NEW MEXICO ENVIRONMENT DEPARTMENT
STATE OF NEW MEXICO

IN THE MATTER OF:	)	**COMPLIANCE ORDER**
	)	**ON CONSENT**
THE UNITED STATES DEPARTMENT OF	)	**PURSUANT TO**
ENERGY AND SANDIA CORPORATION,	)	**THE NEW MEXICO**
SANDIA NATIONAL LABORATORIES,	)	**HAZARDOUS WASTE**
BERNALILLO COUNTY, NEW MEXICO,	)	**ACT, § 74-4-10**
	)	
RESPONDENTS.	)	

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Waste Bureau

April 29, 2004

SNL 1253

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LIST OF ACRONYMS

AOC	Area of Concern
C.F.R.	Code of Federal Regulations
CME	Corrective Measures Evaluation
CMI	Corrective Measures Implementation
CMS	Corrective Measures Study (synonymous with CME)
DOE	United States Department of Energy
EPA	United States Environmental Protection Agency
HE	High Explosive
HI	Hazard Index
HQ	Hazard Quotient
HSWA	Hazardous and Solid Waste Amendments
HWA	New Mexico Hazardous Waste Act, NMSA 1978, §§ 74-4-1 to 74-4-14
IM	Interim Measures
KAFB	Kirtland Air Force Base
LANL	Los Alamos National Laboratory
MCL	Maximum Contaminant Level
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
mi	mile or miles
mi^2	square miles
NFA	No Further Action
NMAC	New Mexico Administrative Code
NMSA	New Mexico Statutes Annotated
OU	Operable Unit
PCB	polychlorinated biphenyls
RCRA	Resource Conservation Recovery Act
RFI	RCRA Facility Investigation
RSI	Request for Supplemental Information
SAR	SWMU Assessment Report
SNL	Sandia National Laboratories
SSL	Soil Screening Level
SWMU	Solid Waste Management Unit
TA	Technical Area
TAG	Tijeras Arroyo Groundwater
TCE	trichloroethylene
TNT	trinitrotoluene
TSCA	Toxic Substances Control Act
UCL	upper confidence level
µg/L	micrograms per liter
VCA	Voluntary Corrective Action
VCM	Voluntary Corrective Measure
VOC	volatile organic compound
WQCC	Water Quality Control Commission

I. INTRODUCTION

This Compliance Order on Consent (Consent Order) is issued pursuant to the New Mexico Hazardous Waste Act (HWA), NMSA 1978, § 74-4-10, and entered into by the Secretary of the New Mexico Environment Department (the Department), Respondent the United States Department of Energy (DOE), and Respondent Sandia Corporation (Sandia). This Consent Order is also issued pursuant to the New Mexico Solid Waste Act (SWA), NMSA 1978, § 74-9-36(D), for the purpose of addressing the requirements concerning nitrate and perchlorate set forth in this Consent Order.

This Consent Order contains investigation and corrective action requirements for the Sandia National Laboratories/New Mexico (the Facility or SNL/NM), which is owned and operated by DOE and co-operated by Sandia. The Consent Order provides for the corrective action requirements primarily by establishing schedules and deliverables. Details regarding the technical strategy and scope of the environmental investigations are found in various work plans, sampling and analysis plans, or other plans previously approved by or scheduled to be delivered to and approved by the Department.

This Consent Order is divided into 11 Sections. Section I provides this introduction. Section II sets forth the Department's findings of fact and conclusions of law in support of this Consent Order. Section III contains general provisions, such as purposes, definitions, jurisdiction, stipulated penalties, force majeure, dispute resolution, covenants not to sue, reservation of rights and defenses, enforcement, integration with permit, and land transfer. Section IV sets forth the requirements for investigation of environmental contamination at the Facility. It addresses general requirements, areas with groundwater contamination, the Mixed Waste Landfill (MWL), septic systems, and other Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs). Section V provides for the investigation of newly identified SWMUs, AOCs and releases. Section VI sets forth the corrective action process to be employed at the Facility. Section VII provides for the identification of cleanup alternatives and the implementation of corrective measures. Section VIII establishes requirements for groundwater monitoring wells. Section IX sets requirements for groundwater sampling, including the purging of monitoring wells. Section X sets forth the requirements for various reports to be submitted to the Department. Section XI establishes the schedules for implementation of the Consent Order.

The requirements of this Order do not apply to radionuclides, including, but not limited to, source, special nuclear, or byproduct material as defined in the Atomic Energy Act of 1954, as amended, or the radioactive portion of mixed waste. The requirements of this Order do apply, however, to the hazardous waste component of mixed waste.

This Consent Order has been negotiated in good faith and is entered into by the signatories hereto without the admission or adjudication of any issue of fact or law, and with the intent that the parties will act in good faith to implement the terms and requirements of the Consent Order. The actions undertaken by Respondents in accordance with this Consent Order do not constitute an admission of any liability, or any agreement with any Findings of Fact or Conclusions of Law

contained in this Consent Order. Respondents do not admit, and retain the right to controvert in any subsequent proceedings, other than proceedings to implement or enforce this Consent Order, the validity of the Findings of Facts and Conclusions of Law in this Consent Order. Respondents agree to comply with and be bound by the terms of this Consent Order and agree that they will not contest the basis or validity of this Consent Order.

II. FINDINGS OF FACT AND CONCLUSIONS OF LAW

II.A. FINDINGS OF FACT

The Department makes the following findings of fact:

II.A.1. The Parties

1. The New Mexico Environment Department is the department within the executive branch of the New Mexico state government charged with administration and enforcement of the HWA, NMSA 1978, § 74-4-10; the Hazardous Waste Regulations, 20.4.1 NMAC; and the SWA, NMSA 1978, § 74-9-36(D).

2. Respondent DOE is a department of the United States, and is the owner and a co-operator of the Facility. Respondent Sandia is the management and operating contractor for the Facility pursuant to a contract with DOE, and is a co-operator of the Facility.

II.A.2. Facility

3. The Facility, as defined in Section III.B of this Consent Order, is the Sandia National Laboratories/New Mexico (SNL/NM) site. That site comprises five Technical Areas (TAs) located within Kirtland Air Force Base (KAFB) and several large remote test areas located on KAFB and adjacent U.S. Forest Service lands: Foothills Test Area, Central Coyote Test Area, Southwest Test Area, and Canyons Test Area. Within KAFB, the Facility comprises 2,820 acres (4.4 square miles). The SNL/NM/KAFB area encompasses 52,223 acres (81.6 square miles) bounded on the north and northwest by Albuquerque, on the east by the Cibola National Forest, on the south by the Pueblo of Isleta, and on the west by land owned by the State of New Mexico and the Albuquerque International Sunport.

4. Within the boundaries of the Facility, two major surface drainages, or canyons, drain the Manzanita and Sandia Mountains to the east and northeast of the Facility. The canyons run roughly east to west. From north to south, these drainages are Tijeras Canyon and Arroyo del Coyote and their tributaries.

5. Hydrogeologic investigations have identified four discrete hydrogeologic zones beneath the lands on which Facility operations are located: (1) canyon alluvial systems; (2) fractured bedrock under canyon alluvial systems; (3) shallow perched water in alluvial sediments in the northern part of KAFB; and (4) the regional aquifer located in the main part of the Albuquerque Basin.

6. The City of Albuquerque operates approximately 16 public water supply wells within about 1.5 miles to the north and west of the Facility. The wells draw water from the regional aquifer. KAFB periodically operates approximately eight public water supply wells within the boundaries of the base; these wells are also screened in the regional aquifer. Within two miles of the Tijeras Arroyo Groundwater (TAG) area are eight KAFB supply wells, seven are

inside of the TAG area and one is outside. Additionally, outside of the TAG area and within two miles are four City of Albuquerque municipal supply wells and one hospital supply well.

II.A.3. Facility Operations

10. SNL/NM began operations in 1945 on Sandia Base in Albuquerque, New Mexico, as Z Division, originally part of what is now Los Alamos National Laboratory (LANL). Both SNL/NM and LANL were born out of America's World War II atomic bomb development effort, the Manhattan Project. SNL/NM came into being as an ordnance design, testing, and assembly facility located on Sandia Base (the Army base that preceded KAFB). Today, SNL/NM is a multidisciplinary laboratory engaged in research and development of non-nuclear components of nuclear weapons, alternative energy sources, and a wide variety of other national security related research and development.

11. From 1949 until 1993, American Telephone and Telegraph managed SNL. In 1993, Martin Marietta Corporation, now Lockheed Martin Corporation, was awarded the management contract by DOE. Sandia, which is a wholly owned subsidiary of Lockheed Martin Corporation, is presently under contract to operate SNL. Today, SNL/NM, a part of SNL, comprises a large laboratory and headquarters in Albuquerque.

9. Most SWMUs at the Facility have been assigned to 11 Operable Units (OUs). These are: Septic Tanks and Drainfields (OU 1295), TA-I (OU 1302), TA-II (OU 1303), TA-III and TA-V (OU 1306), Tijeras Arroyo (OU 1309), Foothills Test Area (OU 1332), Canyons Test Area (OU 1333), Central Coyote Test Area (OU 1334), Southwest Test Area (OU 1335), the Liquid Waste Disposal System (OU 1307), and the MWL (OU 1289). This Consent Order requires investigation and, as necessary, corrective measures of all SWMUs and AOCs, regardless of whether or not assigned to a particular OU.

II.A.4. Waste Management

10. As a result of the Facility's operations from approximately 1945 to the present, Respondents have generated, treated, stored, disposed of, and otherwise handled solid wastes, hazardous wastes, hazardous constituents, and mixed wastes.

11. Respondents have disposed of hazardous wastes and hazardous constituents at the Facility. In addition, nitrates are present in the environment at the Facility. Respondents have disposed of materials, including hazardous waste and hazardous constituents, in pits, trenches, landfills, and waste piles throughout the Facility. Respondents have also discharged industrial wastewater from outfalls into the Tijeras Arroyo watercourse and through numerous septic systems located across the Facility. The various waste disposal units at the Facility consist of SWMUs and AOCs. SWMUs and AOCs comprise unpermitted landfills, septic system leachfields and seepage pits, outfalls, waste piles, and test areas. Unpermitted landfills include, but are not limited to, those at TA-II (Classified Waste and Radioactive Waste Landfills) and TA-III (MWL).

II.A.5. Polychlorinated Biphenyls

Discussed below are three areas at the Facility where polychlorinated biphenyl (PCB) contamination has been identified. These areas include SWMU 2 (also known as the Classified Waste Landfill), SWMU 18, and SWMU 30.

12. SWMU 2 (Classified Waste Landfill) was excavated as a voluntary corrective measure pursuant to the provisions of the Hazardous and Solid Waste Amendments (HSWA) module of Respondents' Resource Conservation and Recovery Act (RCRA) Part B Permit. Following the excavation, the Department requested additional characterization of the excavated soils; this characterization identified low PCB concentrations in the soil. DOE and Sandia then conducted further characterization sampling to determine the extent and maximum PCB concentration at the site. Such sampling was performed pursuant to Toxic Substances Control Act (TSCA) under the express direction of the United States Environmental Protection Agency (EPA) Region 6 personnel.

13. On September 26, 2002, DOE and Sandia submitted a risk-based disposal request to EPA under TSCA regulation, 40 C.F.R. § 761.61(c) for SWMU 2. (EPA received the request on October 2, 2002 and therefore refers to it as the October 2, 2002 request.) That request documents the sampling activities and results obtained by DOE and Sandia at SWMU 2. The request also provides an assessment of the risk associated with the use of PCB soils to backfill the SWMU 2 excavation. The request further identifies a number of management activities for which DOE and Sandia sought approval, including excavation backfilling, verification sampling for soil pile staging areas, and management of cleanup wastes (e.g., booties, protective clothing).

14. On March 27, 2003, EPA proposed approving DOE's and Sandia's October 2, 2002 request. The public comment period on EPA's proposed approval closed on May 11, 2003. EPA approved the request on June 12, 2003. The Department has reviewed DOE's and Sandia's October 2, 2002 request to EPA, and has concurred with the cleanup protocol and other specifications for SWMU 2. The Department has concluded that SWMU 2 may be appropriate for a determination of No Further Action (NFA) [1] under an industrial land-use scenario.

15. SWMU 18 (the Concrete Pad) was investigated in April 1994, and the sampling results indicated small, localized areas of PCBs in shallow soils around the northwest corner of the pad. In January 1995, additional samples were collected to determine the extent of the PCB

[1] The Department now uses the term "Corrective Action Complete" instead of the term "No Further Action." More specifically, the Department now uses the terms "Corrective Action Complete Without Controls" and "Corrective Action Complete With Controls" to indicate whether or not structural or institutional controls are required after corrective action has been completed. The Department's new terminology is consistent with EPA guidance. Throughout this Consent Order, the Parties refer to "No Further Action" or "NFA" when referring to Department actions that have already occurred and to "Corrective Action Complete" when referring to Department actions that will occur in the future.

contamination. Sample results from these investigations were documented in the Technical Area III/V RCRA Facilities Investigation (RFI) report submitted to the Department in June 1996.

16. In October 1996, DOE and Sandia conducted a Voluntary Corrective Measure (VCM) to remove PCB-contaminated soils at SWMU 18. Cleanup levels for PCBs were determined in conjunction with EPA and the Department and were based on EPA guidance provided to SNL/NM environmental restoration personnel in a memorandum from EPA Region 6 dated March 26, 1996. After the VCM was completed, DOE and Sandia submitted to the Department a NFA proposal under RCRA for SWMU 18.

17. Between July 31, 1997 and April 1998, the Department issued two Notices of Deficiency (NOD) for the Technical Area III/V RCRA Facilities Investigation report. Sandia and DOE responded and, from July 1998 through March 2001, conducted additional sampling for PCBs, consistent with the Department's request.

18. In October 2001, DOE and Sandia submitted the sample results and sample location maps from its 1997 and 1998 sampling to EPA Region 6. Shortly thereafter, in December 2001, EPA confirmed in writing to DOE and Sandia that its concerns regarding SWMU 18 had been adequately addressed for purposes of TSCA and that no further action needed to be taken. After receiving EPA's approval of the site cleanup under TSCA, DOE and Sandia submitted the sample results and a revised risk assessment for SWMU 18 to the Department, along with a request for a NFA determination for the site under RCRA. In a letter dated March 18, 2003, the Department concluded that SWMU 18 appears to be suitable for NFA status under an industrial land-use scenario.

19. SWMU 30 (the Reclamation Yard) was investigated under the Technical Area I RCRA Facilities Investigation; sampling results indicated the presence of PCBs in shallow soils. On April 22, 1999, DOE and Sandia submitted to EPA Region 6 a notification of self-implementing cleanup under TSCA regulation, 40 C.F.R. § 761.61(a). On May 18, 1999, EPA Region 6 responded to the notification, seeking additional information from DOE and Sandia.

    In December 1999, DOE and Sandia provided EPA with additional information to demonstrate that the characterization requirements of TSCA, 40 § CFR 761.61(a), had been met with respect to SWMU 30. On March 1, 2002, DOE and Sandia also transmitted to EPA Region 6 a letter, which responded to the other deficiencies noted by EPA in May 1999. Shortly thereafter, EPA approved DOE's and Sandia's responses. Although not required, or even contemplated under TSCA's self-implementing regulations, EPA also approved the cleanup conducted by DOE and Sandia under 40 § C.F.R. § 761.61(a). The Department has concluded that SWMU 30 is suitable for a determination of Corrective Action Complete With Controls, under an industrial land-use scenario, because of the presence of other hazardous constituents.

II.A.6. Releases of Contaminants

20. Waste management activities at the Facility have caused the release of solid and hazardous wastes, hazardous constituents, and mixed wastes into the environment. Hazardous waste or hazardous constituents that have been released into, and detected in, soils and sediments at the Facility include high explosive (HE) compounds; organic solvents; semi-volatile organic compounds; metals such as barium, beryllium, cadmium, chromium, copper, lead, mercury, silver, and zinc; and PCBs.

21. Contaminants that have been released into, and detected in, groundwater beneath the Facility include, for example, trichloroethylene (TCE) and other volatile organic compounds, chromium, and nitrate. Contaminants have been detected in the environment beneath the Facility in both perched and regional groundwater, and in canyon alluvial and bedrock systems.

II.A.7. Regulatory History of the Facility

22. Since November 19, 1980, Respondents have managed RCRA-regulated wastes under the applicable requirements of 40 C.F.R., Parts 260-270, and within the requirements of 20 NMAC Title 4, as they became effective.

23. On January 25, 1985, the State of New Mexico received authorization from EPA to implement its hazardous waste program under the HWA. 50 Fed. Reg. 1515 (Jan. 11, 1985).

24. In August 1990, Respondents submitted a RCRA Part A and Part B Permit Application for hazardous waste management units that covered the storage and/or treatment of hazardous wastes at the Radioactive and Mixed Waste Management Facility, the High Bay Waste Storage Facility, the Manzano Storage Bunkers, and the Interim Storage Site. This application was revised and re-submitted in November 1996. The Department did not take action on the application and some units continued to operate under interim status.

25. On April 17, 1991, Respondents submitted a RCRA Part B Permit Application for the operation of hazardous waste storage facilities at SNL/NM.

26. On August 6, 1992, the Department issued the Hazardous Waste Facility Permit to Respondents for the operation of hazardous waste storage units (Permit NM589011518-1). This Permit covered storage of hazardous wastes at the Hazardous Waste Management Facility and expired August 6, 2002. Respondents submitted a Part A and Part B Permit Request on February 6, 2002. Respondents' Permit remains in effect.

27. On July 27, 1993, EPA issued a Settlement Agreement and HSWA Module to the Permit, effective on August 26, 1993. The HSWA Module of the Permit expired on September 20, 2002, but that Permit is still in effect, as noted in the preceding Paragraph.

28. On October 1, 1994, Respondents submitted petitions for NFA for 22 sites (Round 1). The

EPA issued a Notice of Deficiency on April 7, 1995, that disapproved nine of the 22 petitions. Currently, two of the 22 sites (SWMUs 135 and 165) are not approved for Corrective Action Complete status.

29. On November 4, 1994, the Department issued the Hazardous Waste Treatment Facility Permit to Respondents for the operation of a hazardous waste treatment unit (Permit NM589011518-2). This Permit covered treatment of hazardous wastes at the Thermal Treatment Facility and expires December 4, 2004.

30. In June 1995, Respondents submitted an assessment report on the Building 829X silver recovery sump (now tracked as SWMU 276). The Department issued a Notice of Deficiency on August 8, 1996, and another on December 21, 2000. This site remains unapproved for Corrective Action Complete status.

31. On June 5, 1995, Respondents submitted petitions for NFA for 23 sites (Round 2). The Department issued a Notice of Deficiency on July 29, 1996 that disapproved 22 of the 23 petitions. Another Notice of Deficiency was issued on October 13, 1999. Currently, 12 of the 23 sites (SWMUs 48, 136, 159, 166, 167, 46, 227, 229, 230, 231, 233, and 234) are not approved for Corrective Action Complete status.

32. In August 1995, Respondents submitted petitions for NFA for 14 sites (Round 3). The Department issued a Notice of Deficiency on April 28, 1997 that disapproved 11 of the 14 petitions. Currently, three of the 14 sites (SWMUs 146, 148, and 28-2) are not approved for Corrective Action Complete status.

33. In September 1995, Respondents submitted a RCRA Facility Investigation (RFI) Report for the Liquid Waste Disposal System, petitioning for NFA status for three SWMUs (4, 5, and 52). The Department issued a Request for Supplemental Information (RSI) in September 1997; another RSI was issued for SWMU 52 in March 2001. All three SWMUs remain unapproved for Corrective Action Complete status.

34. On October 4, 1995, the Department issued a Federal Facilities Compliance Order under the Federal Facilities Compliance Act Amendments of 1992 to Respondents to resolve alleged violations of hazardous waste storage prohibitions. Exhibit A to the order consists of the Site Treatment Plan that provides the schedules and milestones for the treatment and/or shipment of covered mixed wastes at the Facility.

35. In March 1996, Respondents submitted a work plan for investigation of volatile organic compound (VOC)-contaminated groundwater in the Sandia North study area (now known as the Tijeras Arroyo Groundwater Investigation). The Department approved the plan in February 1997.

36. In June 1996, Respondents submitted a RFI Report for Technical Areas III and V. Within this report are NFA petitions for 14 of the SWMUs addressed. The Department issued a

Notice of Deficiency on the report on July 31, 1997, and another Notice of Deficiency on March 27, 1998. Currently, seven of the 18 SWMUs (18, 78, 83, 84, 196, 240 and 241) are not approved for Corrective Action Complete status.

37. In June 1996, Respondents submitted petitions for NFA for 12 sites (Round 4). On June 9, 1998, the Department issued a Notice of Deficiency that disapproved ten of the 12 petitions. A RSI was issued on June 9, 2000. Currently, seven of the 12 sites (SWMUs 49, 101, 116, 138, 149, 161, and 114) are not approved for Corrective Action Complete status.

38. In October 1996, the Respondents submitted a NFA petition for Building 828. The Department issued a RSI on December 12, 2000, and a 90-day time extension was granted on February 16, 2001. A response to the RSI was submitted to the Department in July 2001. Although the Department believes Building 828 to be suitable for a Corrective Action Complete determination based on an industrial risk scenario, public input is still pending. To date, Building 828 remains unapproved for Corrective Action Complete determination status.

39. In October 1996, Respondents submitted petitions for NFA for 11 sites (Round 5). The Department issued a Notice of Deficiency on February 4, 1998 that disapproved nine of the 11 petitions. A RSI was issued on June 5, 2000. Currently, two of the 11 sites (SWMUs 33 and 66) are not approved for Corrective Action Complete status.

40. In January 1997, Respondents submitted petitions for NFA for nine sites (Round 6). The Department issued a Notice of Deficiency on February 4, 1998 that disapproved seven of the nine petitions. Subsequently, the Department issued a Request for Supplemental Information on June 9, 1999, and December 14, 1999. Currently, five of the nine sites (SWMUs 137, 140, 150, 152, and 153) are not approved for Corrective Action Complete status.

41. In May 1997, Respondents submitted petitions for NFA for nine sites (Round 7). The Department issued a Notice of Deficiency on June 9, 1999 that disapproved four of the nine petitions. A RSI was issued on March 17, 1998. Currently, four of the nine sites (SWMUs 147, 96, 187, and 226) are not approved for Corrective Action Complete status.

42. In August 1997, Respondents submitted petitions for NFA for seven sites (Round 8). The Department issued a RSI on June 9, 1999 that disapproved three of the seven petitions. A RSI was also issued on December 13, 1999. Currently, three of the seven sites (SWMUs 154, 18, and 232) are not approved for Corrective Action Complete status.

43. In September 1997, Respondents submitted petitions for NFA for 14 sites (Round 9). The Department issued a RSI on June 9, 1999 that disapproved six of the 14 petitions. Currently, three of the 14 sites (SWMUs 1, 3, and 45) are not approved for Corrective Action Complete determination status.

44. In July 1998, Respondents submitted petitions for NFA for five sites (Round 10). The Department issued a RSI on June 9, 1999 for two of the five sites; in the same document, the

other three sites were deemed appropriate for NFA petition. The two remaining sites were deemed appropriate for NFA petition on December 6, 1999.

45. In September 1998, Respondents submitted petitions for NFA for nine sites (Round 11). The Department issued a RSI on June 9, 1999. All nine sites were deemed appropriate for NFA petition on December 13, 1999.

46. In May 1999, Respondents submitted petitions for NFA for five sites (Round 12). All five sites were deemed appropriate for NFA petition on September 30, 1999.

47. In August 1999, Respondents submitted petitions for NFA for six sites (Round 13). All six sites were deemed appropriate for NFA petition on March 23, 2000.

48. In August 1999, the Department approved a work plan for the investigation of VOC-contaminated groundwater in the TA-V groundwater investigation study area.

49. On October 19, 1999, Respondents submitted a Sampling and Analysis Plan for characterizing and assessing potential releases from septic and drain systems. On January 28, 2000, the Department approved this Plan. Currently, 83 septic and drain systems remain unapproved for Corrective Action Complete status at the Facility, including 61 systems not previously petitioned for NFA and SWMUs submitted in NFA Rounds 1-4 and 6-8.

50. In September 2000, Respondents submitted petitions for NFA for ten sites (Round 14). The Department issued a RSI on December 5, 2000 that disapproved four of the ten petitions. Currently, two of the ten sites (SWMUs 9 and 98) are not approved for Corrective Action Complete status.

51. In March 2001, Respondents submitted petitions for NFA for three sites: 94C, 94G, and 228B (Round 15). Two of the sites were deemed appropriate for NFA petition on March 30, 2001. The third site was deemed appropriate for NFA petition on April 26, 2001.

52. In September 2001, Respondents submitted petitions for NFA for four sites (Round 16). The Department is in the process of reviewing the investigation reports for these four sites.

53. On February 6, 2002, Respondents submitted a Part A and Part B Permit Request (10-year reapplication) to the Department that includes the Hazardous Waste Management Facility, the Thermal Treatment Facility, the Radioactive and Mixed Waste Management Facility, the High Bay Storage Facility, the Auxiliary Hot Cell, and the Manzano Storage Bunkers.

54. In September 2002, Respondents submitted petitions for NFA for three sites: 94H, 190, and the TNT Site (Round 17). The Department is in the process of reviewing the investigation reports for these three SWMUs.

55. As of the effective date of this Consent Order, the Department has approved the corrective

actions taken at 136 SWMUs and one AOC pursuant to the terms of its Facility RCRA Part B Permit. Those SWMUs and AOC have been granted No Further Action status pursuant to the Class 3 Permit Modification request process set forth in the Permit. This Consent Order requires corrective action to be completed at the remaining 64 SWMUs and 62 AOCs at the Facility. Corrective action either is in the process of being undertaken or has yet to be undertaken at these remaining SWMUs and AOCs.

II.A.8. Procedural History of Consent Order

56. On September 3, 2002, pursuant to Sections 74-4-10.1 and 74-4-13 of the HWA, the Department issued the "Determination of an Imminent and Substantial Endangerment to Health and the Environment" concerning Sandia National Laboratories (the Determination) to DOE and Sandia.

57. On September 3, 2002, the Department also issued a draft order pursuant to Sections 74-4-10.1 and 74-4-13 of the HWA (Draft Order). The Draft Order proposed a series of investigation and corrective action tasks for DOE and Sandia to complete at the Facility.

58. The Department provided notice to the public and an opportunity to comment on the Draft Order. The comment period opened on September 3, 2002 and closed on November 4, 2002. The Department received written comments from 11 citizens and organizations, including Respondents.

59. On October 3, 2002, the United States of America (United States), on behalf of DOE, filed a complaint with the United States District Court for the District of New Mexico, Civil No. 02-1245 MCA/ACT, challenging the Determination. The United States also filed a notice of appeal in the New Mexico Court of Appeals, No. 23,492, challenging the Determination.

60. On October 3, 2003, Sandia filed a complaint in the United States District Court for the District of New Mexico, Civil No. 02-1246 LFG/RHS, and a notice of appeal in the New Mexico Court of Appeals, No. 23,480, challenging the Determination.

61. From November 2002 through September 2003, the Parties engaged in settlement negotiations to resolve the issues raised by the United States' and Sandia's lawsuits. To facilitate the settlement discussions, the Parties agreed to stay the pending litigation during the settlement process.

62. This Consent Order is the result of the Parties' settlement negotiations. In addition, as a result of the settlement negotiations, the Department has agreed to withdraw the Determination and not to issue a final order pursuant to Sections 74-4.10.1 and 74-4-13, and the United States and Sandia have agreed to dismiss their lawsuits. *See* Section III.R.

63. On January 21, 2004, the Department made a draft of this Consent Order available to the public for review and comment. The Department placed a public notice of the availability of

the draft Consent Order in the local news outlets, and mailed copies of the notice to all interested parties included on the Department's Hazardous Waste Bureau's mailing list.

64. The Department invited the public to submit written comments on the draft Consent Order during a 30-day public comment period that began January 21, 2004, and ended on February 20, 2004. The public was notified by newspaper advertisements (English and Spanish), by mail (English), and by radio announcements (English). The draft Consent Order was available for review at the Department Hazardous Waste Bureau, located at 2905 Rodeo Park Drive East, Building 1, Santa Fe, New Mexico 87505-6303; and the Department District 1 Office located at 4131 Montgomery NE, Albuquerque, New Mexico 87109 from 8:00 a.m. to 5:00 p.m. A copy of the draft Order was also made available for the public at the Department website: http://www.nmenv.state.nm.us/HWB/snlperm.html. The website also contained English and Spanish versions of the public notice, the Fact Sheet, and a Frequently Asked Questions and Answer page.

Comments were accepted in the form of electronic mail (e-mail) at the address:

hazardous_waste_comment@nmenv.state.nm.us

All significant written and electronic mail (e-mail) comments received prior to 5:00 p.m., February 20, 2004, were considered in the preparation of the final Consent Order. Written comments were received from one citizen advocacy group.

II.B. CONCLUSIONS OF LAW

The Department makes the following conclusions of law:

1. Each of the Respondents, DOE and Sandia, is a "person" within the meaning of Section 74-4-3(K) of the HWA and the Hazardous Waste Regulations at 20.4.1.100 NMAC (incorporating 40 C.F.R. § 260.10).

2. Sandia National Laboratories/New Mexico is a "facility" within the meaning of the Hazardous Waste Regulations at 20.4.1.100 NMAC (incorporating 40 C.F.R. § 260.10).

3. Respondent DOE is an "owner" and an "operator" of the Facility within the meaning of the Hazardous Waste Regulations at 20.4.1.100 NMAC (incorporating 40 C.F.R. § 260.10).

4. Respondent Sandia is an "operator" of the Facility within the meaning of the Hazardous Waste Regulations at 20.4.1.100 NMAC (incorporating 40 C.F.R. § 260.10).

5. Respondents have engaged in the "storage," "treatment," and "disposal" of "solid waste" and "hazardous waste" at the Facility within the meaning of Section 74-4-3(P), (T), (E), (O), and (K) of the HWA, and the Hazardous Waste Regulations at 20.4.1.100 NMAC (incorporating 40 C.F.R. § 260.10).

6. The Department has determined that Respondents may have violated 20.4.1.900 NMAC, incorporating by reference 40 C.F.R. § 270.33, Schedule of Compliance. *See* NMSA 1978, § 74-4-10.

7. The Respondents have addressed or are in the process of addressing PCB contamination at SWMU 2, SWMU 18, and SWMU 30 pursuant to TSCA regulations, including 40 C.F.R. § 761.61(c). The Department has had a reasonable opportunity to review and comment upon the cleanup protocols for SWMU 2, SWMU 18, and SWMU 30, and this Consent Order imposes no new or additional requirements concerning PCBs at these three sites.

8. Each of the Respondents is a "person" under Section 74-9-3(I) of the SWA.

9. Perchlorate and nitrates are solid wastes under Section 74-9-3(N) of the SWA.

10. The Department has determined that there is or has been a release of nitrate and perchlorate into the environment requiring corrective action pursuant to Section 74-9-36(D) of the SWA.

III. GENERAL PROVISIONS

III.A. PURPOSES AND SCOPE OF CONSENT ORDER

The purposes of this Consent Order are: 1) to fully determine the nature and extent of releases of Contaminants at or from the Facility; 2) to identify and evaluate, where needed, alternatives for corrective measures, including interim measures, to clean up Contaminants in the environment, and to prevent or mitigate the migration of Contaminants at or from the Facility; and 3) to implement such corrective measures.

Except as provided in Section III.W.1, this Consent Order fulfills the requirements for corrective action for releases of hazardous waste or hazardous constituents under sections 3004(u) and (v) and 3008(h) of RCRA, 42 U.S.C. §§ 6924(u) and (v) and 6928(h), sections 74-4-4(A)(5)(h) and (i), 74-4-4.2(B), and 74-4-10(E) of the HWA, and their implementing regulations at 40 C.F.R. Part 264, Subpart F (incorporated by 20.4.1.500 NMAC). This Consent Order also addresses corrective action for releases of nitrate and perchlorate pursuant to section 74-9-36(D) of the SWA.

This Consent Order contains no requirements for radionuclides or the radioactive portion of mixed waste. Therefore, any radionuclides found in any media at the Facility shall not be subject to this Consent Order or any enforcement action relating to this Consent Order. Notwithstanding the foregoing, Respondents may voluntarily include in any plan, report or other document submitted pursuant to this Consent Order, including work plans, references to, or information concerning, radionuclides or the radioactive portion of mixed waste. The voluntary inclusion of such radionuclide information by the Respondents in any plan, report or other document shall not be enforceable by any entity, including the State, under this Consent Order, because such information falls wholly outside the requirements of this Consent Order.

III.B. DEFINITIONS

Unless otherwise expressly provided herein, the terms used in this Consent Order shall have the meanings set forth in the HWA, RCRA, and their implementing regulations.

"Administrative Record" means the administrative record supporting and otherwise relating to the requirements of this Consent Order, compiled as of the effective date of this Consent Order, which forms the basis for the terms of this Consent Order. The Administrative Record includes the full record relating to the Respondents' current Hazardous Waste Facility Permit (permit No. NM5890110518), and those documents submitted in writing by the Department, Respondents, or the public, as of the effective date of the Consent Order for inclusion in the Administrative Record. The Administrative Record is available for review at the Department's Hazardous Waste Bureau.

"Area of Concern" or "AOC" means any area that may have had a release of a hazardous waste or hazardous constituent, which is not a Solid Waste Management Unit.

"Consent Order" or "Order" means this Compliance Order on Consent.

"Contaminant" means any hazardous waste listed or identified as characteristic in 40 C.F.R. Part 261 (incorporated by 20.4.1.200 NMAC); any hazardous constituent listed in 40 C.F.R. Part 261, Appendix VIII (incorporated by 20.4.1.200 NMAC) and 40 C.F.R. Part 264, Appendix IX (incorporated by 20.4.1.500 NMAC); nitrate; and perchlorate. Contaminant does not include radionuclides or the radioactive portion of mixed waste.

"Day" means a calendar day, unless specified as a business day. "Business day" means Monday through Friday, excluding all federal and New Mexico State holidays.

"Department" means the New Mexico Environment Department, and any successor departments or agencies.

"DOE" means the United States Department of Energy, and any successor departments or agencies.

"EIB" means the New Mexico Environmental Improvement Board, and any successor departments or agencies.

"EPA" means the United States Environmental Protection Agency, and any successor departments or agencies.

"Facility" means the Sandia National Laboratories/New Mexico site owned by the United States Department of Energy, comprised of approximately 4.4 square miles and located on Kirtland Air Force Base, south of Albuquerque in Bernalillo County in central New Mexico. The Facility includes various test sites operated by the Respondents on KAFB land withdrawn from the public domain by the United States Department of the Air Force and the United States Department of Energy for military and research and development purposes, respectively.

"HWA" means the New Mexico Hazardous Waste Act, NMSA 1978, §§ 74-4-1 to 74-4-14.

"Groundwater" means interstitial water which occurs in saturated earth material and which is capable of entering a well in sufficient amounts to be utilized as a water supply.

"Hazard Index" or "HI" means the sum of more than one hazard quotient for multiple substances and/or multiple exposure pathways. The HI is calculated separately for chronic, subchronic, and shorter-duration exposures.

"Hazard Quotient" or "HQ" means the ratio of a single substance exposure level over a specified time period (e.g., subchronic) to a reference dose for that substance derived from a similar exposure period.

"Hazardous constituent" or "hazardous waste constituent" means any constituent identified in 40 C.F.R. Part 261, Appendix VIII (incorporated by 20.4.1.200 NMAC), and any constituent identified in 40 C.F.R. Part 264, Appendix IX (incorporated by 20.4.1.500 NMAC).

"Hazardous Waste" means any solid waste or combination of solid wastes which because of its quantity, concentration, or physical, chemical, or infectious characteristics meets the description set forth in NMSA 1978, § 74-4-3(K), and is listed as a hazardous waste or exhibits a hazardous waste characteristic under 40 C.F.R. Part 261 (incorporated by 20.4.1.200 NMAC).

"Hazardous Waste Regulations" means the New Mexico Hazardous Waste Management Regulations, 20.4.1 NMAC.

"Interim Measures" or "IM" means actions that can be implemented to minimize or prevent migration of Contaminants and to minimize or prevent actual or potential human or ecological exposure to Contaminants while long-term, final corrective action remedies are evaluated and, if necessary, implemented.

"Landfill" means a disposal facility or part of a facility where hazardous waste is placed in or on the land and which is not a pile, a land treatment facility, a surface impoundment, an underground injection well, a salt dome formation, a salt bed formation, an underground mine, a cave, or a corrective action management unit.

"Maximum Contaminant Level" or "MCL" means a maximum contaminant level adopted by EPA under the federal Safe Drinking Water Act, 42 U.S.C. §§ 300f to 300j-26, or by the Environmental Improvement Board under the Environmental Improvement Act, NMSA 1978, § 74-1-8(A)(2) (2000).

"Mixed Waste" means waste that contains both hazardous waste subject to the HWA and RCRA and source, special nuclear or byproduct material subject to the Atomic Energy Act of 1954, as amended.

"Operable Unit" or "OU" means any individual SWMU or AOC or a group of SWMUs or AOCs based on geographic location (i.e., technical area or test area) or, in the case of OU 1295, SWMUs or AOCs grouped by similar construction, transport pathways, exposure routes, receptors, potential risk, and potential locations for Contaminants to accumulate.

"Parties" means collectively the New Mexico Environment Department, the United States Department of Energy, and Sandia Corporation, and the term "Party" shall refer to one of these three entities.

"Permit" means the RCRA Permit issued to the Respondents for the Facility to operate a hazardous waste treatment and storage facility, EPA ID No. NM5890110518, as it may be modified or amended.

"Pit" means an earthen surface impoundment or excavation constructed to retain waste.

"RCRA" means the Federal Resource Conservation and Recovery Act, 42 U.S.C. §§ 6901 to 6992k, also known as the Solid Waste Disposal Act.

"Respondents" means the United States Department of Energy and Sandia Corporation.

"SWA" means the New Mexico Solid Waste Act, NMSA 1978, §§ 74-9-1 to 74-9-42.

"Sandia" means Sandia Corporation, a corporation organized under the laws of the State of Delaware, doing business in the State of New Mexico.

"Secretary" means the Secretary of the New Mexico Environment Department or designated representative.

"Solid Waste" means any garbage, refuse, sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations, and from community activities, but does not include solid or dissolved materials in domestic sewage, or solid or dissolved materials in irrigation return flows or industrial discharges which are point sources subject to permits under section 402 of the Federal Water Pollution Control Act, as amended (86 Stat. 880), or source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954, as amended (68 Stat. 923).

"Solid Waste Management Unit" or "SWMU" means any discernible unit at which solid waste has been placed at any time, and from which the Department determines there may be a risk of a release of hazardous waste or hazardous constituents, irrespective of whether the unit was intended for the management of solid or hazardous waste. Such units include any area at the Facility at which solid wastes have been routinely and systematically released; they do not include one-time spills. *See* 61 Fed. Reg. 19431, 19442-43 (May 1, 1996).

"State of New Mexico" or "State" means the State of New Mexico, including all of its departments, agencies, and instrumentalities.

"Surface Impoundment" means a facility or part of a facility which is a natural topographic depression, man-made excavation, or diked area formed primarily of earthen material (although it may be lined with man-made materials), which is designed to hold an accumulation of liquid wastes or wastes containing free liquids, and which is not an injection well. Examples of surface impoundments are holding, storage, settling, and aeration pits, ponds, and lagoons.

"Technical Area" or "TA" means an administrative unit of area established to encompass operations at the Facility.

"Trench" means a long, narrow depression or excavation, natural or artificial, in the earth's surface.

"United States" means the United States of America, including all of its departments, agencies, and instrumentalities.

"WQCC" means the New Mexico Water Quality Control Commission, and any successor agencies, boards, or commissions.

"Water Quality Control Commission (WQCC) Regulations" means the regulations at 20.6.2 NMAC promulgated by the New Mexico Water Quality Control Commission governing the quality of groundwater and surface water in New Mexico.

"Watershed" means a region or basin drained by, or contributing waters to, a river, stream, lake, or other body of water and separated from adjacent drainage areas by a divide such as a mesa, ridge or other geologic feature.

III.C. HEADINGS

Any section or paragraph headings in this Consent Order are provided solely as a matter of convenience to the reader and shall not be construed to alter the meaning of any provision of this Consent Order.

III.D. JURISDICTION

This Consent Order is issued to DOE and Sandia pursuant to section 74-4-10 of the HWA. It is also issued under section 74-9-36(D) of the SWA, for the limited purpose of addressing the corrective action requirements concerning nitrate and perchlorate set forth in this Order. Although Respondents consent to SWA jurisdiction for enforcement of the corrective action requirements of this Consent Order relating to nitrate and perchlorate, they otherwise reserve any and all rights, claims, and defenses with respect to the applicability of the requirements of the SWA.

Section 6001 of RCRA provides, in part, that "[e]ach department, agency, and instrumentality of the executive …branch[] of the Federal Government (1) having jurisdiction over any solid waste management facility or disposal site, or (2) engaged in any activity resulting, or which may result, in the disposal or management of solid waste or hazardous waste shall be subject to, and comply with, all Federal, State, interstate, and local requirements, both substantive and procedural . . ., respecting control and abatement of solid waste or hazardous waste disposal and management in the same manner, and to the same extent, as any person is subject to such requirements." 42 U.S.C. § 6961.

III.E. TERM OF CONSENT ORDER

III.E.1. Effective Date

The effective date of this Consent Order is the date on which all of the Parties have signed the Consent Order.

III.E.2. Termination Date

Respondents shall notify the Department, in writing, when all of the requirements of this Consent Order, except those requirements concerning record preservation in Section III.Q, have been completed. Respondents' notice to the Department shall include a copy of all of the certificates of completion, as described in Section VII.D.6, obtained by Respondents pursuant to this Consent Order.

If the Department identifies any requirements of this Consent Order that have not been satisfactorily completed and for which a certificate of completion has not been obtained, it will notify the Respondents in writing. The Department's notice shall identify which requirements of the Consent Order the Department believes have not been met and which activities must be undertaken by Respondents to satisfy those requirements.

This Consent Order shall terminate on the date that the Respondents receive written notice from the Department that the Respondents have demonstrated that the terms of this Consent Order, with the exception of record preservation, have been satisfactorily completed. The Department shall provide such written notice within 60 days of receipt of the Respondents' notice pursuant to this Section (III.E.2). If, however, a Class 3 Permit Modification request pursuant to Section III.W.3.b is pending at the close of the 60-day period, the Department shall provide the written notice pursuant to this Paragraph within 15 days of the date on which the Department takes final agency action on the Class 3 Permit Modification request. Sections III.Q (Record Preservation), III.S (State's Covenant Not to Sue), and III.T (State's Reservation of Rights) shall survive the termination of this Consent Order as an agreement among the Parties.

III.F. BINDING EFFECT

This Consent Order shall apply to and bind the State, its officers when acting in their official capacity but not in their individual capacity, its agents, successors and assigns, and the Respondents, their officers when acting in their official capacity but not in their individual capacity, their agents, successors, and assigns.

The Respondents' obligations under this Consent Order may be satisfied by the actions of either DOE or Sandia Corporation, or by both of them. However, the Respondents shall be jointly and severally responsible for, and liable for any failure to carry out, all their obligations under this Consent Order.

The obligations of Sandia Corporation under this Consent Order shall terminate upon the effective date of the termination or expiration of its prime contract with DOE. If the contract between DOE and Sandia Corporation is terminated prior to such time as the obligations of this Consent Order are fully completed, DOE agrees to give the Department at least 30 days notice prior to a change in operating contractor and to impose the same obligations as are now imposed upon Sandia Corporation under this Consent Order upon any successor contractor or other applicable entity.

The Respondents shall require all contractors, subcontractors, laboratories, and consultants retained to conduct or monitor any portion of the work performed pursuant to this Consent Order to comply with and abide by the terms of this Consent Order.

III.G. STIPULATED PENALTIES

III.G.1. General Process and Notice

For each failure of the Respondents to submit the items listed in Table XI-2 of this Consent Order by the deadlines specified in that Table, the Department may assess a stipulated penalty in the amounts and pursuant to the procedures set forth in this Section (III.G). The Department may also assess a stipulated penalty in the amounts and pursuant to the procedures set forth in this Section if a submittal listed in Table XI-2 does not substantially comply with the specifications set forth in this Consent Order; provided, however, that the Department shall bear the burden of proof of demonstrating that the submittal does not substantially comply with the specifications of this Consent Order. Stipulated penalties may not be assessed for any reason other than the two set forth in this Paragraph.

If the Department seeks to assess stipulated penalties pursuant to this Section, it shall provide written notice of that fact to the Respondents. Such written notice shall state the violation for which penalties are being assessed. If the Department issues such written notice within 15 days of the submittal deadline identified in Table XI-2, stipulated penalties may be assessed beginning with the day after the submittal deadline date. If the Department provides written notice 16 days or more after the submittal deadline, the Department may only assess stipulated penalties beginning on the date that written notice was given to the Respondents pursuant to this Section.

III.G.2. Stipulated Penalty Amounts

Consistent with the beginning dates for assessment of stipulated penalties set forth in Section III.G.1, the Respondents shall pay to the State the following stipulated penalties for each day of noncompliance:

Days 1 through 30:	$1,000.00 per day
Days 31 and beyond	$3,000.00 per day

The Department may, in its discretion, agree to reduce or waive the stipulated penalties that would otherwise be due under this Section (III.G.). Such decision shall not be subject to judicial review.

III.G.3. Revisions to Specifications or Schedules

The Respondents shall not be liable for stipulated penalties for failure to take any action by a deadline specified in Table XI-2 of this Consent Order if (1) the Department has approved an alternate schedule in writing, through either an approved work plan or other document, or (2) a schedule has been modified pursuant to the provisions for modification in Section III.J. If any deadline for a submittal is modified, the Parties shall modify Tables XI-2 and XI-3 to reflect the revised deadline. The Respondents must comply with the revised deadline approved by the Department and that deadline, if not met, shall be the basis for stipulated penalties pursuant to Section III.G.1. The Respondents shall not be liable for stipulated penalties based on the Department's belief that a submission does not substantially comply with the requirements of this Consent Order if the submittal substantially complies with alternative requirements approved by the Department, in writing, through a work plan or other document under this Consent Order.

III.G.4. Procedure for Payment

Stipulated penalties under this Section shall be due within 45 days from the date that the Department makes a written demand for payment of stipulated penalties in accordance with Section III.G.1 (General Process and Notice) and III.L (Notice to Parties). Payment shall be by check, made payable to the State of New Mexico, and shall be delivered to:

Chief, Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-2567

The check shall be accompanied by a transmittal letter referencing this Consent Order. A copy of the transmittal letter shall be delivered to the attorney for the Department at the following address:

First Class mail address:
Office of General Counsel
New Mexico Environment Department
Post Office Box 26110
Santa Fe, New Mexico 87502

Overnight delivery address:
Office of General Counsel
New Mexico Environment Department
1190 St., Francis Drive
Santa Fe, New Mexico 87501

III.G.5. Interest

Interest shall accrue on all stipulated penalties not paid when due at the rate specified in 28 U.S.C. § 1961. Interest shall accrue from the date the penalty is due until the date it is actually paid.

III.G.6. Reservation

The Department reserves the right to seek other appropriate relief, in lieu of stipulated penalties under this Section (III.G), for any failure of the Respondents to comply with any requirement, including schedules, of this Consent Order. If, however, the Department elects to assess stipulated penalties pursuant to the provisions of this Section (III.G), the State will not seek a separate civil penalty or other monetary relief for the alleged deficiency identified in the Department's notice under Section III.G.1.

III.H. FORCE MAJEURE

III.H.1. General

For the purposes of this Consent Order, "force majeure" shall mean any event arising from causes beyond the reasonable control of the Respondents or their respective agents, contractors, or employees that delays or prevents the performance of any of the obligations of the Respondents under this Consent Order and that could not be overcome by due diligence. A force majeure shall not include unanticipated or increased costs or expenses associated with the implementation of this Consent Order.

III.H.2. Examples of Force Majeure

A force majeure could include, but is not limited to:

1. Acts of God, natural disasters such as fire or flood, war, terrorism, insurrection, civil disturbance, or explosion;
2. A federal government shut down, such as the one that occurred in 1995 and 1996;
3. Unanticipated breakage or accident to machinery, equipment or lines of pipe;
4. Restraint by court order;
5. Inability to obtain, at reasonable cost, any necessary authorizations, approvals, permits or licenses due to action or inaction of any governmental agency or authority other than DOE; and
6. Delays caused by compliance with applicable statutes or regulations governing contracting, procurement or acquisition procedures.

The Parties recognize that the events set forth above are merely examples of potential force majeure. Any force majeure claimed by the Respondents, whether identified in the above list or not, must meet the definition of force majeure in Section III.H.1. The Department reserves its right to evaluate each force majeure claimed by Respondents and determine whether the facts associated with such claimed force majeure meet the definition of force majeure in Section

III.H.1. The Parties further agree that the absence of a type of force majeure from the list of examples set forth herein does not create any presumption or evidence that such event does not constitute a force majeure.

III.H.3. Procedure for Claiming Force Majeure

If any event occurs which causes or may cause a delay in, or which prevents or may prevent, the performance of any obligations of the Respondents under this Consent Order, the Respondents shall notify the Department orally, or in writing in accordance with Section III.L (Notice to Parties), within 72 hours of when the Respondents first knew that the event might cause a delay. Within seven business days of the Respondents' verbal notification to the Department, the Respondents shall provide a written notice to the Department in accordance with Section III.L (Notice to Parties). The notice shall describe in detail: a) the cause or causes of the delay; b) the expected duration of the delay, including any obligations that would be affected; c) the actions taken or to be taken by the Respondents to prevent or minimize the delay; and d) the timetable by which those actions will be implemented. The Respondents shall take all reasonable actions to prevent or minimize any such delay. The Respondents' failure to provide notice pursuant to the terms of this Paragraph shall constitute a waiver of any claim of force majeure as to the event in question.

The Department will notify the Respondents, in writing in accordance with Section III.L (Notice to Parties) whether it agrees or disagrees that a force majeure has occurred, and will provide such notice within seven business days after receipt of the Respondents' notice of the event. If the Department agrees in writing that a delay or anticipated delay is attributable to a force majeure event, as defined in Section III.H.1, the time for performance of the affected obligation or obligations will be extended for a period not to exceed the actual delay resulting from the force majeure event, and stipulated penalties shall not be due for such delay. If the Department does not agree that a delay or anticipated delay is attributable to a force majeure event, it will notify the Respondents in writing and provide the basis for its conclusion.

III.I. DISPUTE RESOLUTION

Any dispute that arises under this Consent Order shall be subject to the procedures of this Section (III.I), unless the Consent Order expressly excludes such dispute from dispute resolution.

III.I.1. Informal Negotiations

Any dispute that arises under this Consent Order shall in the first instance be the subject of informal negotiations among or between the Parties to the dispute. The period for informal negotiations shall not exceed ten business days from the date the dispute arises, unless the period is extended by written agreement of the Parties to the dispute. The complaining Party (or Parties) shall send the other Party (or Parties) a written notice of dispute by overnight mail, facsimile, or hand delivery in accordance with Section III.L (Notice to Parties). Such notice shall describe in detail the disputed issue and propose a resolution. The dispute shall be considered to have arisen when the receiving Party(ies) receives the written notice of dispute from the complaining Party(ies).

III.I.2. Tier 1 Negotiations

If the Parties are unable to resolve a dispute by informal negotiation under Section III.I.1, the dispute shall be elevated to the Department Director of the Water and Waste Management Division, the Assistant Manager for Facilities and Project Management for the DOE Sandia Site Office, and the Director of the Sandia GeoScience and Environment Center for Sandia Corporation (the "Tier 1 Officials"). Within seven business days after the expiration of the informal dispute resolution period, each of the Parties to the dispute shall submit a written statement of position to the Tier 1 Officials. The Tier 1 Officials shall review the written statements of position and shall meet and confer in an attempt to resolve the dispute. The period for Tier 1 negotiations shall not exceed five business days from the date the Tier 1 Officials receive the Parties' statements of position, unless the period is extended by written agreement of the Parties to the dispute.

III.I.3. Tier 2 Negotiations

If the Parties are unable to resolve a dispute by Tier 1 negotiations under the preceding Paragraph, the matter shall be immediately elevated to the Department Deputy Secretary, the Manager of the DOE Sandia Site Office, and the Vice President of the Sandia Energy, Information and Infrastructure Surety Division (the "Tier 2 Officials"). The Tier 2 Officials shall review the Parties' written statements of position and shall meet and confer in an attempt to resolve the dispute. The period for Tier 2 negotiations shall not exceed five business days from the date the Tier 2 Officials receive the statements, unless the period is extended by written agreement of the Parties to the dispute.

III.I.4. Tier 3 Negotiations

If the Parties are unable to resolve a dispute by Tier 2 negotiations under the preceding Paragraph, the matter shall be immediately elevated to the Department Secretary and the Principal Deputy Administrator or Chief Operating Officer of the National Nuclear Security Administration within DOE (the "Tier 3 Officials"). The Tier 3 Officials shall review the Parties' written statements of position and shall meet and confer in an attempt to resolve the dispute. The period for Tier 3 negotiations shall not exceed three business days from the date the Tier 3 Officials receive the statements, unless the period is extended by written agreement of the Parties to the dispute.

III.I.5. Other Remedies

If the Parties are unable to resolve a dispute by Tier 3 negotiations under the preceding Paragraph, the Parties may agree to seek to resolve the dispute through non-binding mediation or another non-binding dispute resolution method, or the Parties may pursue any available legal remedy to resolve the dispute, which may include, for the Department, bringing an enforcement action or, for the Respondents, petitioning a court to resolve the matter. The decision or other action forming the basis of the dispute shall be deemed final for purposes of judicial review once the Tier 3 negotiations are complete.

III.I.6. Extension of Deadlines

The deadline for any obligation of the Respondents under this Consent Order that is directly affected by a dispute raised pursuant to this Section (III.I) shall be extended by a period of time not to exceed the actual time taken to resolve the dispute in accordance with the procedures of this Section (III.I). The invocation of the dispute resolution process under this Section (III.I) shall not, however, extend, postpone, or affect in any way any obligations of the Respondents under this Consent Order not directly in dispute, unless otherwise agreed by the Department in writing. Stipulated penalties attributable to the disputed matter shall continue to accrue, but payment shall be stayed pending resolution of the dispute. If the Department prevails in the dispute, the Respondents shall pay all accrued stipulated penalties, plus accrued interest, in accordance with Section III.G.

III.J. MODIFICATION

III.J.1. Procedures for Modifying any Provision of the Consent Order

The Parties may modify any of the provisions of this Consent Order. Except as provided in Sections III.L (Notice to Parties) and III.M (Work Plans and Schedules), any such modifications must be in writing and signed by all Parties. Any modification shall be subject to the preservation of procedural rights in Section III.W.5.

III.J.2. Provisions Governing Extensions of Time

The Respondents may seek an extension of time in which to perform a requirement of this Consent Order, for good cause, by sending a written request for extension of time and proposed revised schedule to the Department. The request shall state the length of the requested extension and describe the bases for the request. The Department will respond in writing to any request for extension within ten business days following receipt of the request. If the Department denies the request for extension, it will state the reasons for the denial. If the Department does not respond in writing within ten business days, the requested extension shall automatically be granted.

As set forth in Section III.M.2 (Time for Department Review), a failure by the Department to meet the expected review times identified in Table XI-2, shall result in an automatic extension of time for Respondents.

III.K. COMPLIANCE WITH APPLICABLE LAWS

III.K.1. Generally

The Respondents shall undertake all actions required by this Consent Order in accordance with the requirements of all applicable federal, state, and local laws and regulations. Nothing in this Consent Order shall be construed as relieving the Respondents of their obligation to comply with applicable law.

III.K.2. Atomic Energy Act, as amended

The Atomic Energy Act (AEA), as amended, 42 U.S.C. §§ 2011 *et seq.*, and the Department of Energy Organization Act, 42 U.S.C. §§ 7101 *et seq.*, and their implementing regulations, orders and directives, require DOE to protect the public health and safety, and, to this end, exclusively authorize DOE to regulate nuclear safety at its facilities. DOE's authority to regulate nuclear safety is governed by the provisions of 10 C.F.R. Parts 830 through 835. Pursuant to those regulations, DOE is required to review and approve all activities and work, including activities and work under this Consent Order, to ensure that its statutory and regulatory responsibilities for nuclear safety are met. In making determinations concerning nuclear safety, DOE follows the requirements of 10 C.F.R. Parts 830 through 835. Nothing in this Consent Order shall require the performance of any work or activity that is inconsistent with any nuclear safety requirement implemented pursuant to 10 C.F.R. Parts 830 through 835. If such an inconsistency arises, the Respondents shall provide appropriate documentation demonstrating the inconsistency to the Department.

III.K.3. Anti-Deficiency Act

No provision of this Consent Order shall be interpreted as, or constitute, a commitment or requirement that the United States shall obligate or pay funds in contravention of the Anti-Deficiency Act, 31 U.S.C. § 1341. Payment or obligation of funds by the United States is subject to the availability of appropriated funds.

III.L. NOTICE TO PARTIES

Whenever under the terms of this Consent Order, any Party is required to provide notice to any other Party, or to submit any plan, report, or other document called for under this Consent Order, such notice, plan, report or other document shall be sent or directed to the following persons.

As to the Department, either of the following:

Chief, Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6303
Telephone: (505) 428-2512
Telefax: (505) 428-2567

Albuquerque Group Manager
Hazardous Waste Bureau
New Mexico Environment Department
c/o Sandia National Laboratories
P.O. Box 5800 / MS1089
Albuquerque, New Mexico 87185
Telephone: (505) 284-5086

Telefax: (505) 284-2617

As to DOE:

First Class mail address:
Environmental Restoration Project Manager
U.S. Department of Energy / National Nuclear Security Administration
Sandia Site Office
Post Office Box 5400
Albuquerque, New Mexico 87185-5400
Telephone: (505) 845-5326
Telefax: (505) 845-4671

Overnight delivery address:
Environmental Restoration Project Manager
U.S. Department of Energy / National Nuclear Security Administration
Sandia Site Office
Pennsylvania & H Streets
Albuquerque, New Mexico 87116

As to Sandia:

First Class mail address:
Environmental Restoration Project Manager
Sandia National Laboratories
P.O. Box 5800, Mailstop 1089
Albuquerque, New Mexico 87185
Telephone: (505) 284-2577
Telefax: 505-284-2616

Overnight delivery address:
Environmental Restoration Project Manager
Sandia National Laboratories
1515 Eubank Boulevard SE
Albuquerque, New Mexico 87123

Any Party may change the name, title, address, telephone number or fax number of the contact person noted above by providing written notice to the other Parties. The provisions of Section III.J.1 (Modification) shall not apply to such changes.

III.M. WORK PLANS AND SCHEDULES

III.M.1. General

All work plans and schedules approved pursuant to this Consent Order are incorporated into this Consent Order and become enforceable requirements of this Consent Order, as of the date of receipt by Respondents of the Department's written approval. Notwithstanding the preceding sentence, any reference to, or information concerning, radionuclides or the radioactive portion of mixed waste contained in any work plan or schedule or other document submitted under this Consent Order shall not be enforceable under this Consent Order and shall not constitute the basis for any enforcement action under this Consent Order.

All work plans and schedules that the Respondents are required to prepare under this Consent Order shall be submitted to the Department for review and approval. Upon review of each work plan or schedule, the Department will send Respondents a written notice of approval or disapproval, and will state in writing the deficiencies and other reasons for any disapproval. A notice of disapproval may include modifications to the work plan schedule necessary for the Department's approval, or other written comments. Upon receipt of a written notice of disapproval, the Respondents shall revise the work plan or schedule to incorporate all modifications and comments, and otherwise correct all deficiencies that gave rise to the disapproval. Within 30 days after Respondents receipt of a written disapproval, Respondents shall resubmit the revised work plan or schedule to the Department for approval.

The Department may require work in addition to that specified in an approved work plan, if the Department demonstrates and documents, with appropriate technical and other documentation, that the approved work plan is insufficient to achieve the objectives stated in the work plan and that the additional work is necessary.

In submitting a work plan or schedule to the Department for review and approval, the Respondents may propose alternate requirements that differ from those in this Consent Order. Any such proposal shall be in writing, shall specifically identify each proposed alternate requirement and how it differs from the requirement in the Consent Order, and shall be accompanied by a detailed written justification. If the Department approves in writing a work plan with alternate requirements, the alternate requirements of the work plan, rather than the requirements of the Consent Order, shall be applicable and enforceable.

Respondents shall comply with all applicable federal, state, and local laws or regulations, and shall obtain all necessary approvals or permits prior to conducting the activities required by this Consent Order and performing the obligations required hereunder. The Department makes no representation with respect to approvals and permits required by federal, state and local laws or regulations other than those required under the HWA and SWA and their implementing regulations.

III.M.2. Time for Department Review

The Department anticipates that it will review all deliverables that the Respondents are required to prepare pursuant to this Consent Order within the Department expected review times set forth in Table XI-2. Timely review constitutes sending the Respondents a written notice of approval or disapproval within the review time specified in Table XI-2. If the Department takes additional time to send the Respondents a written notice of approval or disapproval beyond the review time specified in Table XI-2, the schedule for any subsequent work or deliverable that is dependent upon such review shall be automatically extended by a period equal to such additional time. No stipulated penalties or any other liability for noncompliance with the Consent Order attributable to the Department's failure to respond within the review times specified in Table XI-2 shall accrue to the Respondents.

III.N. OFFSITE ACCESS

To the extent any requirement of this Consent Order, including any work plan approved under this Consent Order, requires access to property not owned or controlled by DOE, Respondents shall use their best efforts to obtain access from the present owners of such property to conduct required activities, and to allow the Department access to such property to oversee such activities. In the event that access is not obtained when necessary, the Respondents shall notify the Department in writing regarding their best efforts and their failure to obtain such access.

III.O. ENTRY AND INSPECTION

In accordance with section 74-4-4.3 of the HWA, for purposes of enforcing the requirements of this Consent Order, the Respondents shall allow any authorized representative of the Department to enter the Facility at reasonable times and in accordance with applicable security requirements: (1) to inspect the Facility; (2) to obtain samples of any hazardous waste, soil, surface water, or ground water; and (3) to inspect and copy documents relating to this Consent Order, subject to normal security restrictions related to classified information.

The Respondents shall notify the Department in writing or by e-mail or fax of any field sampling activities undertaken pursuant to any plan or requirement of this Consent Order a minimum of 15 days prior to the sampling being conducted as required to meet the terms of this Consent Order, and shall provide the Department the opportunity to collect split samples upon request of the Department. The 15-day notice requirement of this Paragraph shall not apply to sampling of surface water runoff during storm events. For such events, Respondents shall provide the Department as much advance notice as is practicable.

The Respondents shall notify the Department in writing or by e-mail or fax a minimum of 15 days prior to the implementation of any plan required under this Consent Order.

Nothing in this Section (III.O) shall be construed to limit or impair in any way the inspection and entry authority of the Department under the HWA, the Hazardous Waste Regulations, RCRA, or any other applicable law or regulations.

III.P. AVAILABILITY OF INFORMATION

In accordance with section 74-4-4.3 of the HWA, the Respondents shall, within a reasonable time after receipt of a request from any authorized representative of the Department, furnish information to the Department relating to hazardous wastes that are or have been managed at the Facility.

Nothing in this Section (III.P) shall be construed to limit or impair in any way the information gathering authority of the Department under the HWA, the Hazardous Waste Regulations, RCRA, or any other applicable law or regulation.

III.Q. RECORD PRESERVATION

Until ten years after the Respondents' receipt of the Department's written notice of termination of the Consent Order pursuant to Section III.E, the Respondents shall maintain all records, documents, data, and other information required to be prepared under this Consent Order. The only exception to this requirement relates to those SWMUs for which a Class 3 Permit Modification request for corrective action complete with or without controls has been granted by the Department pursuant to the Permit (*see* Section III.W Integration with Permit). The record preservation requirements for such SWMUs shall be set forth in the Permit and those permit requirements shall control and supersede the requirements of this Section. Nothing herein shall be construed as a waiver of any attorney client, work product or other privilege that the Respondents might otherwise possess.

III.R. PENDING ACTIONS

In consideration of the Respondents' agreement to perform the work under this Consent Order, the Department hereby withdraws and vacates the "Secretary's Determination of an Imminent and Substantial Endangerment to Health and the Environment" issued by the Department on September 3, 2002 under the HWA, NMSA 1978, §§ 74-4-10.1 and 74-4-13 (the Determination).

The United States and Sandia have filed lawsuits challenging the Endangerment Determination. Given that this Consent Order vacates the Endangerment Determination, and thereby renders the lawsuits moot, the United States and Sandia will dismiss their respective federal and state court lawsuits, which are captioned as follows: 1) *United States v. Ron Curry* (Civil No. 02-1245 MCA/ACT) (D.N.M.); 2) *United States v. Ron Curry* (Ct. App. No. 23,492) (N.M. Ct. App.); 3) *Sandia Corporation v. Ron Curry* (Civil No. 02-1246 LFG/RHS) (D.N.M.); and 4) *Sandia Corporation v. Ron Curry* (Ct. App. No. 23,480) (N.M. Ct. App.).

III.S. STATE'S COVENANT NOT TO SUE

In consideration of the actions that will be performed by the Respondents under the terms of this Consent Order, and except as specifically provided in Section III.T (State's Reservation of Rights), the State covenants not to sue or take administrative action against the Respondents, their respective officers, agents, successors, or assigns, under the HWA, the SWA, or RCRA, for matters addressed in this Consent Order. This covenant not to sue shall take effect upon the

Effective Date of this Consent Order. This covenant not to sue extends only to the Respondents and their respective officers, agents, successors, and assigns and does not extend to any other person. This covenant not to sue shall survive the termination of this Consent Order.

III.T. STATE'S RESERVATION OF RIGHTS

As provided in Section III.U, nothing herein shall prevent the State from seeking legal or equitable relief, either administratively or judicially, to enforce the requirements of this Consent Order. Moreover, nothing herein shall prevent the State from taking administrative action to implement the requirements of this Consent Order (e.g., approving or disapproving work plans, issuing certificates of completion). Finally, nothing herein shall prevent the State from taking appropriate action to address conditions at the Facility that constitute an emergency situation or that present an immediate threat to public health or the environment.

The covenant not to sue set forth in Section III.S does not pertain to any matters not addressed in this Consent Order. The State reserves, and this Consent Order is without prejudice to, all rights against the Respondents with respect to all such other matters, including, but not limited to, the following:

1. Conditions unknown to the Department at the time of issuance of a completion certificate pursuant to Section VII.D.6 of this Consent Order, which are discovered following issuance of the completion certificate, where the previously unknown conditions together with other relevant information indicate that a particular completion certificate is not protective of human health or the environment;

2. Information unknown to the Department at the time of issuance of a completion certificate pursuant to Section VII.D.6 of this Consent Order, which is discovered following issuance of the completion certificate, where the new information together with other relevant information indicate that a particular completion certificate is not protective of human health or the environment;

3. Liability arising from the past, present, or future disposal or release of Contaminants outside the Facility to the extent the State obtains information concerning such disposal or release following termination of this Consent Order and such information was not available to the Department at the time of termination;

4. Liability arising from the future disposal or release of Contaminants at the Facility to the extent the State obtains information concerning such disposal or release following termination of this Consent Order and such information was not available to the Department at the time of termination;

5. Liability for damages for injury to, destruction of, or loss of natural resources and the costs of any natural resource damage assessment;

6. Criminal liability; and

7. Liability for violation of federal or state law, which occurs during or after implementation of the corrective action.

Although this Consent Order does not address radionuclides or radionuclide contamination at the Facility, the State reserves the right to bring any action, including judicial or administrative action, under any appropriate authority, to compel the Respondents to monitor and report radionuclide contamination at or from the Facility, to consider such radionuclide contamination in conducting risk assessment, and to clean up such radionuclide contamination. Respondents reserve all available defenses to any such action.

III.U. ENFORCEMENT

This Consent Order is an enforceable document. If the Respondents violate any requirements of this Consent Order, the State's sole remedy for such noncompliance shall be to enforce those requirements pursuant to applicable law, subject, however, to the provisions of Section III.G.6, which apply where the State has sought stipulated penalties pursuant to this Consent Order.

The State maintains that it may take the following actions, or some combination of the following actions, to enforce the requirements of this Consent Order: issue a compliance order under section 74-4-10 of the HWA seeking injunctive relief or civil penalties for Respondents' noncompliance with the requirements of the Consent Order; file a civil action under sections 74-4-10 and 74-4-10.1(E) of the HWA or section 7002(a) of RCRA, 42 U.S.C. § 6972(a), seeking injunctive relief or civil penalties for alleged violations of the Consent Order; and file an action seeking criminal penalties under section 74-4-11 of the HWA. The State also maintains that each requirement of this Consent Order is an enforceable "requirement" of the HWA within the meaning of section 74-4-10 and an enforceable "requirement" of RCRA within the meaning of section 7002(a)(1)(A), 42 U.S.C. § 6972(a)(1)(A). The State further maintains that the list of authorities identified in this Paragraph is not exhaustive and reserves all rights to take any action authorized by law to enforce the requirements of this Consent Order. Finally, the State maintains that citizens may sue to enforce the requirements of this Consent Order pursuant to section 7002(a) of RCRA, 42 U.S.C. § 6972(a), if Respondents violate those requirements.

The Respondents reserve any and all rights and defenses to any enforcement action taken by the State or any citizen, and nothing in this Consent Order will constitute a waiver of such rights or defenses.

III.V. RELATIONSHIP TO WORK COMPLETED

This Consent Order shall be construed to avoid duplication of work already satisfactorily completed as determined by the Department pursuant to its current HSWA authority or by EPA pursuant to its HSWA authority prior to delegation of the RCRA program to the State. Investigations and other work that have been satisfactorily completed prior to the effective date of this Consent Order, that fulfill the substantive requirements of this Consent Order, and that

have been approved by the Department or EPA, in writing, shall be deemed to comply with this Consent Order.

III.W. INTEGRATION WITH PERMIT

III.W.1. General

The Department has determined that all corrective action for releases of hazardous waste or hazardous constituents at the Facility, required by sections 3004(u) and (v) of RCRA, 42 U.S.C. §§ 6924(u) and (v), and sections 74-4-4(A)(5)(h) and (i) and 74-4-4.2(B) of the HWA, shall be conducted solely under this Consent Order and not under the current or any future Hazardous Waste Facility Permit ("Permit"), with the exception of the following four items which will be addressed in the Permit and not in this Consent Order: (1) new releases of hazardous waste or hazardous constituents from operating units at the Facility; (2) the closure and post-closure requirements of 20.4.1.500 NMAC (incorporating 40 C.F.R. Part 264, Subpart G), as they apply to operating units at the Facility; (3) implementation of the controls, including long-term monitoring, for any SWMU on the Permit's Corrective Action Complete With Controls list, which is described in Section III.W.3.b; and (4) any releases of hazardous waste or hazardous constituents that occur after the date on which this Consent Order terminates pursuant to Section III.E.2. The Department has determined that setting forth corrective action requirements in this Consent Order in lieu of the Permit fully complies with the requirements of section 3004 of RCRA, 42 U.S.C. § 6924, and section 74-4-4.2(B) of the HWA.

III.W.2. Effect of Consent Order on Permit

In addition to the four items listed in Section III.W.1 above, the Permit will include a list of SWMUs requiring corrective action under this Consent Order. That list is for tracking purposes only.

The Parties enter into this Consent Order based on their understanding that there shall be only one enforceable instrument for corrective action relating to the Facility, except as provided in Section III.W.1, and that such instrument is this Consent Order. For the purposes of any enforcement action taken by the State or any third party, other than the items listed in Section III.W.1, compliance with the terms of this Consent Order constitutes compliance with the requirements for corrective action under RCRA and the HWA and their implementing regulations, including section 3004(u) and (v) of RCRA, 42 U.S.C. § 6924(u) and (v), 40 C.F.R. Part 264, Subpart F, sections 74-4-4.2(B) and 74-4-4(A)(5)(h) and (i) of the HWA and section 20.4.1.500 NMAC (incorporating 40 C.F.R. Part 264, Subpart F). Upon the effective date of this Consent Order, the sole mechanism for enforcing corrective action requirements, except as provided in Section III.W.1, shall be this Consent Order. The State will not take any action to enforce the corrective action requirements of the existing Permit, except as to those items listed in Section III.W.1.

Finally, this Consent Order sets forth corrective action requirements for nitrate and perchlorate, which are not hazardous wastes or hazardous constituents. The Department reserves any right it

may have to impose long-term monitoring or other activities relating to nitrate and perchlorate following issuance of a certificate of completion under this Consent Order. Such requirements shall not be imposed through this Consent Order, however.

III.W.3. Modification of Permit

III.W.3.a. Class 3 Permit Modification to Remove Corrective Action Requirements

The Facility Permit currently contains corrective action requirements. Given the Department's position that corrective action shall be conducted under this Consent Order and not under the Permit as provided in Section III.W.1, and the Parties' understanding that the sole enforceable mechanism for corrective action will be this Consent Order, except as provided in Section III.W.1, the Respondents intend to seek a Class 3 Permit Modification for the Permit pursuant to 20.4.1.900 NMAC (incorporating 40 C.F.R. § 270.42(c)) ("Permit Modification"). That Permit Modification request, consistent with Section III.W.1, will seek to remove all corrective action requirements of the Permit for releases of hazardous waste or hazardous constituents at the Facility, with the exception of the four items specifically identified in III.W.1. The Permit Modification request will also provide that the terms of this Consent Order are not enforceable as terms of the Permit, except as provided in Section III.W.1. Finally, as set forth in Section III.W.3.b, the Permit Modification request will authorize the Respondents to seek additional permit modifications to remove a SWMU from the list of SWMUs requiring corrective action to one of two lists identified in Section III.W.3.b concerning SWMUs for which corrective action is complete. The Department supports the Permit Modification.

III.W.3.b. Class 3 Permit Modification For Corrective Action Complete

Whenever the Respondents obtain a certificate of completion pursuant to the terms of this Consent Order for a SWMU or group of SWMUs, the Respondents can initiate a "Class 3 Permit Modification for Corrective Action Complete" pursuant to the terms of the Permit. The Permit Modification described in Section III.W.3.a will provide that once a Class 3 Permit Modification for Corrective Action Complete is granted, the SWMU or SWMUs that are the subject of that modification shall be removed from the list of SWMUs requiring corrective action and placed onto one of the following two lists: "Corrective Action Complete With Controls;" or "Corrective Action Complete Without Controls." These two lists are for informational purposes only and are not enforceable; provided, however, that where controls are identified for a SWMU, only those controls (e.g., institutional controls, engineered barriers, long-term monitoring and operation and maintenance) are enforceable under the Permit. The Department's determination that corrective action is complete for a SWMU placed on either the Corrective Action Complete With Controls list or the Corrective Action Complete Without Controls list will be subject to the State's reservation of rights for new information or unknown conditions. The Department must initiate a Permit modification if it seeks to require additional work at any SWMU contained on either of the two lists for Corrective Action Complete.

III.W.4. Renewal of Permit

The requirements of this Consent Order shall not terminate upon renewal of the Permit issued to the Respondents. The renewed Permit, and any future modifications, renewals, or reissuance of the Permit, will not include any corrective action requirements, nor any other requirement that is duplicative of this Consent Order. The Permit or any renewed Permit can include the four excepted items and the list of SWMUs requiring corrective action described in Section III.W.1.

III.W.5. Preservation of Procedural Rights

This Consent Order hereby incorporates all rights, procedures and other protections afforded the Respondents and the public pursuant to the regulations at 20.4.1.900 NMAC (incorporating 40 C.F.R. § 270.42) and 20.4.1.901 NMAC, including, but not limited to, opportunities for public participation, including public notice and comment, administrative hearings, and judicial appeals concerning, for example, remedy selection decisions of the Department.

III.W.6. Contingencies

The Department hereby commits to process the Permit Modification described in Section III.W.3.a (Class 3 Permit Modification to Remove Corrective Action Requirements) expeditiously. In making this commitment, the State recognizes that the Respondents have entered into this Consent Order based on their understanding that there shall be only one enforceable instrument for corrective action and that such instrument is this Consent Order. *See* Section III.W.2 (Effect of Consent Order on Permit). If the Department fails to process the Permit Modification expeditiously, this Consent Order shall automatically be vacated after the Parties have exhausted dispute resolution, as provided for under this Consent Order, and a court of competent jurisdiction has determined that the Department has failed to act expeditiously in processing the Permit Modification. The Parties and the State agree that if the Department fails to act on the Permit Modification, the sole issue for dispute resolution and for the court of competent jurisdiction is whether the Department has acted expeditiously in processing the Permit Modification, as initiated by the Respondents.

If the Department denies the Permit Modification request and the basis for the denial can be cured, the Parties will promptly take all appropriate actions to cure the identified deficiency. If the Department denies the Permit Modification request and the basis for the denial cannot be cured, this Consent Order shall automatically be vacated 30 days after the Department's denial.

Finally, if the Department grants the Permit Modification, and a court of competent jurisdiction determines that corrective action requirements for releases of hazardous waste or hazardous constituents in this Consent Order must be included in the Permit, the Respondents shall submit a Class 3 Permit Modification request that incorporates those terms of the Consent Order which, as of the date of the modification, have not been met. Once that Permit Modification becomes effective, this Consent Order shall automatically be vacated.

III.X. SEVERABILITY

If any provision or authority of this Consent Order is held by a court of competent jurisdiction to be invalid, if that provision or authority is severable from the remainder of the Consent Order, the remainder of the Consent Order shall remain in force and shall not be affected by the court's order and ruling. Additionally, if the application of this Consent Order to any party or circumstance is held by a court of competent jurisdiction to be invalid, the application of this Consent Order to other parties or circumstances shall remain in force and shall not be affected thereby.

III.Y. LAND TRANSFER

III.Y.1. Transfer of Facility Proper in Fee

The provisions of this Section (III.Y.1) shall apply for the duration of the Consent Order to any transfer in fee of Facility property from the United States to another entity during DOE's operational control of the property, to the extent that such property is subject to any requirement under the Consent Order.

III.Y.1.a. Notice and Meeting

Prior to the United States transferring in fee any portion of the Facility to another entity, DOE will provide written notice of such transfer to the Department at least 120 days prior to the date of transfer. Appropriate representatives of DOE, the Department, and the entity to which the United States intends to transfer title to the property ("the transferee") will meet within 30 days after issuance of DOE's written notice of transfer. At the meeting, the Parties will discuss the transferee's intended use of the property that is the subject of the transfer ("the property"). The Department and DOE will review the corrective measures, including remedy, taken with regard to the property, in light of the transferee's intended use of the property.

III.Y.1.b. Department's Determination

Within 60 days after the meeting described in Section III.Y.1.a, the Department will determine if the corrective measures implemented by the Respondents with regard to the property are protective of human health and the environment in light of the transferee's intended use of the property.

(i) If the Department determines that the corrective measures implemented by the Respondents with regard to the property are not protective of human health and the environment in light of the transferee's intended use of the property, the Department must explain, in writing, why such measures are not protective, and must identify the specific additional corrective action requirements that Respondents must complete with regard to the property. If DOE thereafter still intends to go through with the transfer, Respondents will endeavor to conduct any additional corrective action requirements identified by the Department prior to transfer. With the Department's prior approval, DOE may conduct such additional corrective action requirements following transfer, pursuant to a schedule

approved by the Department. Such schedule shall be enforceable pursuant to the terms of this Consent Order.

(ii) If the Department determines that the corrective measures implemented by Respondents with regard to the property are protective of human health and the environment in light of the transferee's intended use of the property, no additional corrective action requirements will be imposed with regard to the property prior to transfer. If the Department determines, pursuant to this Paragraph (Section III.Y.1.b.ii), that no additional corrective measures will be imposed, DOE shall not be precluded from transferring the property immediately following receipt of the Department's determination, even if that determination is received prior to the expiration of the review period.

The Department must notify Respondents no later than 60 days following the meeting required by Section III.Y.1.a as to whether additional corrective action measures are necessary with regard to the property given the transferee's intended use of the property. If the Department does not notify Respondents within this time frame, the Department will be deemed to have concluded that no additional corrective measures are necessary given the transferee's intended use of the property.

III.Y.1.c. Terms of Transfer

In transferring land to another entity, the United States shall comply with the terms of section 120(h) of the Comprehensive Environmental Response, Compensation, and Liability Act, as amended ("CERCLA"), 42 U.S.C. § 9620(h). That section applies to any property owned by the United States on which any hazardous substance was stored for one year or more, known to have been released, or disposed of. Consistent with CERCLA section 120(h)(3)(A), the United States will include in the deed transferring the property the information required by CERCLA section 120(h)(3)(A)(i), the covenant required by CERCLA section 120(h)(3)(A)(ii), and the access clause required by CERCLA section 120(h)(3)(A)(iii). The United States may defer the requirement of section 120(h)(3)(A)(ii)(I), consistent with the terms of CERCLA section 120(h)(3)(C).

III.Y.1.d. Restricted Use

When the United States transfers property that has been cleaned to a level less protective than a residential use scenario, the United States will include in the deed a restriction that limits future use of the property to the particular use scenario on which DOE has based its cleanup of the property (e.g., if the property was cleaned based on an industrial use scenario, future use of the property would be limited to industrial use). The language of the deed restriction governing future land use necessarily will differ for each deed, depending upon the facts and circumstances of the property being transferred. Such restriction shall, at a minimum, be consistent with the following language:

The property shall not be used for any purpose other than [define the use scenario on which DOE has based its cleanup of the property]. That means that the property shall not be used for [define less restrictive uses].

At least 30 days prior to transfer, DOE shall provide the Department the opportunity to review and comment upon the language of the proposed deed restriction limiting future land use, as described generally in the preceding Paragraph. The Department shall provide comments on such proposed language no later than 15 days after receipt of DOE's proposed language.

III.Y.1.e. Enforceability Against Transferee

The Parties agree that the covenant required by CERCLA section 120(h)(3)(A)(ii), and the deed restriction described in Section III.Y.1.d (to the extent the property is not remediated for unrestricted use), are requirements within the meaning of CERCLA section 310(a)(1), 42 U.S.C. § 9659(a)(1).

The Parties agree that the contract of sale between the United States and the transferee will state that the Parties to the contract agree that the deed restriction to be set forth in the deed is a requirement within the meaning of CERCLA section 310(a)(1), 42 U.S.C. § 9659(a)(1). Further, the Parties agree that such statement within the Contract of Sale will survive the transfer of the deed.

The Parties also agree that the deed transferring title from the United States to the transferee will state that the restriction on land use set forth in the deed is intended to be an equitable servitude, that both the Department and the transferor are beneficiaries of the equitable servitude, that the Parties intend for the restriction on land use to run with the land and to bind subsequent transferees, that such restriction is enforceable by the Department and the transferor against any subsequent transferee that fails to comply with its terms. The deed shall be recorded in the appropriate recording office in the chain of title of the property to give notice of the use restriction to subsequent transferees of the property.

III.Y.1.f. EPA Institutional Controls Tracking System

For any deed transferring title from the United States to the transferee that contains a restriction on future land use, DOE will, within 90 days of transfer of the property, notify EPA, Region VI, of the transfer and identify for EPA the location of the property that is the subject of the transfer so that EPA can, as appropriate, include such property in its pilot institutional controls data base and tracking system. This database and tracking system, among other things, identifies former United States' property on which deed restrictions have been placed.

III.Y.2. Transfer of Control of Facility Property to Another Federal Entity

The provisions of this Section shall apply for the duration of the Consent Order to any transfer of operational control of Facility property from DOE to another agency, department, or instrumentality of the United States, to the extent that such property is subject to any requirement under the Consent Order.

III.Y.2.a. Notice and Meeting

If DOE decides or learns of a decision that operational control of any portion of the Facility will be transferred from DOE to another agency, department or instrumentality of the United States (the "transferee agency"), DOE will provide written notice of such operational transfer to the Department at least 120 days prior to the transfer, if practicable. If, however, DOE decides or learns of such decision fewer than 120 days prior to the transfer, DOE will provide written notice to the Department as soon thereafter as is reasonably practicable. Appropriate representatives of DOE will meet with representatives of the Department and the transferee agency. Such meeting shall take place within 30 days after DOE's written notice under this Paragraph. The meeting may occur following the change in operational control, if the United States determines that the change in operational control cannot be delayed. At the meeting, the Parties will discuss the transferee agency's intended use of the property. The Department and DOE will review the corrective measures, including remedy, taken with regard to the property, in light of the transferee agency's intended use of the property.

III.Y.2.b. Department's Determination

Within 60 days after the meeting, the Department will determine if the corrective measures implemented by Respondents with regard to the property are protective of human health and the environment in light of the transferee agency's intended use of the property.

(i) If the Department determines that the corrective measures implemented by Respondents with regard to the property are not protective of human health and the environment in light of the transferee agency's intended use of the property, the Department must explain, in writing, why such measures are not protective, and must identify the specific additional corrective action requirements that Respondents must complete with regard to the property. To the extent practicable, Respondents will endeavor to conduct any additional corrective action requirements identified by the Department prior to the transfer of operational control. DOE may, however, conduct such additional corrective action requirements following transfer of operational control, pursuant to a schedule approved by the Department. Such schedule shall be enforceable pursuant to the terms of this Consent Order.

(ii) If the Department determines that the corrective measures implemented with regard to the property are protective of human health and the environment in light of the transferee agency's intended use of the property, no additional corrective action work will be taken with regard to the property.

The Department must notify Respondents no later than 60 days following the meeting required by the preceding Section (III.Y.2.a) as to whether additional corrective action measures are necessary with regard to the property. If the Department does not notify Respondents within this time frame, the Department will be assumed to have concluded that no additional corrective measures are necessary given the transferee agency's intended use of the property.

III.Y.2.c. Contrary Land Use

If the Department determines that the transferee agency plans to use, or is using, the subject property in a manner contrary to the use(s) discussed at the meeting described in Section III.Y.2.b, the Department shall notify DOE and the transferee agency in writing. In such writing, the Department shall explain its concerns with regard to the proposed or current use of the property. Within 30 days thereafter DOE, the Department, and the transferee agency shall meet to discuss the Department's stated concerns. The State reserves its right to take any action, including administrative or judicial action, to address the contrary land use.

IV. FACILITY INVESTIGATION

IV.A. BACKGROUND

Prior to the issuance of this Consent Order, the Respondents had begun investigations of contamination at the Facility. The results of previous investigation work are to be incorporated into the investigations conducted under this Consent Order. However, additional investigation is necessary to fully characterize the nature, extent, fate and transport of Contaminants that have been released to the environment as a result of Facility operations.

The Respondents have established a groundwater-monitoring network for the purpose of hydrogeologic characterization and groundwater quality sampling. The current Facility monitoring network includes test wells, monitoring wells, and springs. This monitoring network has been determined by the Department to be adequate for the purpose of establishing background groundwater quality and understanding the general hydrogeologic system beneath the Facility. However, additional site-specific groundwater monitoring wells may be needed to investigate the TAG area and other SWMUs/AOCs.

IV.B. PERCHLORATE SCREENING IN GROUNDWATER

The Respondents shall evaluate the nature and extent of perchlorate contamination based on a screening level of 4 micrograms per liter (µg/L). The detection limit shall not exceed 0.004 milligrams per liter (mg/L). In a given monitoring well, four consecutive non-detects at this screening level will be considered evidence of the absence of perchlorate, such that additional monitoring for perchlorate in that well is not required. In a given monitoring well, detection of perchlorate at this screening level will initiate the requirement of subsequent perchlorate monitoring, following the relevant schedule in Table XI.1 of this Consent Order, until four consecutive non-detect results are obtained for that well. The Respondents shall report all monitoring results on a quarterly basis to the Department, unless the Department agrees in writing to a longer reporting period.

Monitoring for perchlorate as described above is required only in groundwater monitoring wells installed at the Facility after implementation of this Consent Order and in the existing wells: NWTA3-MW2, MRN-3D, MRN-2, MWL-BW1, MWL-MW1, CYN-MW1D, and CYN-MW5.

IV.C. AREAS WITH GROUNDWATER CONTAMINATION

Groundwater is or has been contaminated above WQCC or EPA standards at the Burn Site, TA-V, and Tijeras Arroyo Groundwater area (formerly Sandia North). These areas are briefly discussed below:

1. Burn Site. In 1996, sampling results from the Burn Site Well, a non-potable water supply well, showed elevated nitrate levels at 26 mg/L (maximum contaminant level (MCL) is 10 mg/L). The Department required monitoring wells at the Burn Site; these wells have yielded groundwater samples with levels of nitrate greater than 10 mg/L. Fuel constituents below

state and EPA standards have also been detected in some wells. The contamination is found in canyon alluvium and fractured bedrock aquifers that may connect to the regional aquifer in the Albuquerque Basin to the west.

2. TA-V. TA-V is located in the northeastern corner of TA-III, in the southwestern part of KAFB. TCE has been detected in water samples from some monitoring wells screened in the regional aquifer in and around TA-V since 1993. Also, nitrate, a Contaminant from septic system effluent, has been detected above state drinking water and groundwater standards. TCE levels have ranged as high as 23 μg/L, and nitrate has ranged as high as 16.3 mg/L.

3. Tijeras Arroyo Groundwater area (formerly Sandia North). TAG is an approximately 8.0 square miles rectangular (3.25 miles x 2.5 miles) area located in the north central part of KAFB. Groundwater occurs in a perched system in addition to the regional system. The perched groundwater system is contaminated with TCE and nitrate at levels reaching 7.5 μg/L (MCL – 5.0 μg/L) and 30 mg/L (MCL – 10 mg/L), respectively. Nitrate has been detected in the regional aquifer at concentrations ranging as high as 18 mg/L.

The Respondents must complete a Corrective Measures Evaluation (CME) for the Burn Site, TA-V, and Tijeras Arroyo Groundwater area in accordance with the schedules in Section XI.

Prior to conducting a CME, site characterization efforts must be completed to the satisfaction of the Department. Respondents shall determine for each area of groundwater contamination and as required by the Department:

1. Nature, rate of transport, and extent of contamination;

2. Regional and perched aquifer boundaries;

3. Depth to water, water levels, water table, potentiometric surface, and any seasonal variations;

4. Flow directions and velocities;

5. Geologic, hydrostratigraphic, and structural relationships;

6. Water supply well pumping influences, seasonal pumping rates, and annual amounts of water withdrawn;

7. Saturated hydraulic conductivity, porosity, effective porosity, permeability, transmissivity, particle size, storage coefficients, and estimated fracture/secondary porosity;

8. Contaminant concentrations in soil, rock, sediment, vapor, and water (as appropriate); and

9. General water chemistry.

In selecting sites for new wells, the Respondents shall consider lithology, paleotopography, fracture density and orientation, source areas, Contaminant characteristics, geologic structures,

groundwater flow direction, and any known and potential occurrences of groundwater.

IV.D. MIXED WASTE LANDFILL

The MWL was operated from 1959 to 1988 as a land disposal unit for various wastes, including mixed waste and hazardous waste. The landfill occupies about 2.6 acres and is located in the north-central portion of TA-III. Wastes disposed of in the MWL include acids, metals, organic solvents and other organic compounds. A RFI has shown that cadmium and tritium, a radioactive material that is not covered by this Consent Order, have migrated from the landfill.

On October 11, 2001, the Department directed the Respondents to conduct a Corrective Measures Study (CMS) (equivalent to a CME) meeting the requirements set forth in Sections N, O, P, Q, and S of Module IV (HSWA requirements) of the Respondents' RCRA Permit. Since then, the Respondents have submitted a CMS Plan to the Department, fulfilling the first phase of this directive, and a CMS Report. The Respondents must complete the CMS and implement and complete the approved corrective measures in accordance with the schedules in Section XI.

IV.E. SEPTIC SYSTEMS

Small septic systems make up the bulk of sites still requiring investigation at the Facility. The Respondents shall investigate these sites in accordance with the Sampling and Analysis Plan submitted October 19, 1999, and approved by the Department on January 28, 2000. Investigation reports for each site are due in accordance with the schedules in Section XI, Tables XI-2 and XI-3. The Respondents may substitute a completed septic system investigation report for any other report for a septic system that is due, but is incomplete, by notifying the Department in writing, provided that the substitute report is for a site not yet granted Corrective Action Complete status by the Department. Any report replaced by a substitute report shall assume the original due date of the substitute.

IV.F. OTHER SOLID WASTE MANAGEMENT UNITS AND AREAS OF CONCERN

The Respondents must complete and submit an investigation report for each SWMU and AOC listed in, and in accordance with, the schedules in Section XI, Tables XI-2 and XI-3. The Respondents may substitute a completed investigation report for any other report that is due, but is incomplete, if given prior written approval by the Department, and provided the substitute report is for a site that has not yet been granted Corrective Action Complete status by the Department. Any report replaced by a substitute report shall assume the original due date of the substitute.

V. NEWLY IDENTIFIED SWMUS, AOCS AND RELEASES

Within 15 days after the discovery of any newly identified or suspected SWMUs or AOCs, the Respondents shall notify the Department in writing of such discovery. The notification shall include, at a minimum, the location of the SWMU or AOC and all available information pertaining to the nature of any release of Contaminants from the SWMU or AOC, including the Contaminants released, the magnitude of the release, and the media affected by the release.

Within 60 days after submitting such notification, the Respondents shall submit to the Department for approval a SWMU Assessment Report (SAR) for each newly identified or suspected SWMU or AOC unit. At a minimum, the SAR shall provide the following information, to the extent available:

1. Location of each unit on a topographic map of appropriate scale;

2. Designation of type and function of each unit;

3. General dimensions, capacities and structural description of each unit (including any available plans and drawings);

4. Dates of operation for each unit;

5. Identification of all wastes that have been managed at or in each unit, to the extent available, including any available data on hazardous constituents in the waste; and

6. All available information pertaining to any release of Contaminants from each unit, including groundwater data, soil analyses, air sampling or monitoring data, and surface water data.

Based on the results of the SAR, the Department will determine the need for further investigations at the SWMUs or AOCs covered in the SAR, including the need for an investigation report under Section VI.C. If warranted, the Department may also require corrective measures of the SWMU or AOC, based on a finding that releases of Contaminants have occurred, are occurring, or are likely to occur from the unit.

Within 15 days after the discovery of any previously unknown release of a Contaminant from a SWMU or AOC, the Respondents shall notify the Department in writing of such discovery. The Department may determine that further investigation of the release of Contaminants is needed, including the need for an investigation report under Section VI.C. If warranted, the Department may also require corrective measures of the SWMU or AOC, based on a finding that releases of Contaminants have occurred, are occurring, or are likely to occur from the unit.

VI. CORRECTIVE ACTION PROCESS

VI.A. INVESTIGATION WORK PLAN

The Department may determine that further investigation is needed at any of the SWMUs or AOCs listed in the Facility Operating Permit or identified under Sections IV, V or XI. If the Department determines that further investigation is needed, it will notify the Respondents in writing. The Respondents shall submit to the Department for approval an investigation work plan or plans for those SWMUs and AOCs that need further investigation. An individual work plan may cover several SWMUs or AOCs. The work plans shall be prepared in accordance with Section X.B of this Consent Order and shall be submitted by the date specified by the Department.

VI.B. SITE INVESTIGATION

The Respondents shall perform the site investigations in accordance with the approved investigation work plan. The Respondents shall notify the Department in writing or by email or fax of any field sampling activities undertaken pursuant to any plan or requirement of this Consent Order a minimum of 15 days prior to the commencement of any field activity under the approved investigation work plan.

VI.C. INVESTIGATION REPORT

The Respondents shall submit to the Department for approval an investigation report that presents the results of field activities, summarizes the data collected, and presents the recommendations and conclusions of the investigation. An individual report may cover several SWMUs or AOCs. The reports shall be prepared in accordance with Section X.C of this Consent Order and shall be submitted by the date specified by the Department or as listed in Section XI, Tables XI-2 and XI-3.

VI.D. CORRECTIVE MEASURES EVALUATION

If the Department requires corrective measures at a SWMU or AOC listed in the Facility's Operating Permit or identified in Sections IV, V or XI of this Consent Order, the Respondents shall submit to the Department a CME Work Plan within 90 days of notification by the Department that a CME is required. The CME Work Plan shall contain a schedule to conduct the CME. The Department will review the CME Work Plan, and will provide the Respondents written notice of any deficiencies in the CME Work Plan. The Respondents will correct any deficiencies in the CME Work Plan by the submittal date specified by the Department. Upon approval of the CME Work Plan by the Department, the work plan shall be implemented. A CME Report, in compliance with the requirements of Section X.F of this Consent Order, shall be submitted to the Department on the date specified in Section XI of this Consent Order or, if there is no date specified in Section XI, within 90 days of completion of the CME. The Department will review the CME Report, and will provide the Respondents written notice of any deficiencies in the Report. The Respondents will correct any deficiencies in the CME Report by the submittal date specified by the Department. When the Department determines that there are no deficiencies in the CME Report, the Department

will seek and consider public comment prior to approving, approving with modifications, or rejecting a remedy.[2]

VI.E. CORRECTIVE MEASUES IMPLEMENTATION

Respondents shall prepare a Corrective Measures Implementation Plan for the remedy approved by the Department, then shall implement the remedy upon approval of the Plan by the Department in accordance with a schedule for completion. Upon completion of the remedy, the Respondents shall submit a Corrective Measures Implementation Report to the Department for approval in accordance with a schedule approved by the Department or as required in Section XI, Tables XI-2 and XI-3.

VI.F. INTERIM MEASURES WORK PLAN

If required by the Department, the Respondents shall prepare and submit to the Department for approval an Interim Measures Work Plan within 90 days after receiving notification from the Department that a plan is required. Interim measures will be required, if necessary, to reduce or prevent migration of Contaminants, or to reduce or prevent human or environmental exposure to Contaminants while long-term corrective action remedies are evaluated and implemented. The Respondents shall include an implementation schedule in the Interim Measures Work Plan.

The Interim Measures Work Plan required by the Department must be approved prior to implementation. If the Department disapproves the Interim Measures Work Plan, the Department will notify the Respondents in writing of the plan's deficiencies and specify a due date for submission of a revised Interim Measures Work Plan.

The Respondents may determine, during implementation of site investigation activities, that emergency interim measures are necessary to address an immediate threat of harm to human health or the environment. The Respondents shall notify the Department within three business days of discovery of the facts giving rise to the threat, and shall propose emergency interim measures to address the threat. If the Department approves the emergency interim measures in writing, the Respondents may implement the emergency interim measures without submitting an interim measures work plan. In some circumstances, initiation of emergency interim measures might be warranted prior to obtaining written approval from the Department. Respondents shall notify the Department within one business day of taking the emergency interim measure. The notification will contain a description of the emergency situation, what types and quantities of Contaminants are involved, the emergency interim measures taken, and contact information for the emergency coordinator that handled the problem. The notification will also include a written statement justifying the need to take the emergency action without prior written approval from the Department.

VI.G. INTERIM MEASURES IMPLEMENTATION

The Respondents shall implement the interim measures in accordance with the approved Interim

[2] In selecting a remedy, the Department may select more than one remedy for a particular SWMU or AOC. The use of the term “remedy”, when referring to the selection of a remedy, refers also to multiple remedies.

Measures Work Plan.

Within 90 days of completion of interim measures, the Respondents shall prepare and submit to the Department, an Interim Measures Report summarizing the results of the interim measures, and including copies of all relevant laboratory, monitoring, and other data. The Interim Measures Report shall follow the same requirements as for a Corrective Measures Implementation Report.

VI.H. ACCELERATED CLEANUP PROCESS

At any time, if the Respondents identify a corrective action or measure that, if implemented voluntarily, would reduce impacts to human health and the environment, reduce cost or reduce overall schedule, the Respondents may implement the corrective action or measure as provided in this Section (VI.H) in lieu of the process established in Sections VI.A through VI.E. The proposed corrective action or measure will be documented in a Voluntary Corrective Action Plan or Voluntary Corrective Measure Plan, which shall include: (1) a description of the remediation initiative, including details of the unit or activity that is subject to the requirements of this Consent Order; and (2) an explanation of how the proposed action is consistent with the overall corrective action objectives and requirements. The Respondents shall notify the Department of the planned action or measure a minimum of 15 days prior to the commencement of any voluntary field activity; the notification shall include the submittal of the plan. The Department may review the plan to ensure that the proposed action would not pose unacceptable risks to human health and/or the environment. Within 90 days after completion of the voluntary corrective action or measure, the Respondents shall submit to the Department an Investigation Report that includes the contents satisfying the requirements of a Corrective Measures Implementation Report, as specified in Section VII.D.5.a .

VI.H.1. Voluntary Corrective Measures Work Plan

A VCM Work Plan must be approved prior to implementation. If the Department disapproves the VCM Work Plan, the Department will notify the Respondents in writing of the plan's deficiencies and specify a due date for submission of a revised VCM Work Plan, or explain why the proposed VCM will not be approved. The Respondents shall include an implementation schedule in the VCM Work Plan.

VI.H.2. Voluntary Corrective Measures Implementation

The Respondents shall implement the VCM in accordance with the approved VCM Work Plan. Within 90 days of completion of the VCM, the Respondents shall prepare and submit to the Department, an Investigation Report that includes the contents satisfying the requirements of a Corrective Measures Implementation (CMI) Report.

The VCM may not be the final remedy. The Department will evaluate the adequacy of cleanup as it does for a CMI, and the Department may require a CME.

VI.H.3. Voluntary Corrective Action Work Plan

The Department may review the Voluntary Corrective Action (VCA) Work Plan to ensure that the proposed VCA does not pose unacceptable risk to human health or the environment or interfere with the attainment of a final remedy.

The VCA Work Plan need not be approved prior to implementation. However, if the Department disapproves the VCA Work Plan, the Department will notify the Respondents in writing of the Plan's deficiencies.

VI.H.4. Voluntary Corrective Action Implementation

The Respondents shall implement the VCA in accordance with the VCA Work Plan. Within 90 days of completion of the VCA, the Respondents shall prepare and submit to the Department an Investigation Report that includes the contents satisfying the requirements of a CMI Report.

The VCA may not be the final remedy. The Department will evaluate the adequacy of cleanup as it does for a CMI, and the Department may require a CME.

VI.I. RISK ANALYSIS

The Respondents shall evaluate potential human and ecological risk for all SWMUs and AOCs at which there is contamination or residual contamination that will not be removed by corrective action. Additionally, the Department may require human health and ecological risk analyses for any SWMU or AOC to determine if there are current risks to human health or the environment from the existing level of contamination at the SWMU or AOC. The risk evaluation shall be in the form of a risk screening (Sections VI.I.1.b and VI.J) or a baseline risk assessment.

The risk evaluation results shall be reported in a Risk Assessment Report in compliance with Section X.E of this Consent Order. Alternatively, text equivalent to a Risk Assessment Report may be appended to an Investigation Report (Section X.C) or a Corrective Measures Evaluation Report (Section X.F). Contamination at SWMUs and AOCs not meeting the Department's human health target excess cancer risk goal of 10^{-5} for the sum of all carcinogenic Contaminants or the Department's goal of a hazard index (HI) of one (1.0) for the sum of all noncarcinogenic Contaminants is subject to cleanup, as determined by the Department. Contaminants at SWMUs and AOCs not meeting the requirements for ecological risk in Section VI.J are also subject to cleanup, as determined by the Department.

The Respondents shall attain the cleanup goals specified in the above paragraph and the cleanup levels specified in Section VI.K of this Consent Order to protect human health and the environment. Respondents may request alternative cleanup goals or levels at a particular site pursuant to the terms of Section VI.L.

VI.I.1. Risk Assessment Report

Risk Assessment reports (or equivalent text appended to other reports) shall conform to the

requirements in Section X.E of this Consent Order. In any case in which the Department has approved a demonstration of impracticability for a SWMU or AOC pursuant to Section VI.L, the Respondents shall submit to the Department for approval, within 90 days following completion of cleanup activities, a Risk Assessment Report for that SWMU or AOC.

VI.I.1.a. Conceptual Site and Risk Exposure Models

The risk assessment shall include information on the expected fate and transport of Contaminants detected at the site, including a list of all known sources of contamination at the site. The conceptual site model shall be discussed in all risk assessments. Sources that are no longer considered to be releasing Contaminants, but represent the point of origination for Contaminants transported to other locations, shall be included. The discussion of fate and transport shall address potential migration of each Contaminant in each medium, potential breakdown products and their migration, and anticipated pathways of exposure for human and ecological receptors.

For human health risk assessments for soils, the conceptual site and risk exposure models shall include the current and reasonably foreseeable future land use (such as industrial or recreational) for each SWMU or AOC. For any SWMU or AOC where the current and reasonably foreseeable future land use is not residential, a risk assessment based on a residential land-use scenario shall also be performed and reported. The residential land use risk assessment shall be used for comparison purposes only, unless the land use changes to residential.

A SWMU-specific risk scenario may be used for the human health risk assessment based on the current and reasonably foreseeable future land use. If such a scenario is used, the Respondents shall include all toxicity information and exposure assessment equations used for the SWMU-specific scenario as well as the sources for that information. If MCLs and WQCC standards, as described below, are pertinent to a SWMU or AOC, these levels shall also be used in the screening assessment.

Conceptual site and risk exposure models presented for ecological risk assessments shall identify assessment endpoints and measurement receptors for the site. The discussion of the models shall explain how the measurement receptors for the site are protective of the ecological receptors.

VI.I.1.b. Human Health Risk Screening Levels

The risk analysis shall include a screening assessment that compares appropriate soil screening levels, or WQCC standards or EPA MCLs as described below, to Contaminants at a site. The Department's soil screening levels (SSLs) for residential land use shall be used to screen soil contamination for risk to human health, or a baseline risk assessment shall be conducted. In either case, SSLs for Contaminants detected at a SWMU or AOC shall be included in the Risk Assessment Report for comparative purposes. For any given Contaminant that occurs naturally, the approved background concentration shall also be reported for comparative purposes, and the total risk of that Contaminant must include the risk from background levels. For those Contaminants not appearing on the Department's SSL table, EPA Region 6 soil screening values adjusted to a 10^{-5} target excess cancer risk goal shall be used in place of SSLs. If no

scientifically valid toxicological studies exist for a particular receptor or Contaminant, the Contaminant and receptor combination shall be addressed using qualitative methods.

VI.J. ECOLOGICAL RISK EVALUATION

Ecological risk at each site shall be evaluated by a baseline risk assessment or by using the Department's *Guidance for Assessing Ecological Risks Posed by Chemicals: Screening-Level Ecological Risk Assessment* (March 2000). *The Predictive Ecological Risk Assessment Methodology, Environmental Restoration Project, Sandia National Laboratories, NM,* developed by Sandia National Laboratories/New Mexico, may be used instead of the ecological screening levels cited in the guidance above if written approval of the Department for these values is obtained prior to use. If no scientifically valid toxicological studies exist for a particular receptor or Contaminant, the Contaminant and receptor combination shall be addressed using qualitative methods.

VI.K. CLEANUP GOALS AND CLEANUP LEVELS

As noted below, the WQCC and the Department have separately specified certain cleanup goals and methods of calculating cleanup levels, and reporting requirements for sites where corrective action is required. The Department's cleanup goals for protection of human health are based on excess lifetime cancer risk levels that are consistent with the EPA's National Oil and Hazardous Substance Pollution Contingency Plan, 40 C.F.R. § 300.430(e)(2)(i)(A)(*2*). The EPA recommends a range of 10^{-4} to 10^{-6} lifetime excess cancer risk as acceptable. In general, the Department has selected a human health target excess cancer risk goal of 10^{-5} for the sum of all carcinogenic Contaminants and the goal of a hazard index (HI) of one (1.0) for the sum of all noncarcinogenic Contaminants.

In addition to the above-noted cleanup goals, the Department and the EPA have established certain soil screening levels and MCLs, and the WQCC has adopted groundwater and surface water standards that are described below. Respondents shall use the cleanup levels described below in a manner consistent with the EPA RCRA corrective action process in implementing the corrective action requirements of this Consent Order. Finally, the Department has neither established, nor adopted pursuant to applicable law, a specific cleanup level for perchlorate in soil, groundwater, or surface water. To the extent any future regulatory requirements (i.e., WQCC standards, MCLs or other standards that are applicable) are adopted by the Environmental Improvement Board (EIB), WQCC, or EPA for perchlorate, Respondents shall comply with those requirements, whichever are the most stringent. As noted below and in Section IV.B of this Consent Order, the Parties have agreed to a screening level for monitoring perchlorate in groundwater. Section VI.K.1.b also describes that screening level for groundwater and the procedures Respondents shall follow if Respondents obtain detections above this screening level.

VI.K.1. Groundwater

Groundwater cleanup levels for human health should typically be developed using existing cleanup standards (e.g., drinking water standards) when they are available and when using them

is protective of current and reasonably expected exposures. The parties shall refer to EPA guidance, *Handbook of Groundwater Protection and Cleanup Policies for RCRA Corrective Action* (Sept. 2002), in developing groundwater cleanup levels.

VI.K.1.a. Groundwater Cleanup Levels

The WQCC has adopted groundwater cleanup standards for selected Contaminants (20.6.2.7.SS, 20.6.2.3103 and 20.6.2.4103 NMAC). Groundwater cleanup levels are based on the WQCC standards and the EPA MCLs for drinking water Contaminants. If both a WQCC standard and a MCL have been established for an individual substance, then the most stringent of the two levels shall be considered the cleanup level for that substance.

If, at the time of a CME, a WQCC standard or MCL has not been established for a Contaminant, the Respondents shall use the cleanup goals of a target excess cancer risk level of 10^{-5} and for noncarcinogenic Contaminants an HI of one (1.0) and using a residential scenario as the basis for proposing a cleanup level for the Contaminant. Prior to a CME, the WQCC standards and the drinking water MCLs shall be used as screening levels. If a WQCC standard or MCL has not been established for a specific substance, the EPA Region VI Human Health Medium Specific Screening Level for tap water shall be used as the screening level. Monitoring results in excess of those levels may indicate the need for changes to the relevant monitoring plan, further characterization of releases, evaluation of potential Interim Measures, as specified in Section VII.B of this Consent Order, or other appropriate actions as required by the Department.

VI.K.1.b. Groundwater Perchlorate Screening Level

The Parties agree that, prior to the promulgation of any applicable regulatory standards for perchlorate, the Respondents shall screen for perchlorate in all new groundwater monitoring wells installed at the Facility after the effective date of this Consent Order and at the following existing groundwater monitoring wells: NWTA3-MW2, MRN-3D, MRN-2, MWL-BW1, MWL-MW1, CYN-MW1D, and CYN-MW5. Groundwater monitoring for perchlorate shall be conducted for a minimum of four quarters and utilize a detection limit not to exceed 0.004 mg/L. Should perchlorate be detected in groundwater at any level in any monitoring wells, the Respondents shall continue monitoring perchlorate at such wells at a frequency to be negotiated with the Department. The frequency of monitoring shall not exceed one year. The Respondents shall report all monitoring results on a quarterly basis to the Department, unless the Department agrees in writing to a longer reporting period.

If perchlorate is detected at 0.004 mg/L or greater, Respondents shall evaluate the nature and extent of the perchlorate contamination. The results of the evaluation of the nature and extent of contamination shall be incorporated into a CME. If, at the time of the CME, no groundwater standard or MCL has been adopted by the EIB, WQCC or EPA for perchlorate, the Respondents shall use the cleanup goal of a HI of one (1.0) and a residential scenario in the CME evaluation to develop the proposed cleanup level.

VI.K.2. Soil Screening Levels and Cleanup Goal

The Department has specified soil-screening levels that are based on a target total excess cancer risk of 10^{-5} and for noncarcinogenic Contaminants a target HI of one (1.0) for residential land use. The target residential soil screening levels for selected substances are listed in the Department's Technical Background Document for Development of Soil Screening Levels. The Department uses the most recent version of the EPA Region VI Human Health Medium Specific Screening Level (HHMSSL) for residential soil as the target screening level for compounds designated as "n" (noncarcinogen effects), "max" (maximum concentration), and "sat" (soil saturation concentration), or ten times the EPA Region VI HHMSSL for compounds designated "c" (carcinogen effects), if a Department residential soil screening level has not been established for a Contaminant.

The Respondents shall either utilize the Department's soil screening levels as cleanup levels for purposes of this Consent Order, or shall propose cleanup levels to the Department based on a risk assessment and a target excess cancer risk level of 10^{-5} or, for noncarcinogenic Contaminants, a HI of one (1.0) for current and reasonably foreseeable future land use. The proposed cleanup level will be subject to the Department's review and approval.

VI.K.2.a. Soil Polychlorinated Biphenyls Cleanup Levels

PCBs are hazardous constituents (20.4.1.200 NMAC incorporating 40 C.F.R. § 261, Appendix VIII). Soil cleanup levels for PCBs are discussed in the Department's Position Paper *Risk-based Remediation of Polychlorinated Biphenyls at RCRA Corrective Action Sites* (Mar. 2000). Except as noted in this Section and in Section VI.L below, the default soil cleanup level for PCBs is 1 milligram per kilogram (mg/kg).

The Department has reached agreement with both the EPA and the Respondents regarding the cleanup levels of PCBs at SWMU 2: total PCB concentrations shall be less than 10 mg/kg at a depth of greater than five feet. The upper five feet of the now-excavated landfill shall be backfilled with clean soil.

VI.K.3. Surface Water Cleanup Levels

The surface water quality standards set forth in the Clean Water Act, 33 U.S.C. §§ 1251 *et seq.*; Ground and Surface Water Protection Regulations, 20.6.2 NMAC; and the Standards for Interstate and Intrastate Surface Waters, 20.6.4 NMAC, shall constitute the cleanup levels for surface water for purposes of this Consent Order.

VI.L. REQUESTS FOR VARIANCE FROM CLEANUP GOAL OR LEVEL

As noted in Section VI.I, Respondents may seek to vary from a particular cleanup goal or cleanup level. The nature of the request will differ depending on whether a WQCC standard is involved. If a WQCC standard is involved, Respondents may seek an alternative abatement standard in accordance with the process specified in the WQCC Regulations, Section 20.6.2.4103.E and F NMAC. Those regulations require Respondents to make a request to the

WQCC. The WQCC will then determine whether an alternative abatement standard is appropriate and, if it is, will approve such standard consistent with the WQCC Regulations.

For all other instances in which Respondents seek to vary from a cleanup goal or level identified above, Respondents shall submit a demonstration to the Department that achievement of the cleanup goal or level is impracticable. The Department will review the Respondents' written submission concerning impracticability and determine whether the demonstration is approvable. Respondents shall have the burden of making the impracticability demonstration and, in making such demonstration, Respondents may consider such things as technical or physical impracticability of the project, the effectiveness of proposed solutions, the cost of the project, hazards to workers or to the public, and any other basis that may support a finding of impracticability at a particular SWMU or AOC. The Department may consider such things as technical or physical feasibility of the project, the effectiveness of proposed solutions, the cost of the project, hazards to workers or to the public, and any other basis that may support or refute a finding of impracticability at a particular SWMU or AOC. Respondents may also refer to all applicable guidance concerning impracticability, including, for example, the criteria set forth in EPA's Interim Final Guidance for Evaluating the Technical Impracticability of Ground-Water Restoration (Sept. 1993) and EPA's Handbook of Groundwater Protection and Cleanup Policies for RCRA Corrective Action (Sept. 2002). In addition to demonstrating the basis for their impracticability request, Respondents' written submission shall propose the action(s) to be taken by Respondents if the Department approves the impracticability demonstration. Such action(s) shall include, but is (are) not limited to, completion of a site-specific risk assessment and identification of alternate cleanup goals or levels.

If the Department approves Respondents' impracticability demonstration, it shall indicate so in writing, and such writing shall identify the specific action(s) to be taken by Respondents.

VII. CORRECTIVE MEASURES

The Respondents shall implement corrective measures at the Facility, as necessary, in accordance with the requirements of this Section (VII).

The results of the investigations required in this Consent Order, and other information available to the Department, will be used as the basis for determining whether further investigation or corrective measures are necessary at each SWMU or AOC. The general procedures for implementing corrective measures are described below.

VII.A. EROSION CONTROL

The Respondents are responsible for controlling erosion at each SWMU or AOC and from roads constructed by the Facility solely for the purpose of accessing, investigating, or remediating a SWMU or AOC. The Respondents shall control and limit significant siltation, sediment transport, Contaminant transport and surface erosion within individual SWMU/AOC boundaries. Erosion controls shall include slope stabilization, surface-water run-on and run-off control, and sediment transport controls, as needed. The Respondents shall implement engineering controls and best management practices to control surface water and sediment transport within individual SWMU or AOC boundaries. Erosion control and surface water monitoring shall be performed in accordance with the Clean Water Act, U.S. Code Title 33, Chapter 26; the State of New Mexico Standards for Interstate and Intrastate Surface Waters, 20.6.4 NMAC; Ground and Surface Water Protection Regulations, 20.6.2 NMAC; and in accordance with the Department's Surface Water Quality Bureau and EPA guidance. Erosion control shall be implemented, as necessary, before, during, and after implementation of corrective measures.

VII.B. INTERIM MEASURES

VII.B.1. General

The Department will require interim measures, if the Department determines that such measures are necessary, to reduce or prevent migration of Contaminants, or to reduce or prevent human or environmental exposure to Contaminants while long-term corrective action remedies are evaluated and implemented. Upon making such a determination, the Department will notify the Respondents in writing.

VII.B.2. Interim Measures Work Plan

Within 90 days after receiving notification from the Department that interim measures are required, the Respondents shall submit to the Department for approval an Interim Measures Work Plan that shall include an implementation schedule.

VII.B.2.a. Approval of Interim Measures Work Plan

If the Department disapproves the Interim Measures Work Plan, the Department will notify the Respondents in writing of the Interim Measures Work Plan's deficiencies and specify a due date for submission of a revised Interim Measures Work Plan. Upon receipt of such notification of

disapproval, the Respondents shall submit to the Department, within the specified timeframe, a revised Interim Measures Work Plan that corrects the deficiencies.

VII.B.3. Interim Measures Implementation

The Respondents shall implement the interim measures in accordance with the approved Interim Measures Work Plan and implementation schedule.

VII.B.4. Emergency Interim Measures

The Respondents may determine, during implementation of site investigation activities, that emergency interim measures are necessary to address an immediate threat of harm to human health or the environment. The Respondents shall notify the Department within three business days of discovery of the facts giving rise to the threat, and shall propose emergency interim measures to address the threat. If the Department approves the emergency interim measures in writing, the Respondents may implement the emergency interim measures without submitting an interim measures work plan. In some circumstances, initiation of emergency interim measures might be warranted prior to obtaining written approval from the Department. Respondents shall notify the Department within one business day of taking the emergency interim measure. The notification will contain a description of the emergency situation, what types and quantities of Contaminants are involved, the emergency interim measures taken, and contact information for the emergency coordinator that handled the problem. The notification will also include a written statement justifying the need to take the emergency action without prior written approval from the Department.

VII.B.5. Interim Measures Report

Within 90 days after completion of interim measures, the Respondents shall submit to the Department an Interim Measures Report summarizing the results of the interim measures, that shall include copies of the results of all field screening, monitoring, sampling, analysis and other data generated as part of the interim measures implementation. The Interim Measures Report shall follow the requirements for a Corrective Measures Implementation Report.

VII.C. CORRECTIVE MEASURES EVALUATION

The Department will require corrective measures at a SWMU or AOC if the Department determines, based on an Investigation Report and other information available to the Department, that there has been a release of Contaminants into the environment at the SWMU or AOC and that corrective measures are necessary to protect human health or the environment. Upon making such a determination, the Department will notify the Respondents in writing.

Within 90 days of receiving notification from the Department that a corrective measures evaluation is required, the Respondents shall submit to the Department for approval a CME Work Plan. The Department will review the CME Work Plan and will provide the Respondents written notice of any deficiencies in the work plan. The Respondents shall correct any deficiencies in the CME Work Plan by the submittal date specified by the Department. When

the Department determines that there are no deficiencies in the CME Work Plan, the Respondents shall implement the CME Work Plan.

For simple sites with obvious remedies, the Respondents may choose to remediate a SWMU or AOC using the accelerated cleanup process pursuant to Section VI.H of this Consent Order. The completion of an accelerated cleanup at a SWMU or AOC does not obligate the Department to make a Corrective Action Complete determination for such SWMU or AOC. The Department may require a CME to be conducted for a SWMU or AOC that has been previously remediated by the accelerated cleanup process, if the latter is determined to be inadequate by the Department.

VII.C.1. Corrective Measures Evaluation Report

Within 90 days of completion of the CME, the Respondents shall submit a CME Report to the Department for approval of a remedy. The Respondents shall follow the CME Report requirements in Section X.F of this Consent Order.

The corrective measures evaluation shall evaluate potential remedial alternatives and shall recommend a preferred remedy that will be protective of human health and the environment and attain the appropriate cleanup goals for Contaminants that are present. The CME Report shall, at a minimum, comply with Section X.F of this Consent Order and include particular to the SWMU or AOC being evaluated:

1. A description of the location, status, and current use of the SWMU or AOC;

2. A description of the history of SWMU or AOC operations and the history of releases of Contaminants;

3. A description of SWMU or AOC surface conditions;

4. A description of SWMU or AOC subsurface conditions;

5. A description of on- and off-site contamination in all affected media;

6. An identification and description of all sources of Contaminants;

7. An identification and description of Contaminant migration pathways;

8. An identification and description of potential receptors;

9. A description of cleanup standards or other regulatory criteria;

10. An identification and description of a range of remedy alternatives;

11. Remedial alternative pilot or bench scale testing results;

12. A detailed evaluation and rating of each of the remedy alternatives, applying the criteria set forth in Section VII.C.3.a-b ;

13. An identification of a proposed preferred remedy;

14. Design criteria of the selected remedy;

15. A proposed schedule for implementation of the preferred remedy.

VII.C.2. Cleanup Standards

The Respondents shall select corrective measures that are capable of achieving the cleanup standards and goals outlined in Section VI.J and VI.K of this Consent Order or, approved risk-based cleanup goals established by a risk assessment, as described in Section VI.I.

VII.C.3. Corrective Measures Evaluation Criteria

VII.C.3.a. Threshold Criteria

The Respondents shall evaluate each of the remedy alternatives for the following threshold criteria. To be selected, the remedy alternative must:

1. Be protective of human health and the environment;

2. Attain media cleanup standard or alternative, approved risk-based cleanup goals;

3. Control the source or sources of releases so as to reduce or eliminate, to the extent practicable, further releases of Contaminants that may pose a threat to human health and the environment; and

4. Comply with standards for management of wastes.

VII.C.3.b. Remedial Alternative Evaluation Criteria

The Respondents shall evaluate each of the remedy alternatives for the factors described in Section VII.C.3.b.i-v. These factors shall be balanced in proposing a preferred alternative.

VII.C.3.b.i. Long-Term Reliability and Effectiveness

Each remedy shall be evaluated for long-term reliability and effectiveness. This factor includes consideration of the magnitude of risks that will remain after implementation of the remedy; the extent of long-term monitoring or other management that will be required after implementation of the remedy; the uncertainties associated with leaving Contaminants in place; and the potential for failure of the remedy. A remedy that reduces risks with little long-term management, and

that has proven effective under similar conditions, shall be preferred.

VII.C.3.b.ii. Reduction of Toxicity, Mobility, or Volume

Each remedy shall be evaluated for its reduction in the toxicity, mobility, and volume of Contaminants. A remedy that more completely and permanently reduces the toxicity, mobility, and volume of Contaminants shall be preferred.

VII.C.3.b.iii. Short-Term Effectiveness

Each remedy shall be evaluated for its short-term effectiveness. This factor includes consideration of the short-term reduction in existing risks that the remedy would achieve; the time needed to achieve that reduction; and the short-term risks that might be posed to the community, workers, and the environment during implementation of the remedy. A remedy that quickly reduces short-term risks, without creating significant additional risks, shall be preferred.

VII.C.3.b.iv. Feasibility

Each remedy shall be evaluated for its feasibility, or the difficulty of implementing the remedy. This factor includes consideration of installation and construction difficulties; operation and maintenance difficulties; difficulties with cleanup technology; permitting and approvals; and the availability of necessary equipment, services, expertise, and storage and disposal capacity. A remedy that can be implemented quickly and easily, and poses fewer and lesser difficulties, shall be preferred.

VII.C.3.b.v. Cost

Each remedy shall be evaluated for its cost. This factor includes a consideration of both capital costs, and operation and maintenance costs. Capital costs shall include, without limitation, construction and installation costs; equipment costs; land development costs; and indirect costs including engineering costs, legal fees, permitting fees, startup and shakedown costs, and contingency allowances. Operation and maintenance costs shall include, without limitation, operating labor and materials costs; maintenance labor and materials costs; replacement costs; utilities; monitoring and reporting costs; administrative costs; indirect costs; and contingency allowances. All costs shall be calculated based on their net present value. A remedy that is less costly, but does not sacrifice protection of health and the environment, shall be preferred.

VII.C.4. Approval of Corrective Measures Evaluation Report

If the Department disapproves the CME Report, the Department will notify the Respondents in writing of the CME Report's deficiencies and specify a due date for submission of a revised CME Report. Upon receipt of such notification of disapproval, the Respondents shall submit to the Department, within the specified time, a revised CME Report that corrects the deficiencies. If the Department determines that there are no deficiencies in the CME Report, the Department will notify the Respondents in writing.

VII.C.5. Statement of Basis

When the Department determines that there are no deficiencies in the CME Report, the Department will select a final remedy for the SWMU or AOC. The Department may select a different remedy from that preferred by the Respondents in accordance with law. The Department will issue a Statement of Basis for selection of the final remedy, and will receive public comment on the remedy. The public comment period will extend for 45 days from the date of the public notice of the Statement of Basis. The Department will select a final remedy and issue a response to public comments within 90 days, or other appropriate time period based on good cause, after the end of the public comment period. In selecting a final remedy the Department shall follow the public participation requirements applicable to remedy selection under Sections 20.4.1.900 (incorporating 40 C.F.R. § 270.41) and 20.4.1.901 NMAC.

The Administrative Record for the Facility will be made available to the public at the Department's offices in Santa Fe, New Mexico. All significant written and signed comments (including e-mailed comments) will be considered by the Department prior to approving a final remedy.

A public hearing may be held by the Department if the Secretary of the Department determines there is significant public interest in the selection of a final remedy. The comment period shall automatically be extended to the close of the public hearing. The public hearing shall follow the hearing requirements under 20.4.1.901.F and 20.4.1 NMAC.

The Department's decision on the final remedy shall follow the requirements of Section 20.4.1.901.G NMAC. The Department will issue a response to public comments at the time the Department's decision is issued.

VII.D. CORRECTIVE MEASURES IMPLEMENTATION

VII.D.1. General

The Respondents shall implement the final remedy selected by the Department.

VII.D.2. Corrective Measures Implementation Plan

Within 90 days after the Department's selection of a final remedy, or such other time as the Department determines, the Respondents shall submit to the Department for approval a CMI Plan outlining the design, construction, operation, maintenance, and performance monitoring for the selected remedy, and a schedule for implementation. The CMI Plan shall, at a minimum, include the following elements.

1. A description of the selected final remedy;

2. A description of the cleanup goals and remediation system objectives;

3. An identification and description of the qualifications of all persons, consultants, and contractors that will be implementing the remedy;

4. Detailed engineering design drawings and systems specifications for all elements of the remedy;

5. A construction work plan;

6. An operation and maintenance plan;

7. The results of any remedy pilot tests;

8. A plan for monitoring the performance of the remedy, including sampling and laboratory analysis of all affected media;

9. A waste management plan;

10. A proposed schedule for submission to the Department of periodic progress reports;

11. A proposed schedule for implementation of the remedy.

VII.D.3. Health and Safety Plan

The Respondents shall conduct all activities in accordance with a Health and Safety Plan.

VII.D.4. Community Relations

The Respondents shall involve the public in all corrective measures selections and implementations by giving presentations of such at quarterly public meetings and at other meetings such as meetings held for providing information on CME Reports. The Department encourages the Respondents to conduct additional activities to inform the public about the SWMU or AOC that is the subject of the CME or CMI process. Additional activities may include informal meetings or direct contact with the public, site tours, or workshops.

VII.D.5. Progress Reports

The Respondents shall submit to the Department progress reports in accordance with the schedule approved in the CMI Plan. The progress reports shall, at a minimum, include the following information.

1. A description of the work completed during the reporting period;

2. A summary of all problems, potential problems, or delays encountered during the reporting period;

3. A description of all actions taken to eliminate or mitigate problems, potential problems, or delays;

4. A discussion of the work projected for the next reporting period, including all sampling events;

5. Copies of the results of all monitoring, including sampling and analysis, and other data generated during the reporting period; and

6. Copies of all waste disposal records generated during the reporting period.

VII.D.5.a. Corrective Measures Implementation Report

Within 90 days after completion of a remedy, the Respondents shall submit to the Department a CMI Report. The report shall, at a minimum, include the following items.

1. A summary of the work completed;

2. A statement signed, if appropriate, by a registered professional engineer, that the remedy has been completed in full satisfaction of the specifications in the CMI Plan.

3. As-built drawings and specifications signed and stamped, if appropriate, by a registered professional engineer;

4. Copies of the results of all monitoring, including sampling and analysis, and other data generated during the remedy implementation, if not already submitted in a progress report;

5. Copies of all waste disposal records, if not already submitted in a progress report;

6. A certification, signed by a responsible official of both Respondents, stating: "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage 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."

VII.D.6. Certificate of Completion for SWMUs and AOCs

Respondents may request a Certificate of Completion for any SWMU or AOC. With such request, Respondents shall submit an appropriate report documenting completion of all work required at the SWMU or AOC. Upon receipt of this information, the Department will determine whether the requirements of this Consent Order for corrective action for a SWMU or AOC have been satisfied. The Department may conduct an inspection of the SWMU or AOC, or request additional information from the Respondents to make this determination. If the Department determines that the requirements have not been satisfied, it will notify the

Respondents in writing of the actions that are necessary to correct the deficiencies. The Respondents shall implement such actions in accordance with the notification. If the Department determines that the requirements of this Consent Order have been satisfied for the SWMU or AOC, it will issue to the Respondents a written Certificate of Completion, which shall state that Corrective Action is Complete With Controls or Corrective Action is Complete Without Controls. If an AOC is designated as Corrective Action Complete With Controls, it shall be considered a SWMU and added to the Permit. *See* Section III.W.

VIII. GROUNDWATER MONITORING WELLS

VIII.A. DRILLING, DESIGN, AND CONSTRUCTION

A variety of methods are available for drilling monitoring wells and piezometers. While the selection of the drilling procedure is usually based on the site-specific geologic conditions, the following issues shall also be considered.

1. Drilling shall be performed in a manner that minimizes impacts to the natural properties of the subsurface materials;

2. Contamination and cross-contamination of groundwater and aquifer materials during drilling shall be prevented;

3. The drilling method shall allow for the collection of representative samples of rock and unconsolidated sediments and soil, as applicable;

4. The drilling method shall allow the Respondents to determine when the appropriate location for the screened interval has been encountered;

5. The drilling method shall allow for the proper placement of the filter pack and annular sealants;

6. The drilling method shall allow for the collection of representative groundwater samples and water level data. Drilling fluids (including air) shall be used only when minimal impact to the surrounding formation and groundwater can be ensured.

The selection of the specific drilling procedure will usually depend on site-specific geologic conditions. Justification for the method selected must be provided to the Department in writing (normally in a work plan or sampling and analysis plan) that will be subject to approval by the Department.

Groundwater monitoring wells and piezometers must be designed and constructed in a manner that will yield high quality, representative samples. Each well or piezometer must be constructed such that it will last the duration of the planned monitoring need (i.e., last long enough to gather enough samples for purposes of establishing concentration trends for Contaminants or potential Contaminants; determining if releases from SWMUs or AOCs will impact groundwater; monitoring post VCA, VCM, or corrective measure activities to ensure efficacy; and monitoring for post-closure care). In the event of a well or piezometer failure, or if a well or piezometer is any way no longer usable for its intended purpose, it must be replaced with an equivalent well or piezometer. In constructing a well or piezometer, Respondents shall ensure that the well or piezometer will not serve as a conduit for Contaminants to migrate between different zones of saturation. The design and construction of groundwater monitoring wells and piezometers shall comply with the guidelines established in EPA guidance, including, but not limited to:

- U.S. EPA, *RCRA Groundwater Monitoring: Draft Technical Guidance*, EPA/530-R-93-001, Nov. 1992;

- U.S. EPA, *RCRA Groundwater Monitoring Technical Enforcement Guidance Document*, OSWER-9950.1, Sept. 1986; and

- Aller, L., Bennett, T.W., Hackett, G., Petty, R.J., Lehr, J.H., Sedoris, H., Nielsen, D.M., and Denne, J.E., *Handbook of Suggested Practices for the Design and Installation of Groundwater Monitoring Wells*, EPA 600/4-89/034, 1991.

VIII.B. WELL DEVELOPMENT

Each monitoring well shall be developed to create an effective filter pack around the well screen, correct damage to the formation caused by drilling, remove fine particles from the formation near the borehole, and assist in restoring the water quality of the saturated zone in the vicinity of the well to that prior to well installation. Development of wells is important to ensure the collection of representative groundwater samples.

Common methods used for developing wells include: pumping and over pumping, backwashing, surging (with a surge block), bailing, jetting, and airlift pumping.

VIII.C. WELL ABANDONMENT

Wells shall be abandoned when they are no longer required in the monitoring network, no longer provide representative groundwater samples because of falling water levels or insufficient productivity, or become damaged beyond repair. The goal of well abandonment is to seal the well in such a manner that it cannot act as a conduit for the migration of Contaminants from either the ground surface to the saturated zone or between saturated zones. Respondents shall prepare an abandonment plan for any and all wells that are to be plugged and abandoned, and shall submit the plan to the Department for approval. Respondents shall not abandon any groundwater monitoring well without prior written approval of the Department.

VIII.D. DOCUMENTATION

All information on the design, construction, and development of each monitoring well shall be recorded and presented on a boring log, a well construction log, and a well construction diagram. The well construction log and diagram shall include the following information.

1. Well name/number;
2. Date of well construction;
3. Drilling method;
4. Drilling contractor and name of driller;
5. Borehole diameter and well casing diameter;
6. Well depth;

7. Casing length;
8. Casing materials;
9. Casing and screen joint type;
10. Screened interval(s);
11. Screen materials;
12. Screen slot size and design;
13. Filter pack material and gradation;
14. Filter pack volume (calculated and actual);
15. Filter pack placement method;
16. Filter pack interval(s);
17. Annular sealant composition;
18. Annular sealant placement method;
19. Annular sealant volume (calculated and actual);
20. Annular sealant interval(s);
21. Surface sealant composition;
22. Surface seal placement method;
23. Surface sealant volume (calculated and actual);
24. Surface sealant interval;
25. Surface seal and well apron design and construction;
26. Well development procedure and turbidity measurements;
27. Well development purge volume(s) and stabilization parameter measurements;
28. Type and design and construction of protective casing;
29. Well cap and lock;
30. Ground surface elevation;
31. Survey reference point elevation on well casing;
32. Top of monitoring well casing elevation;
33. Top of protective steel casing elevation;
34. Name of geologist;
35. Initial water level;
36. Final water level;
37. Date of well development.

IX. GROUNDWATER

IX.A. SAMPLING

Groundwater samples shall initially be obtained from monitoring wells between 10 to 30 days after completion of well development. Groundwater monitoring and sampling shall be conducted at an interval approved in writing by the Department after the initial sampling event or in accordance with the frequency specified in Section XI, Table XI-1, or in accordance with work plans or sampling and analysis plans approved in writing by the Department. The Respondents shall sample all saturated zones screened to allow entry of groundwater into a monitoring well during each sampling event unless otherwise approved in writing by the Department. All requests for variances from the groundwater sampling schedule shall be submitted to the Department, in writing, 30 days prior to the start of scheduled monitoring and sampling events. If a variance is approved, the Department will state so in writing. When a saturated zone is encountered in an exploratory boring that was not intended to be completed as a monitoring well, Respondents shall install a properly constructed groundwater monitoring well in the boring or next to the boring that encountered groundwater. In such cases, samples shall be collected and analyzed for the constituents of concern appropriate to the purpose of the borehole.

Water samples shall be analyzed for physical and chemical parameters as determined in work plans or sampling and analysis plans or other plans and shall be completed by schedules approved by the Department. Sampling shall be conducted in accordance with a written and approved plan or in accordance with the EPA Technical Enforcement Guidance Document (U.S. EPA, *RCRA Groundwater Monitoring Technical Enforcement Guidance Document*, OSWER-9950.1, Sept. 1986).

Sampling and Analysis Plans shall, at a minimum, include the following elements of discussion.

1. Water level measurements;
2. Sampling equipment / pump type;
3. Purge requirements;
4. Filtration;
5. Preservation and holding times;
6. Containers;
7. Sequence of sample fractions;
8. Field quality control (QC) samples;
9. Laboratory QC samples;
10. Labeling containers;
11. Analytical requests;
12. Chain of custody;
13. Handling/shipping;
14. Field parameters:
    - pH, temp, specific conductance;
    - turbidity, dissolved oxygen;

15. Decontamination procedures;
16. Report format;
17. Schedules and frequency of sampling;
18. Report due date;
19. Instrument calibration methods;
20. Health and safety.

IX.B. WELL PURGING

Stagnant well water in each monitoring well shall be purged by removing groundwater prior to sampling to ensure that fresh formation water is being sampled. Micro-purging (or no-purge) methods shall not be employed. Well purging shall be conducted in accordance with the Department's position paper "*Use of Low-Flow and other Non-Traditional Sampling Techniques for RCRA Compliant Groundwater Monitoring*" (Oct. 30, 2001), or in accordance with the EPA technical enforcement guidance document (EPA, RCRA *Groundwater Monitoring Technical Enforcement Guidance Document*, OSWER-9950.1 (Sept. 1986)).

X. REPORTING REQUIREMENTS

X.A. GENERAL

The purpose of this section is to describe general minimum reporting requirements and provide report-format guidance for corrective action activities conducted at all SWMUs and AOCs required under this Consent Order. Included are the general reporting requirements and report-format guidance for site-specific investigation work plans, investigation reports, periodic monitoring reports, Risk Assessment reports, and CME Reports. The Respondents shall consider the reports required pursuant to this Consent Order to be the equivalents of RFI Work Plans, RFI Reports, Periodic Monitoring Reports, Risk Assessment Reports, CMS Plans, CMS Reports, CMI Plans, and CMI Reports for the purposes of RCRA compliance and the Department's fee assessments pursuant to 20.4.2 NMAC. *See* Fed. Reg. 30875-77 (July 27, 1990), proposed 40 C.F.R. §§ 264.520 to 264.524. The Respondents shall include detailed, site-specific requirements in all SWMU and AOC investigation work plans, investigation reports, monitoring reports, and corrective measures evaluation plans and reports. All plans and reports shall be prepared with technical and regulatory input from the Department except for VCA Plans and certain emergency VCM Plans as provided in Sections VI.F and VI.H. All work plans and reports shall be submitted to the Department in the form of one electronic copy and two paper copies. Where information cannot reasonably be converted to an electronic format, the Respondents shall notify the Department prior to the submittal date for the information and shall seek approval for submission of the information in an alternative format. Text documents submitted as an electronic file shall be compatible with Microsoft Word™ and Excel™, and shall be submitted on a compact disk, or in other file formats and devices approved by the Department.

The guidance below does not necessarily include all sections that may be necessary to complete each type of report listed. The Respondents or the Department may determine that additional sections are needed to address site-specific issues or information. Additionally, the sequence in which Sections are presented and specific wording are not compulsory. However, all reports submitted by the Respondents shall follow the general approach and limitations for data presentation described in this section.

X.B. INVESTIGATION WORK PLAN

The Respondents shall prepare an Investigation Work Plan using the format set forth below as guidance. Work plans should be based on the data quality objective process, including discussion on, but not limited to, problem definition, development of a conceptual site model, data need assessment, and decision criteria. All research, locations, depths and methods of exploration, field procedures, analytical analyses, data collection methods, and schedules shall be included in each work plan. In general, interpretation of data acquired during previous investigations should be presented only in the background sections of the work plans. The other text sections of the work plans should be reserved for presentation of anticipated site-specific activities and procedures relevant to the project. Major requirements for the general work plan

are:

1. Title Page and Signature Block (for the name, title, and organization of the preparer and the responsible DOE or Sandia representative);

2. Executive Summary;

3. Table of Contents;

4. Introduction;

5. Background Information;

6. Site Conditions;

7. Scope of Activities;

8. Investigation Methods;

9. Monitoring and Sampling Program;

10. Schedule;

11. Tables;

12. Figures;

13. Appendices (e.g., Investigation–Derived Waste Management Plan).

X.C. INVESTIGATION REPORT

The Respondents shall prepare an Investigation Report using the format set forth below as guidance. This section describes the minimum requirements for reporting. All data collected during investigation of a SWMU or AOC shall be included in the investigation report. In general, interpretation of data should be presented only in the background, conclusions and recommendations sections of the reports. The other text sections of the reports should be reserved for presentation of facts and data without interpretation or qualifications. Major requirements for the general report are:

1. Title Page and Signature Block (for the name, title and organization of the preparer and the responsible DOE and/or Sandia representative);

2. Executive Summary (Abstract);

3. Table of Contents;

4. Introduction;

5. Background Information;

6. Scope of Activities;

7. Field Investigation Result – Including, as applicable, but not limited to: surface conditions; subsurface conditions; monitoring well construction, boring or excavation abandonment; groundwater conditions; materials testing results; and pilot testing results;

8. Regulatory Criteria;

9. Site Contamination – Including, as applicable, but not limited to: soil, rock and sediment sampling analytical results; soil, rock and sediment sample field screening results; groundwater sampling results; surface water sampling results; and subsurface vapor sampling results; and conclusions;

10. Recommendations;

11. Tables;

12. Figures - All figures showing maps shall include an accurate bar scale and a north arrow; other types of figures shall include a bar scale, if appropriate. An explanation shall be provided on each figure for all abbreviations, symbols, acronyms, and qualifiers;

13. Appendices - Including, as appropriate, field methods, boring/test pit logs and well construction diagrams, chemical analytical reports, and other appendices as required by the Department.

X.D. PERIODIC MONITORING REPORT

The Respondents shall prepare a Period Monitoring Report using the format set forth below as guidance. The reports shall present the results of periodic or routine groundwater and remediation system monitoring at the Facility. The following sections provide a general outline as guidance for monitoring reports. All data collected during each monitoring and sampling event in the reporting period shall be included in the reports. In general, interpretation of data should be presented only in the background, conclusions and recommendations sections of the reports. The other text sections of the reports should be reserved for presentation of facts and data without interpretation or qualifications.

1. Title Page and Signature Block (for the name, title and organization of the preparer and the responsible DOE and Sandia representative);

2. Executive Summary (Abstract);

3. Table of Contents;

4. Introduction;

5. Scope of Activities;

6. Regulatory Criteria;

7. Monitoring Results;

8. Conclusions;

9. Tables;

10. Figures;

11. Appendices.

X.E. RISK ASSESSMENT REPORT

The Respondents shall prepare a Risk Assessment Report using the format set forth below as guidance. Risk Assessment Reports may be appended to or combined with CME or Investigation Reports to create a single document for a given SWMU or AOC. This section provides a general outline for risk assessments and also lists the minimum requirements for describing risk assessment elements. In general, interpretation of data should be presented only in the background, conceptual site and risk exposure models, conclusions, and recommendations sections of the reports. The other text sections of the Risk Assessment Report should be reserved for presentation of sampling results from all investigations; the conceptual and mathematical elements of the risk assessment, and presentations of toxicity information and screening values used in the risk assessment. Human health and ecological risk assessments should be presented in separate sections, but the general risk assessment outline applicable to both sections is provided below as guidance. The conceptual site model shall be discussed in all risk assessments.

1. Title Page and Signature Block (for the name, title and organization of the preparer and the responsible DOE and Sandia representative);

2. Executive Summary (Abstract);

3. Table of Contents;

4. Introduction;

5. Background Information -- Including site description and sampling results;

6. Conceptual Site and Risk Exposure Models;

7. Risk Screening Levels -- A section shall present the screening values used for each Contaminant for comparison to all human health and ecological risk screening levels. The requirements of Section VI.I.1.b of this Consent Order shall also be met

   and/or

   Risk Assessment Results -- including uncertainty analysis;

8. Conclusions and Recommendations;

9. Tables;

10. Figures;

11. Appendices.

A section in the report shall summarize the analytical results of sampling at the SWMU or AOC. It shall include a description of the history of releases of Contaminants, the known and possible sources of contamination, and the vertical and lateral extent of contamination present in each medium. Sources that are no longer considered to be ongoing but represent the point of origination for Contaminants transported to other locations shall be included. This section shall reference any pertinent figures, data summary tables, and references in other reports. References to other reports shall include page, table numbers, and figure numbers for referenced information. Summaries of data shall include for each Contaminant: the maximum value detected, the detection limit, the 95th percent upper confidence level (UCL) of the mean (if applicable to the data set), and indicate the statistical method used to calculate the 95th percent UCL of the mean. Background values used for comparison to inorganic constituents and discussion of how “non-detect” analytical results were handled in the averaging of data shall also be included.

Another section in the report shall present the conceptual site and risk exposure models. It shall include information on the expected fate and transport of Contaminants detected at the SWMU or AOC. The discussion of fate and transport shall address potential migration of each Contaminant in each medium, potential breakdown products and their migration, and anticipated pathways of exposure for human or ecological receptors. Diagrammatic representations of the conceptual site and risk exposure models shall appear in the figures section of the document. For human health risk assessments, the conceptual site and risk exposure models shall include the current and foreseeable future land use (such as industrial or recreational) for all risk

assessments.

All values for exposure parameters and the source of those values shall be included in table format and presented in the Tables section of the document. Conceptual site and risk exposure models presented for ecological risk assessments shall identify assessment endpoints and measurement receptors for the SWMU or AOC. The discussion of the models shall explain how the measurement receptors are protective of the ecological receptors.

If risk screening is utilized, a section in the report shall present the actual screening values used for each Contaminant for comparison to all human health and ecological risk screening levels. Other regulatory levels applicable to screening the site, such as drinking water MCLs or WQCC standards, shall also be included in this section.

For risk assessments a section of the report shall present risk values, hazard quotients (HQ), and HIs for human health under projected future land use and residential scenarios and any site-specific scenarios. A similar section shall also present for each Contaminant the HQ for each ecological receptor.

Finally, a section shall also be included in the report that contains a discussion of qualitative, semi-quantitative, and quantitative uncertainty in the risk assessment and provides estimates of the potential impact of the various uncertainties. Appendices may include the results of statistical analyses of data sets and comparisons of data, full sets of results of all sampling investigations at the site, or other data as appropriate.

X.F. CORRECTIVE MEASURES EVALUATION REPORT

The Respondents shall prepare a CME Report using the format set forth below as guidance. Investigation summaries, site condition descriptions, corrective action goals, corrective action options, selection criteria, and schedules shall be included in the CME Report. In general, interpretation of historical investigation data should be presented only in the background sections. At a minimum, detections of Contaminants encountered during previous site investigations shall be presented in table format with an accompanying site plan showing sample locations. The other text sections of the CME Report should be reserved for presentation of corrective action-related information regarding anticipated or potential site-specific corrective action options and methods relevant to the project. Elements and suggested format for CME reports are as follows.

1. Title Page and Signature Block (for the name, title and organization of the preparer and the responsible DOE and Sandia representative);

2. Executive Summary (Abstract);

3. Table of Contents;

4. Introduction;

5. Background Information;

6. Site Conditions -- Including, as appropriate, surface, subsurface, and groundwater conditions;

7. Potential Receptors -- Including sources, pathways, and receptors;

8. Regulatory Criteria;

9. Identification of Corrective Measures Options;

10. Evaluation of Corrective Measures Options -- Including the required information in Section VII.C.3.a-b(i-v) ;

11. Selection of Preferred Corrective Measure;

12. Design Criteria to Meet Cleanup Objectives;

13. Schedule;

14. Tables;

15. Figures;

16. Appendices.

XI. COMPLIANCE SCHEDULE TABLES

The Respondents shall meet the specified compliance schedules for all SWMUs and AOCs included in this Consent Order. Table XI-1 presents the schedules for groundwater monitoring. Table XI-2, which is the schedule subject to stipulated penalties pursuant to Section III.G.1, summarizes in chronological order by due date the reports that shall be submitted. Table XI-3 is a cross-reference to Table XI-2 and identifies in detail the appropriate reports that are required by this Consent Order for each SWMU or AOC and their due dates.

Any report required by this Consent Order may contain an associated Risk Assessment Report and a request for a Certificate of Completion. The Department expects to determine within 60 days of receipt of an appropriate report whether to grant a Certificate of Completion for the subject SWMU or AOC.

Reports submitted to the Department by the Respondents on or before September 30, 2003 are listed in Table XI-4. The Department expects to determine whether to issue a Certificate of Completion for each SWMU or AOC listed in Table XI-4 by September 30, 2004. If the Department decides not to issue a Certificate of Completion and makes a decision to require Respondents to perform additional work, any such additional work shall be performed in accordance with the terms of this Consent Order.

Table XI-1. Groundwater Monitoring and Sampling Schedule

Site	***Minimum Sampling Frequency**
Mixed Waste Landfill	New wells: MW5 and MW6 – Quarterly for eight quarters, then annually. Other wells: Annually
Facility-Wide (Perchlorate Screening)	New Wells and Existing Wells (NWTA3-MW2, MRN-3D, MRN-2, MWL-BW1, MWL-MW1, CYN-MW1D, and CYN-MW5); Quarterly for four quarters, unless perchlorate is detected. If perchlorate is detected, the Respondents will continue monitoring at a frequency negotiated with the Department.
Technical Area V Groundwater	Quarterly
Tijeras Arroyo Groundwater area	Six events – after TAG HPT Characterization Plans approved by the Department and starting no later than the first quarter of Calendar Year 2004 (followed by CME)
Burn Site Groundwater	New Wells: Quarterly for eight quarters, then semi-annually.

*The Department may increase the sampling frequency and require additional analytical parameters if necessary to protect human health and the environment. Respondents may request a change in monitoring or termination of monitoring on a case-by-case basis. Such request may be approved by the Department in writing without formal modification of the Consent Order.

Table XI-2. Summary Schedule of Deliverables in Chronological Order (Calendar Year)

(Substitutions between Drains & Septic Systems sites -- those marked with an asterisk (*) -- may be made with written notification only; see Section IV.E)

Deliverable/ Report Number (Crosswalk to Table XI-3)	SWMU/AOC Description	Deliverable	Due Date	Expected Review Time
			Calendar Year 2003	2003
			Fourth Quarter 2003	
1	Drains & Septic Systems	Appropriate Report[2] (8 sites*)	12/31/2003	See Footnote #1
2	Misc. Sites	Appropriate Report[2] (3 sites)	12/31/2003	See Footnote #1
			Calendar Year 2004	2004
			First Quarter 2004	
3	Drains & Septic Systems	Appropriate Report[2] (6 sites*)	3/31/2004	See Footnote #1
4	Misc. Sites	Appropriate Report[2]	3/31/2004	Deliverable already Submitted
			Second Quarter 2004	
5	Drains & Septic Systems	Appropriate Report[2] (9 sites*)	6/30/2004	See Footnote #1
			Third Quarter 2004	
6	Drains & Septic Systems	Appropriate Report[2] (6 sites*)	9/30/2004	See Footnote #1
7	Misc. Sites	Appropriate Report[2]	9/30/2004	Deliverable already Submitted
8	Landfills	Mixed Waste Landfill CMI Plan	9/30/2004	See Footnote #1
			Fourth Quarter 2004	
9	Drains & Septic Systems	Appropriate Report[2] (13 sites*)	12/31/2004	See Footnote #1
10	Misc. Sites	Appropriate Report[2] (2 sites)	12/31/2004	See Footnote #1

			Calendar Year 2005	2005
			First Quarter 2005	
11	Drains & Septic Systems	Appropriate Report[2] (5 sites*)	3/31/2005	See Footnote #1
12	Misc. Sites	Appropriate Report[2] (1 site)	3/31/2005	See Footnote #1
			Second Quarter 2005	
13	Misc. Sites	Appropriate Report[2] (2 sites)	4/26/2005	See Footnote #1
14	Drains & Septic Systems	Appropriate Report[2] (5 sites*)	6/30/2005	See Footnote #1
15	Misc. Sites	Appropriate Report[2] (1 site)	6/30/2005	See Footnote #1
			Third Quarter 2005	
16	Drains & Septic Systems	Appropriate Report[2] (4 sites*)	9/30/2005	See Footnote #1
17	Misc. Sites	Appropriate Report[2] (3 sites)	9/30/2005	See Footnote #1
18	Groundwater	CME Reports (3 locations)	9/30/2005	See Footnote #1
			Fourth Quarter 2005	
19	Drains & Septic Systems	Appropriate Report[2] (5 sites*)	12/31/2005	See Footnote #1
			Calendar Year 2006	2006
			First Quarter 2006	
20	Landfills	Mixed Waste Landfill CMI Report	1/20/2006	See Footnote #1
21	Misc. Sites	Appropriate Report[2]	3/31/2006	Deliverable already Submitted

[1] Expected Department review times -- 60 days or less upon receipt. See Section III.M.2.

[2] Appropriate Report includes Investigation Reports, CME, or CMI Reports as provided in Table XI-3 and may include a Request for Certificate of Completion pursuant to Section VII.D.6. Certificate of Completion.

Table XI-3. Detailed Description of Appropriate Report by Deliverable / Report Number

Deliverable/ Report #	Grouping of SWMU/AOC	Site #	SWMU or AOC Description		Report	Due Date
1	Drains & Septic Systems [2]	1	1009	Bldg. 6620 Internal Sump (TA-III)	Investigation Report	12/31/2003
		2	1025	Bldg. 6501 East Septic System (TA-III) [Active Site [3]]	Investigation Report	12/31/2003
		3	1026	Bldg. 6501 West Septic System (TA-III)	Investigation Report	12/31/2003
		4	1033	Bldg. 6631 Septic System (TA-III)	Investigation Report	12/31/2003
		5	1027	Bldg. 6530 Septic System (TA-III)	Investigation Report	12/31/2003
		6	1093	Bldg. 6584 West Septic System (TA-III)	Investigation Report	12/31/2003
		7	1101	Bldg. 885 Septic System (TA-I)	Investigation Report	12/31/2003
		8	1105	Bldg. 6596 Drywell (TA-V)	Investigation Report	12/31/2003
		9	1112	Bldg. 6590 Reactor Sump Drywell (TA-V)	Investigation Report	12/31/2003
2	Misc. Sites	1	96	Storm Drain System	Investigation Report	12/31/2003
		2	187	Septic Tank Piping for POTW	Investigation Report	12/31/2003
		3	226	Old Acid Waste Line	Investigation Report	12/31/2003
3	Drains & Septic Systems [2]	1	1006	Bldg. 6741 Septic System (TA-III)	Investigation Report	3/31/2004
		2	1007	Bldg. 6730 Septic System (TA-III)	Investigation Report	3/31/2004
		3	1015	Former MO 231-234 Septic System (TA-V)	Investigation Report	3/31/2004
		4	1020	MO-146, MO-235, and T-40 Septic System (TA-III)	Investigation Report	3/31/2004
		5	1029	Bldg. 6584 North Septic System (TA-III)	Investigation Report	3/31/2004
		6	1110	Bldg. 6536 Drain System (TA-III)	Investigation Report	3/31/2004
4	Misc. Sites	1	227	Bunker 904 Outfall	Investigation Report [1]	3/31/2004
		2	229	Storm Drain System Outfall (for TA-II)	Investigation Report [1]	3/31/2004
		3	195	Experimental Test Pit	Investigation Report [1]	3/31/2004

5	Drains & Septic Systems[2]	1	48	Bldg. 904 Septic System and HE Drain System (TA-II)	Investigation Report	6/30/2004
		2	135	Bldg. 906 Drain System (TA-II)	Investigation Report	6/30/2004
		3	136	Bldg. 907 Septic System and HE Drain System (TA-II)	Investigation Report	6/30/2004
		4	159	Bldg. 935 Septic System and Drywell (TA-II)	Investigation Report	6/30/2004
		5	165	Bldg. 901 Septic System (TA-II)	Investigation Report	6/30/2004
		6	166	Bldg. 919 Septic System and Seepage Pit (TA-II)	Investigation Report	6/30/2004
		7	167	Bldg. 940 Septic System and Seepage Pits (TA-II)	Investigation Report	6/30/2004
		8	1086	Bldg. 6523 Septic System (TA-III)	Investigation Report	6/30/2004
		9	1024	MO 242-245 Septic System (TA-III)	Investigation Report	6/30/2004
6	Drains & Septic Systems[2]	1	1010	Bldg. 6536 Septic System and Seepage Pit (TA-III)	Investigation Report	9/30/2004
		2	1028	Bldg. 6560 Septic System and Seepage Pit (TA-III)	Investigation Report	9/30/2004
		3	1079	Bldg. 6643 Septic System (TA-III)	Investigation Report	9/30/2004
		4	1083	Bldg. 6570 Septic System (TA-III)	Investigation Report	9/30/2004
		5	1108	Bldg. 6531 Seepage Pits (TA-III)	Investigation Report	9/30/2004
		6	1120	Bldg. 6643 Drywell (TA-III)	Investigation Report	9/30/2004
7	Misc. Sites	1	52	LWDS Holding Tank	Investigation Report[1]	9/30/2004
		2	87	Bldg. 9990 Firing Site	Investigation Report[1]	9/30/2004
8	Landfills	1	76	Mixed Waste Landfill (TA-III)	Corrective Measures Implementation Plan	9/30/2004
9	Drains & Septic Systems[2]	1	276	Former Bldg. 829X Silver Recovery Sump (TA-I)	Investigation Report	12/31/2004
		2	1031	Former Bldgs. 6589 and 6600 Septic System (TA-III)	Investigation Report	12/31/2004
		3	1034	Bldg. 6710 Septic System (TA-III)	Investigation Report	12/31/2004
		4	1035	Bldg. 6715 Septic System (TA-III)	Investigation Report	12/31/2004
		5	1036	Bldg. 6922 Septic System (TA-III)	Investigation Report	12/31/2004

		6	1078	Bldg. 6640 Septic System (TA-III)	Investigation Report	12/31/2004
		7	1080	Bldg. 6644 Septic System (TA-III)	Investigation Report	12/31/2004
		8	1084	Bldg. 6505 Septic System (TA-III)	Investigation Report	12/31/2004
		9	1087	Bldg. 6743 Seepage Pit (TA-III)	Investigation Report	12/31/2004
		10	1098	TA-V Plenum Rooms Drywell (TA-V)	Investigation Report	12/31/2004
		11	1102	Former Bldg. 889 Septic System (TA-I)	Investigation Report	12/31/2004
		12	1104	Bldg. 6595 Seepage Pit (TA-V)	Investigation Report	12/31/2004
		13	1113	Bldg. 6597 Drywell (TA-V)	Investigation Report	12/31/2004
10	Misc. Sites	1	45	Liquid Discharge (behind TA-IV)	Investigation Report	12/31/2004
		2	46	Old Acid Waste Line Outfall	Investigation Report	12/31/2004
11	Drains & Septic Systems[2]	1	137	Bldg. 6540/6542 Septic System (TA-III)	Investigation Report	3/31/2005
		2	1052	Bldg. 803 Seepage Pit (TA-I)	Investigation Report	3/31/2005
		3	1081	Bldg. 6650 Septic System (TA-III)	Investigation Report	3/31/2005
		4	1090	Bldg. 6721 Septic System (TA-III)	Investigation Report	3/31/2005
		5	1092	MO 228-230 Septic System (TA-III)	Investigation Report	3/31/2005
		6	1004	Bldg. 6969 Septic System (Robotic Vehicle Range) [Active Site [3]]	Investigation Report	3/31/2005
12	Misc. Sites	1	28-2	Mine Shafts	Investigation Report	3/31/2005
13	Misc. Sites	1	8	Open Dump (Coyote Canyon Blast Area)	Investigation Report	4/26/2005
		2	58	Coyote Canyon Blast Area	Investigation Report	4/26/2005
14	Drains & Septic Systems[2]	1	49	Bldg. 9820 Drains (Lurance Canyon)	Investigation Report [1]	6/30/2005
		2	116	Bldg. 9990 Septic System (Coyote Test Field)	Investigation Report [1]	6/30/2005
		3	138	Bldg. 6630 Septic System (TA-III)	Investigation Report	6/30/2005
		4	146	Bldg. 9920 Drain System (Coyote Test Field)	Investigation Report	6/30/2005
		5	148	Bldg. 9927 Septic System (Coyote Test Field)	Investigation Report	6/30/2005
		6	149	Bldg. 9930 Septic System (Coyote Test Field)	Investigation Report [1]	6/30/2005

		7	152	Bldg. 9950 Septic System (Coyote Test Field)	Investigation Report	6/30/2005
		8	154	Bldg. 9960 Septic System and Seepage Pits (Coyote Test Field)	Investigation Report	6/30/2005
15	Misc. Sites	1	35	Vibration Facility Oil Spill (TA-III)	Investigation Report [1]	6/30/2005
		2	91	Lead Firing Site (Thunder Range)	Investigation Report	6/30/2005
16	Drains & Septic Systems[2]	1	101	Bldg. 9926/9926A Septic System and Seepage Pit (Coyote Test Field)	Investigation Report	9/30/2005
		2	153	Bldg. 9956 Septic Systems (Coyote Test Field)	Investigation Report	9/30/2005
		3	161	Bldg. 6636 Septic System (TA-III)	Investigation Report [1]	9/30/2005
		4	1095	Bldg. 9938 Seepage Pit (Coyote Test Field)	Investigation Report	9/30/2005
		5	1117	Bldg. 9982 Drywell (Solar Tower Complex)	Investigation Report	9/30/2005
		6	1094	Live Fire Range East Septic System (Lurance Canyon) [Active Site [3]]	Investigation Report	9/30/2005
17	Misc. Sites	1	78	Gas Cylinder Disposal Pit	Investigation Report	9/30/2005
		2	196	Bldg. 6597 Cistern (TA-5)	Investigation Report	9/30/2005
		3	68	Old Burn Site	Investigation Report	9/30/2005
18	Groundwater	1	TAG	Tijeras Arroyo Groundwater area	Corrective Measures Evaluation Report	9/30/2005
		2	TA-V	TA-V Groundwater	Corrective Measures Evaluation Report	9/30/2005
		3	Burn Site	Burn Site Groundwater	Corrective Measures Evaluation Report	9/30/2005
19	Drains & Septic Systems[2]	1	140	Bldg. 9965 Septic System and Drywell (Thunder Range)	Investigation Report	12/31/2005
		2	147	Bldg. 9925 Septic Systems (Coyote Test Field)	Investigation Report	12/31/2005
		3	150	Bldgs. 9939/9939A Septic System and Drainfield (Coyote Test Field)	Investigation Report [1]	12/31/2005
		4	1114	Bldg. 9978 Drywell (Coyote Test Field)	Investigation Report	12/31/2005
		5	1115	Former Offices Septic System (Solar Tower Complex)	Investigation Report	12/31/2005
		6	1116	Bldg. 9981A Seepage Pit (Solar Tower Complex)	Investigation Report	12/31/2005

20	Landfills	1	76	Mixed Waste Landfill (TA-III)	Corrective Measures Implementation Report	1/20/2006
21	Misc. Sites	1	4	LWDS Surface Impoundments	Investigation Report[1]	3/31/2006

1. Deliverable for SWMU/AOC has been submitted to the Department.
2. Substitutions between Drains and Septic Systems may be made with written notification only; see Section IV.E.
3. Active DSS Site - Status of characterization will be reported in an Investigation Report, but SWMU/AOC will also be subject to requirements in the Facility's RCRA Permit.

Table XI-4. Reports Submitted On or Before September 30, 2003				
SWMU or AOC Description		**Report**	**Due Date**	**Date Delivered to NMED**
1001	Bldg. 898 Septic System (TA-I)	Investigation Report	September 30, 2003	9/25/03
1003	Former Bldg. 915/922 Septic System (TA-II)	Investigation Report	June 30, 2003	7/10/03
1008	Bldg. 6750 Septic System (TA-III)	Investigation Report	June 30, 2003	7/10/03
1014	Former T-12, T-42, and T-43 Septic System (TA-V)	Investigation Report	September 30, 2003	9/25/03
1030	Bldg. 6587 Septic System (TA-III)	Investigation Report	September 30, 2003	9/25/03
1032	Bldg. 6610 Septic System (TA-III)	Investigation Report	September 30, 2003	9/25/03
1072	Bldg. T-52 and Former Bldg. 6500 Septic System (TA-V)	Investigation Report	June 30, 2003	7/10/03
1073	Bldg. 6580 Seepage Pit (TA-V)	Investigation Report	September 30, 2003	9/25/03
1077	Bldg. 6920 Septic System (TA-III)	Investigation Report	September 30, 2003	9/25/03
1082	Bldg. 6620 Septic System (TA-III)	Investigation Report	June 30, 2003	7/10/03
1089	Bldg. 6734 Seepage Pit (TA-III)	Investigation Report	September 30, 2003	9/25/03
1091	Bldg. 6720 Septic System (TA-III)	Investigation Report	June 30, 2003	7/10/03
1096	Bldg. 6583 Septic System (TA-III)	Investigation Report	September 30, 2003	9/25/03
1111	Bldg. 6720 Drywell (TA-III)	Investigation Report	September 30, 2003	9/25/03
30	PCB Spill (Reclamation Yard)	Investigation Report	[2]N/A	9/2001
33	Motor Pool Oil Spill	Investigation Report	[2]N/A	7/2001
98	Bldg. 863 (TCA, Photochemical Releases: Silver Catch Boxes)	Investigation Report	[2]N/A	9/5/00
190	Steam Plant Tank Farm	Investigation Report	December 31, 2002	9/24/02
1	Radioactive Waste Landfill	Investigation Report	March 31, 2003	3/10/03
2	Classified Waste Landfill	Investigation Report	[2]N/A	12/2002
3	Chemical Disposal Pit	Combined with SWMU 1	[2]N/A	3/10/03

114	Explosive Burn Pit	Investigation Report	December 31, 2002	1/31/03
18	Concrete Pad	Investigation Report	[2]N/A	11/6/00
26	Burial Site (West of TA-3)	Investigation Report	December 31, 2003	8/14/01
83	Long Sled Track	[1] Active Site	[2]N/A	[3]TBD
84	Gun Facilities	[1] Active Site	[2]N/A	[3]TBD
107	Explosive Test Area (South-East TA-III)	Investigation Report	December 31, 2002	9/28/01
240	Short Sled Track	[1] Active Site	[2]N/A	[3]TBD
241	Storage Yard	Investigation Report	[2]N/A	6/1996
5	LWDS Drainfield (TA-V)	Investigation Report	December 31, 2002	12/10/02
230	Storm Drain System Outfall (for TA-IV)	Investigation Report	December 31, 2002	1/31/03
231	Storm Drain System Outfall (for TA-IV)	Investigation Report	December 31, 2002	1/31/03
232	Storm Drain System Outfall	Investigation Report	December 31, 2002	1/31/03
233	Storm Drain System Outfall	Investigation Report	December 31, 2002	1/31/03
234	Storm Drain System Outfall	Investigation Report	December 31, 2002	1/31/03
66	Boxcar Site	Investigation Report	December 31, 2002	1/22/03
94-B	Debris/Soil Mound Area	Investigation Report	December 31, 2002	10/9/01
94-F	LAARC Discharge Pit	Investigation Report	December 31, 2002	10/9/01
9	Burial Site/Open Dump (Schoolhouse Mesa)	Investigation Report	[2]N/A	9/5/00
Bldg 828	Mechanical Test Laboratory (TA-I)	Investigation Report	[2]N/A	6/2001
TNT Site	High Explosive Detonation Site	Investigation Report	March 31, 2003	9/24/02
94H Spill	Fuel Spill at 94H	Investigation Report	March 31, 2003	9/24/02

1. Active Site - SWMU/AOC will also be addressed in the Facility's RCRA Permit.
2. N/A – Due date not previously established.
3. TBD – submittal due date to be determined by RCRA Permit condition.

The undersigned persons executing this Consent Order represent that they have all the requisite authority to bind the Party that they represent to the terms of this Consent Order, and further agree that this representation of authority as to each such Party shall be legally sufficient evidence of actual or apparent authority to bind each of them to all of the terms and conditions of this Consent Order.

The foregoing is hereby AGREED and CONSENTED TO by the Parties:

NEW MEXICO ENVIRONMENT DEPARTMENT

Ron Curry
Secretary

Date 4/29/04

Tannis L. Fox by C.dS
Tannis L. Fox
Deputy General Counsel
Charles de Saillan
Assistant General Counsel

Date 4-29-04

UNITED STATES DEPARTMENT OF ENERGY

Patty Wagner
Patty Wagner
Manager, Sandia Site Office

Date 4-28-04

SANDIA CORPORATION

Les Shephard
Les Shephard
Vice President, Energy, Information and Infrastructure Surety

Date Apr. 28, 2004

Section III of Consent Order approved by:

STATE OF NEW MEXICO ATTORNEY GENERAL

Patricia A. Madrid
Patricia A. Madrid
Attorney General
Stephen R. Farris
Assistant Attorney General

Date Apr. 22 '04