

SAMPLE MATRIX: SOIL
ID MARKS: T-304 0-3896

TEST REQUESTED	DETECTION LIMIT			RESULTS	
Organochlorine Pesticides and PCB's					
Aldrin	2.7	µg/Kg	<	2.7	µg/Kg
Alpha-BHC	2.0	µg/Kg	<	2.0	µg/Kg
Beta-BHC	4.0	µg/Kg	<	4.0	µg/Kg
Delta-BHC	6.0	µg/Kg	<	6.0	µg/Kg
Gamma-BHC(Lindane)	2.6	µg/Kg	<	2.6	µg/Kg
Chlordane	9.3	µg/Kg	<	9.3	µg/Kg
4,4'-DDD	7.3	µg/Kg	<	7.3	µg/Kg
4,4'-DDE	2.6	µg/Kg	<	2.6	µg/Kg
4,4'-DDT	8.0	µg/Kg	<	8.0	µg/Kg
Dieldrin	1.3	µg/Kg	<	1.3	µg/Kg
Endosulfan I	9.3	µg/Kg	<	9.3	µg/Kg
Endosulfan II	2.6	µg/Kg	<	2.6	µg/Kg
Endosulfan Sulfate	44.2	µg/Kg	<	44.2	µg/Kg
Endrin	4.0	µg/Kg	<	4.0	µg/Kg
Endrin Aldehyde	15.4	µg/Kg	<	15.4	µg/Kg
Heptachlor	2.0	µg/Kg	<	2.0	µg/Kg
Heptachlor Epoxide	55.6	µg/Kg	<	55.6	µg/Kg
Methoxychlor	121	µg/Kg	<	121	µg/Kg
Toxaphene	161	µg/Kg	<	161	µg/Kg
Arochlor-1016	6	µg/Kg	<	6	µg/Kg
Arochlor-1221	6	µg/Kg	<	6	µg/Kg
Arochlor-1232	6	µg/Kg	<	6	µg/Kg
Arochlor-1242	6	µg/Kg	<	6	µg/Kg
Arochlor-1248	6	µg/Kg	<	6	µg/Kg
Arochlor-1254	6	µg/Kg	<	6	µg/Kg
Arochlor-1260	6	µg/Kg	<	6	µg/Kg

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DATE RECEIVED: 5-DEC-1990

REPORT NUMBER: D90-30988
REPORT DATE: 3-JAN-1991

SAMPLE SUBMITTED BY: US Army Corp of Engineers
ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Janice Stewart

SAMPLE MATRIX: SOIL
ID MARKS: T-305 0-3897

TEST REQUESTED	DETECTION LIMIT		RESULTS		
TOTAL METALS:					
Silver	1.0	mg/Kg	<	1.0	mg/Kg
Arsenic	0.1	mg/Kg		1.7	mg/Kg
Barium	1.0	mg/Kg		82.1	mg/Kg
Cadmium	1.0	mg/Kg		8.5	mg/Kg
Chromium	1.0	mg/Kg		10.3	mg/Kg
Mercury	0.01	mg/Kg		0.02	mg/Kg
Lead	1.0	mg/Kg	<	1.0	mg/Kg
Selenium	0.1	mg/Kg		0.6	mg/Kg

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DATE RECEIVED: 5-DEC-1990

REPORT NUMBER: D90-30989
REPORT DATE: 3-JAN-1991

SAMPLE SUBMITTED BY: US Army Corp of Engineers
ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Janice Stewart

SAMPLE MATRIX: SOIL
ID MARKS: T-306 0-3898

TEST REQUESTED	DETECTION LIMIT			RESULTS	
EPA 8240 Volatile Organics					
Acrolein	10.0	µg/Kg	<	10.0	µg/Kg
Acrylonitrile	10.0	µg/Kg	<	10.0	µg/Kg
Benzene	5.0	µg/Kg	<	5.0	µg/Kg
Bromodichloromethane	5.0	µg/Kg	<	5.0	µg/Kg
Bromoform	5.0	µg/Kg	<	5.0	µg/Kg
Bromomethane	10.0	µg/Kg	<	10.0	µg/Kg
Carbon tetrachloride	5.0	µg/Kg	<	5.0	µg/Kg
Chlorobenzene	5.0	µg/Kg	<	5.0	µg/Kg
Chlorodibromomethane	5.0	µg/Kg	<	5.0	µg/Kg
Chloroethane	10.0	µg/Kg	<	10.0	µg/Kg
2-Chloroethyvinyl ether	10.0	µg/Kg	<	10.0	µg/Kg
Chloroform	5.0	µg/Kg	<	5.0	µg/Kg
Chloromethane	10.0	µg/Kg	<	10.0	µg/Kg
1,2-Dichlorobenzene	5.0	µg/Kg	<	5.0	µg/Kg
1,3-Dichlorobenzene	5.0	µg/Kg	<	5.0	µg/Kg
1,4-Dichlorobenzene	5.0	µg/Kg	<	5.0	µg/Kg
1,1-Dichloroethane	5.0	µg/Kg	<	5.0	µg/Kg
1,2-Dichloroethane	5.0	µg/Kg	<	5.0	µg/Kg
1,1-Dichloroethene	5.0	µg/Kg	<	5.0	µg/Kg
trans-1,2-Dichloroethene	5.0	µg/Kg	<	5.0	µg/Kg
1,2-Dichloropropane	5.0	µg/Kg	<	5.0	µg/Kg
cis-1,3-Dichloropropene	5.0	µg/Kg	<	5.0	µg/Kg
trans-1,3 Dichloropropene	5.0	µg/Kg	<	5.0	µg/Kg
Ethylbenzene	5.0	µg/Kg	<	5.0	µg/Kg
Methylene chloride	10.0	µg/Kg	<	10.0	µg/Kg
1,1,2,2-Tetrachloroethane	5.0	µg/Kg	<	5.0	µg/Kg
Tetrachloroethene	5.0	µg/Kg	<	5.0	µg/Kg
Toluene	5.0	µg/Kg	<	5.0	µg/Kg
1,1,1-Trichloroethane	5.0	µg/Kg	<	5.0	µg/Kg
1,1,2-Trichloroethane	5.0	µg/Kg	<	5.0	µg/Kg

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REPORT NUMBER: D90-30989

TEST REQUESTED	DETECTION LIMIT			RESULTS	
EPA 8240 (Continued) Volatile Organics					
Trichloroethene	5.0	µg/Kg	<	5.0	µg/Kg
Trichlorofluoromethane	10.0	µg/Kg	<	10.0	µg/Kg
Vinyl chloride	10.0	µg/Kg	<	10.0	µg/Kg
Xylenes	5.0	µg/Kg	<	5.0	µg/Kg

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE LEVEL(µg/Kg)	PERCENT RECOVERED
1,2-Dichloroethane-d4 (SS)	50	114
Toluene-d8 (SS)	50	99.2
Bromofluorobenzene (SS)	50	78.2

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REPORT DATE: 3-JAN-1991

SAMPLE SUBMITTED BY: US Army Corp of Engineers
ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Janice Stewart

SAMPLE MATRIX: SOIL
ID MARKS: T-306 0-3898

TEST REQUESTED	DETECTION LIMIT			RESULTS	
EPA 8270 Acid Extractable Organics					
4-Chloro-3-methylphenol	660	µg/Kg	<	660	µg/Kg
2-Chlorophenol	660	µg/Kg	<	660	µg/Kg
2,4-Dichlorophenol	660	µg/Kg	<	660	µg/Kg
2,4-Dimethylphenol	660	µg/Kg	<	660	µg/Kg
4,6-Dinitro-2-methylphenol	660	µg/Kg	<	660	µg/Kg
2,4-Dinitrophenol	3300	µg/Kg	<	3300	µg/Kg
2-Methylphenol	660	µg/Kg	<	660	µg/Kg
2-Nitrophenol	660	µg/Kg	<	660	µg/Kg
4-Nitrophenol	3300	µg/Kg	<	3300	µg/Kg
Pentachlorophenol	3300	µg/Kg	<	3300	µg/Kg
Phenol	660	µg/Kg	<	660	µg/Kg
2,4,6-Trichlorophenol	660	µg/Kg	<	660	µg/Kg

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE LEVEL(µg/Kg)	PERCENT RECOVERED
Phenol-d5 (SS)	100	67.8
2-Fluorophenol (SS)	100	60.6
2,4,6-Tribromophenol (SS)	100	42.6

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ATTENTION: Ms. Janice Stewart

SAMPLE MATRIX: SOIL
ID MARKS: T-306 0-3898

TEST REQUESTED	DETECTION LIMIT			RESULTS	
EPA 8270 Base-Neutral Extractable Organics					
Acenaphthene	660	µg/Kg	<	660	µg/Kg
Acenaphthylene	660	µg/Kg	<	660	µg/Kg
Anthracene	660	µg/Kg	<	660	µg/Kg
Benzidine	660	µg/Kg		2000	µg/Kg
Benzo(a)anthracene	660	µg/Kg	<	660	µg/Kg
Benzo(b)fluoranthene	660	µg/Kg	<	660	µg/Kg
Benzo(k)fluoranthene	660	µg/Kg	<	660	µg/Kg
Benzo(g,h,i)perylene	660	µg/Kg	<	660	µg/Kg
Benzo(a)pyrene	660	µg/Kg	<	660	µg/Kg
Bis(2-chloroethoxy)methane	660	µg/Kg	<	660	µg/Kg
Bis(2-chloroethyl)ether	660	µg/Kg	<	660	µg/Kg
Bis(2-chloroisopropyl)ether	660	µg/Kg	<	660	µg/Kg
Bis(2-ethylhexyl)phthalate	660	µg/Kg	<	660	µg/Kg
4-Bromophenylphenyl ether	660	µg/Kg	<	660	µg/Kg
Butyl benzyl phthalate	660	µg/Kg	<	660	µg/Kg
2-Chloronaphthalene	660	µg/Kg	<	660	µg/Kg
4-Chlorophenylphenyl ether	660	µg/Kg	<	660	µg/Kg
Chrysene	660	µg/Kg	<	660	µg/Kg
Dibenz(a,h)anthracene	660	µg/Kg	<	660	µg/Kg
Di-n-butylphthalate	660	µg/Kg	<	660	µg/Kg
1,3-Dichlorobenzene	660	µg/Kg	<	660	µg/Kg
1,4-Dichlorobenzene	660	µg/Kg	<	660	µg/Kg
1,2-Dichlorobenzene	660	µg/Kg	<	660	µg/Kg
3,3'-Dichlorobenzidine	1300	µg/Kg	<	1300	µg/Kg
Diethylphthalate	660	µg/Kg	<	660	µg/Kg
Dimethylphthalate	660	µg/Kg	<	660	µg/Kg
2,4-Dinitrotoluene	660	µg/Kg	<	660	µg/Kg
2,6-Dinitrotoluene	660	µg/Kg	<	660	µg/Kg
Di-n-octylphthalate	660	µg/Kg	<	660	µg/Kg
Fluoranthene	660	µg/Kg	<	660	µg/Kg

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REPORT NUMBER: D90-30989

TEST REQUESTED	DETECTION LIMIT			RESULTS	
EPA 8270 (Continued) Base-Neutral Extractable Organics					
Fluorene	660	µg/Kg	<	660	µg/Kg
Hexachlorobenzene	660	µg/Kg	<	660	µg/Kg
Hexachlorobutadiene	660	µg/Kg	<	660	µg/Kg
Hexachlorocyclobutandiene	660	µg/Kg	<	660	µg/Kg
Hexachloroethane	660	µg/Kg	<	660	µg/Kg
Indeno(1,2,3-cd)pyrene	660	µg/Kg	<	660	µg/Kg
Isophorone	660	µg/Kg	<	660	µg/Kg
Naphthalene	660	µg/Kg	<	660	µg/Kg
Nitrobenzene	660	µg/Kg	<	660	µg/Kg
N-Nitrosodimethylamine	660	µg/Kg	<	660	µg/Kg
N-Nitrosodiphenylamine	660	µg/Kg	<	660	µg/Kg
N-Nitrosodipropylamine	660	µg/Kg	<	660	µg/Kg
Phenanthrene	660	µg/Kg	<	660	µg/Kg
Pyrene	660	µg/Kg	<	660	µg/Kg
1,2,4-Trichlorobenzene	660	µg/Kg	<	660	µg/Kg

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE LEVEL(µg/Kg)	PERCENT RECOVERED
Nitrobenzene-d5 (SS)	50	61.2
2-Fluorobenzene (SS)	50	63.6
Terphenyl-d14 (SS)	50	71.2

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REPORT DATE: 3-JAN-1991

SAMPLE SUBMITTED BY: US Army Corp of Engineers
ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Janice Stewart

SAMPLE MATRIX: SOIL
ID MARKS: T-306 0-3898

TENTATIVELY IDENTIFIED COMPOUNDS

COMPOUND	RETENTION TIME	FRACTION	RESULTS	
Tentatively Identified Compounds - ABN				
Phenol, 2,6-bis(1,1-dimethylethyl)	22.28	ABN	13000	µg/Kg
2-Methyl-6-propyldodecane	23.48	ABN	2000	µg/Kg
3-Methylhexadecane	25.00	ABN	1100	µg/Kg
7-Hexyltridecane	27.82	ABN	1600	µg/Kg
Eicosane	29.16	ABN	1900	µg/Kg
10-Methyleicosane	30.39	ABN	2600	µg/Kg
Tricosane	32.70	ABN	2100	µg/Kg
Tetracosane	33.78	ABN	1800	µg/Kg
Hexacosane	35.89	ABN	1400	µg/Kg
Octacosane	38.49	ABN	2900	µg/Kg
Unidentified aromatic hydrocarbon	38.60	ABN	5300	µg/Kg
Nonacosane	40.13	ABN	1700	µg/Kg
Unidentified cyclic hydrocarbon	46.64	ABN	3400	µg/Kg
Sitosterol	52.44	ABN	1900	µg/Kg

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ATTENTION: Ms. Janice Stewart

SAMPLE MATRIX: SOIL
ID MARKS: T-306 0-3898

TENTATIVELY IDENTIFIED COMPOUNDS

COMPOUND	RETENTION TIME	FRACTION	RESULTS	
Tentatively Identified Compounds - VOA				
No compounds detected		VOA	10	µg/Kg

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ATTENTION: Ms. Janice Stewart

SAMPLE MATRIX: SOIL
ID MARKS: T-306 0-3898

TEST REQUESTED	DETECTION LIMIT			RESULTS	
Organochlorine Pesticides and PCB's					
Aldrin	27	µg/Kg	<	27	µg/Kg
Alpha-BHC	20	µg/Kg	<	20	µg/Kg
Beta-BHC	40	µg/Kg	<	40	µg/Kg
Delta-BHC	60	µg/Kg	<	60	µg/Kg
Gamma-BHC(Lindane)	26	µg/Kg	<	26	µg/Kg
Chlordane	93	µg/Kg	<	93	µg/Kg
4,4'-DDD	73	µg/Kg	<	73	µg/Kg
4,4'-DDE	26	µg/Kg	<	26	µg/Kg
4,4'-DDT	80	µg/Kg	<	80	µg/Kg
Dieldrin	13	µg/Kg	<	13	µg/Kg
Endosulfan I	93	µg/Kg	<	93	µg/Kg
Endosulfan II	26	µg/Kg	<	26	µg/Kg
Endosulfan Sulfate	442	µg/Kg	<	442	µg/Kg
Endrin	40	µg/Kg	<	40	µg/Kg
Endrin Aldehyde	154	µg/Kg	<	154	µg/Kg
Heptachlor	20	µg/Kg	<	20	µg/Kg
Heptachlor Epoxide	556	µg/Kg	<	556	µg/Kg
Methoxychlor	1210	µg/Kg	<	1210	µg/Kg
Toxaphene	1610	µg/Kg	<	1610	µg/Kg
Arochlor-1016	67	µg/Kg	<	67	µg/Kg
Arochlor-1221	67	µg/Kg	<	67	µg/Kg
Arochlor-1232	67	µg/Kg	<	67	µg/Kg
Arochlor-1242	67	µg/Kg	<	67	µg/Kg
Arochlor-1248	67	µg/Kg	<	67	µg/Kg
Arochlor-1254	67	µg/Kg	<	67	µg/Kg
Arochlor-1260	67	µg/Kg	<	67	µg/Kg

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DATE RECEIVED: 5-DEC-1990

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REPORT DATE: 3-JAN-1991

SAMPLE SUBMITTED BY: US Army Corp of Engineers
ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Janice Stewart

SAMPLE MATRIX: SOIL
ID MARKS: T-307 0-3899

TEST REQUESTED	DETECTION LIMIT			RESULTS	
TOTAL METALS:					
Silver	1.0	mg/Kg	<	1.0	mg/Kg
Arsenic	0.1	mg/Kg		3.0	mg/Kg
Barium	1.0	mg/Kg		705	mg/Kg
Cadmium	1.0	mg/Kg		33.3	mg/Kg
Chromium	1.0	mg/Kg		9.4	mg/Kg
Mercury	0.01	mg/Kg		0.02	mg/Kg
Lead	1.0	mg/Kg	<	1.0	mg/Kg
Selenium	0.1	mg/Kg		1.5	mg/Kg

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Chief Executive Officer

CANNON AFB
ASBESTOS SAMPLE ANALYSIS
SWDED-GL REPORT NO. 15263

1. REFERENCE: Reference is made to Tulsa Test Request MIL 90-113 requesting testing of possible asbestos samples.

2. SAMPLES: On December 5 and 10, 1990 nine bulk samples were received for analysis by Polarized Light Microscopy.

SWD LAB NO.	FIELD SAMPLE NO.	LOCATION	TOTAL VOLUME (liters)
A-1413	T-101	Rubble Pile - Trench 1	N/A
A-1414	T-301	Rubble Pile - Trench 3	N/A
A-1417	T-201	Rubble Pile - Trench 2	N/A
A-1418	T-401	Rubble Pile - Trench 4	N/A
A-1419	T-501	Rubble Pile - Trench 5	N/A
A-1420	T-501QC	Rubble Pile - Trench 5	N/A
A-1421	T-601	Rubble Pile - Trench 6	N/A
A-1422	T-701	Rubble Pile - Trench 7	N/A
A-1423	T-801	Rubble Pile - Trench 8	N/A

3. RESULTS OF PLM ANALYSIS:

SWD LAB NO.	FIELD SAMPLE NO.	TYPE MATERIAL	ASBESTOS TYPE	PERCENT ASBESTOS
A-1413	T-101	Soil	Actinolite	Trace
A-1414	T-301	Soil	None	Detected
A-1417	T-201	Soil	None	Detected
A-1418	T-401	Soil	None	Detected
A-1419	T-501	Soil	None	Detected
A-1420	T-501QC	Soil	None	Detected
A-1421	T-601	Soil	None	Detected
A-1422	T-701	Soil	None	Detected
A-1423	T-801	Soil	None	Detected

294 9?

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DATE RECEIVED: 6-DEC-1990

REPORT NUMBER: D90-31116
REPORT DATE: 3-JAN-1991

SAMPLE SUBMITTED BY: US Army Corp of Engineers
ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Cathy Hutchins

SAMPLE MATRIX: SOIL
ID MARKS: T402 0-3919

TEST REQUESTED	DETECTION LIMIT		RESULTS		
PCB by EPA Method 8080					
Arochlor 1016	0.1	mg/Kg	<	0.1	mg/Kg
Arochlor 1221	0.1	mg/Kg	<	0.1	mg/Kg
Arochlor 1232	0.1	mg/Kg	<	0.1	mg/Kg
Arochlor 1242	0.1	mg/Kg	<	0.1	mg/Kg
Arochlor 1248	0.1	mg/Kg	<	0.1	mg/Kg
Arochlor 1254	0.1	mg/Kg	<	0.1	mg/Kg
Arochlor 1260	0.1	mg/Kg	<	0.1	mg/Kg

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David R. Godwin, Ph.D.
Chief Executive Officer

56

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CANNON AFB
ASBESTOS SAMPLE ANALYSIS
SWDED-GL REPORT NO. 15263

1. REFERENCE: Reference is made to Tulsa Test Request MIL 90-113 requesting testing of possible asbestos samples.

2. SAMPLES: On December 5 and 10, 1990 nine bulk samples were received for analysis by Polarized Light Microscopy.

SWD LAB NO.	FIELD SAMPLE NO.	LOCATION	TOTAL VOLUME (liters)
A-1413	T-101	Rubble Pile - Trench 1	N/A
A-1414	T-301	Rubble Pile - Trench 3	N/A
A-1417	T-201	Rubble Pile - Trench 2	N/A
A-1418	T-401	Rubble Pile - Trench 4	N/A
A-1419	T-501	Rubble Pile - Trench 5	N/A
A-1420	T-501QC	Rubble Pile - Trench 5	N/A
A-1421	T-601	Rubble Pile - Trench 6	N/A
A-1422	T-701	Rubble Pile - Trench 7	N/A
A-1423	T-801	Rubble Pile - Trench 8	N/A

3. RESULTS OF PLM ANALYSIS:

SWD LAB NO.	FIELD SAMPLE NO.	TYPE MATERIAL	ASBESTOS TYPE	PERCENT ASBESTOS
A-1413	T-101	Soil	Actinolite	Trace
A-1414	T-301	Soil	None	Detected
A-1417	T-201	Soil	None	Detected
A-1418	T-401	Soil	None	Detected
A-1419	T-501	Soil	None	Detected
A-1420	T-501QC	Soil	None	Detected
A-1421	T-601	Soil	None	Detected
A-1422	T-701	Soil	None	Detected
A-1423	T-801	Soil	None	Detected

291 91

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DATE RECEIVED: 6-DEC-1990

REPORT NUMBER: D90-31117
REPORT DATE: 3-JAN-1991

SAMPLE SUBMITTED BY: US Army Corp of Engineers
ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Cathy Hutchins

SAMPLE MATRIX: SOIL
ID MARKS: T502 0-3921

TEST REQUESTED	DETECTION LIMIT			RESULTS	
PCB by EPA Method 8080					
Arochlor 1016	0.1	mg/Kg	<	0.1	mg/Kg
Arochlor 1221	0.1	mg/Kg	<	0.1	mg/Kg
Arochlor 1232	0.1	mg/Kg	<	0.1	mg/Kg
Arochlor 1242	0.1	mg/Kg	<	0.1	mg/Kg
Arochlor 1248	0.1	mg/Kg	<	0.1	mg/Kg
Arochlor 1254	0.1	mg/Kg	<	0.1	mg/Kg
Arochlor 1260	0.1	mg/Kg	<	0.1	mg/Kg

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David R. Godwin, Ph.D.
Chief Executive Officer

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DATE RECEIVED: 6-DEC-1990

REPORT NUMBER: D90-31118
REPORT DATE: 3-JAN-1991

SAMPLE SUBMITTED BY: US Army Corp of Engineers
ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Cathy Hutchins

SAMPLE MATRIX: SOIL
ID MARKS: T503 0-3922

TEST REQUESTED	DETECTION LIMIT			RESULTS	
EPA 8270 TCLP - Extractable Organics					
o-Cresol	0.04	mg/L	<	0.04	mg/L
m-Cresol	0.04	mg/L	<	0.04	mg/L
p-Cresol	0.04	mg/L	<	0.04	mg/L
2,4-Dinitrotoluene	0.02	mg/L	<	0.02	mg/L
Hexachlorobenzene	0.02	mg/L	<	0.02	mg/L
Hexachlorobutadiene	0.02	mg/L	<	0.02	mg/L
Hexachloroethane	0.02	mg/L	<	0.02	mg/L
Nitrobenzene	0.02	mg/L	<	0.02	mg/L
Pentachlorophenol	0.10	mg/L	<	0.10	mg/L
Pyridine	0.02	mg/L	<	0.02	mg/L
2,4,5-Trichlorophenol	0.02	mg/L	<	0.02	mg/L
2,4,6-Trichlorophenol	0.02	mg/L	<	0.02	mg/L

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE LEVEL(µg/L)	PERCENT RECOVERED
Nitrobenzene-d5(SS)	50	68.5
2-Fluorobiphenyl(SS)	50	67.4
Terphenyl-d14(SS)	50	74.6
Phenol-d6(SS)	100	66.8
2-Fluorophenol(SS)	100	65.9
2,4,6-Tribromophenol(SS)	100	52.1

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REPORT NUMBER: D90-31118
REPORT DATE: 3-JAN-1991

SAMPLE SUBMITTED BY: US Army Corp of Engineers
ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Cathy Hutchins

SAMPLE MATRIX: SOIL
ID MARKS: T503 0-3922

TEST REQUESTED	DETECTION LIMIT			RESULTS	
EPA 8240 TCLP - Volatile Organics					
Benzene	0.01	mg/L	<	0.01	mg/L
Carbon tetrachloride	0.01	mg/L	<	0.01	mg/L
Chlorobenzene	0.01	mg/L	<	0.01	mg/L
Chloroform	0.01	mg/L	<	0.01	mg/L
1,4-Dichlorobenzene	0.01	mg/L	<	0.01	mg/L
1,2-Dichloroethane	0.01	mg/L	<	0.01	mg/L
1,1-Dichloroethene	0.01	mg/L	<	0.01	mg/L
Methyl ethyl ketone	0.05	mg/L	<	0.05	mg/L
Tetrachloroethene	0.01	mg/L	<	0.01	mg/L
Trichloroethene	0.01	mg/L	<	0.01	mg/L
Vinyl chloride	0.02	mg/L	<	0.02	mg/L

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE LEVEL(µg/L)	PERCENT RECOVERED
1,2-Dichloroethane-d4(SS)	50	98.6
Toluene-d8(SS)	50	88.1
Bromofluorobenzene(SS)	50	88.4

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60

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SAMPLE SUBMITTED BY: US Army Corp of Engineers
ADDRESS: 4815 Cass St.
Dallas, Texas 75235
ATTENTION: Ms. Cathy Hutchins

SAMPLE MATRIX: SOIL
ID MARKS: T503 0-3922

TEST REQUESTED	DETECTION LIMIT		RESULTS		
TCLP Herbicides					
2,4-D	5.0	mg/L	<	5.0	mg/L
2,4,5-TP Silvex	0.5	mg/L	<	0.5	mg/L

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ADDRESS: 4815 Cass St.
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ATTENTION: Ms. Cathy Hutchins

SAMPLE MATRIX: SOIL
ID MARKS: T503 0-3922

TEST REQUESTED	DETECTION LIMIT		RESULTS		
TCLP Pesticides					
Chlordane	0.014	mg/L	<	0.014	mg/L
Heptachlor	0.0010	mg/L	<	0.0010	mg/L
Heptachlor epoxide	0.0010	mg/L	<	0.0010	mg/L
Endrin	0.006	mg/L	<	0.006	mg/L
Lindane	0.004	mg/L	<	0.004	mg/L
Methoxychlor	0.18	mg/L	<	0.18	mg/L
Toxaphene	0.24	mg/L	<	0.24	mg/L

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62