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**Resource Conservation  
and Recovery Act Facility  
Investigation (RFI) Work Plan  
For SWMU #8,  
Former Coronado Landfill**

Prepared for  
**Philips Semiconductors,  
Albuquerque, New Mexico**

OCTOBER 1999



**CH2MHILL**

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## ACRONYMS

AIDS	Albuquerque Industrial Development Service
AMAFCA	Albuquerque Metropolitan Area Flood Control Authority
ASTM	American Society for Testing Materials
bgs	belowground surface
BH	Bohannon-Huston, Inc.
CML	Coronado Municipal Landfill
COC	constituent of concern
CRP	Community Relations Plan
DBS	Daniel B. Stephens and Associates, Inc.
DCQAP	Data Collection Quality Assurance Plan
DMP	Data Management Plant
DQO	Data Quality Objective
EB	exploratory boring
EMCON	EMCON Associates
EPA	U.S. Environmental Protection Agency
EPT	Extraction Procedure Toxicity
ERCO	Energy Resources Company
ERM	ERM-Rocky Mountain, Inc.
ESA	Environmental Site Assessment
ft	feet
ft/ft	feet per feet
HHRB	human health risk-based
hr	hour
HSWA	Hazardous and Solid Waste Amendments
I.D.	inside diameter
IDW	Investigation-Derived Waste
IDWMP	Investigation-Derived Waste Management Plan
IT	IT Corporation
kg	kilogram
LEL	lower explosive limit
MCL	maximum contaminant limit
MDL	method detection limit
µg/L	microgram per liter
mg/L	milligram per liter
mg	milligram
mg/kg	milligram per kilogram



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mph	miles per hour
msl	mean sea level
MW	monitoring well
ND	not detected
NFA	no further action
NMDGF	New Mexico Department of Game and Fish
NMED	New Mexico Environment Department
NMFRCD	New Mexico Forestry and Resource Conservation
NMGS	New Mexico Geological Survey
NMWQCC	New Mexico Water Quality Control Commission
NOAA	National Oceanic and Atmospheric Administration
PCE	tetrachloroethene
PID	photoionization detector
PPE	personal protective equipment
ppm	parts per million
PRC	PRC Environmental Management, Inc.
PVC	polyvinyl chloride
QA/QC	quality assurance/quality control
RCRA	Resource Conservation and Recovery Act
RFI	RCRA Facility Investigation
SHB	Sergent, Hauskins & Bechwith
SVOC	semivolatile organic compound
SWMU	solid waste management unit
TCLP	toxicity characteristic leaching procedure
TDS	total dissolved solids
TKN	total Kjeldahl nitrogen
TOC	total organic carbon
TPH	total petroleum hydrocarbon
VOC	volatile organic compound
USGS	U.S. Geological Survey

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**Section 1**  
**Introduction**

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## 1. INTRODUCTION

This Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) Work Plan presents the technical approach to characterizing the nature and extent of potential contamination associated with Solid Waste Management Unit (SWMU) #8, known as the former Coronado Municipal Landfill (CML).

This work plan satisfies the permit conditions as stipulated in Philips Semiconductors' (Philips) Hazardous and Solid Waste Amendments (HSWA) Module IV—Corrective Action of RCRA Permit No. NMD000709782-1 (hereinafter referred to as RCRA Permit). The U.S. Environmental Protection Agency (EPA) issued the RCRA Permit on April 1, 1986. In 1995, EPA proposed to modify the RCRA Permit issued to Philips to reflect the newly identified SWMU called the CML. The permit was reissued by the New Mexico Environment Department (NMED) as HSWA Module IV (hereinafter referred to as the HSWA Module), which became effective March 18, 1996 (NMED, 1996a). Philips is submitting this work plan to the NMED in fulfillment of the RFI Work Plan submittal requirement as set forth in the HSWA Module.

### 1.1 Objectives and Scope

The primary objective of the RFI is to determine the nature and extent of contamination located at the Philips facility, and to determine whether the former CML is the source for tetrachloroethene (PCE) detected in groundwater samples from Philips' wells MW-1, MW-2, and MW-4 or if the PCE contamination is originating from an offsite source.

This RFI Work Plan only addresses SWMU #8, the former CML. All other SWMUs associated with the Philips facility were closed in accordance with the provisions of the Part B Permit. Additionally, the occurrence of PCE in groundwater below SWMU #8 is not associated with operations at the Philips facility, because PCE has never been used at the facility.

Throughout this RFI Work Plan, the term "site" refers to the former CML and the term "facility" applies to the Philips manufacturing operations. Additionally, this RFI Work Plan only addresses portions of the CML south of San Diego Avenue that are overlain by property currently leased by Philips from the City of Albuquerque.

### 1.2 Approach and Implementation

This sampling plan is designed to collect adequate samples to characterize the nature and extent of constituents of concern (COCs) in groundwater and soil. Specifically, the approach is outlined to collect data of sufficient quantity and quality to determine whether regulated hazardous constituents are present at the site at levels that would threaten human health or the environment. This characterization will include review of existing data and collection of additional data, as necessary, to define the vertical and horizontal extent of COCs previously identified as being present in soil and groundwater samples.

### 1.3 Background Issues

#### 1.3.1 Regulatory Requirements

To comply with the HSWA Module requirements, Philips submitted a RFI Work Plan to the NMED in June 1996 (NMED, 1996a) to satisfy the HSWA Module requirements. Table 1-1 lists the requirements

for each task applicable to this work plan and identifies the chapters and annexes that address these requirements.

### 1.3.2 Other Issues

This Work Plan serves as the scoping document for the implementation of the SWMU #8, former CML site RFI. The RFI Work Plan has been written in conformance with the NMED's suggested Sampling and Analysis Plan format (NMED, 1998).

## 1.4 Data Quality Objectives Process

The data quality objectives (DQO) process defines qualitative and quantitative statements that specify the quality of the data required to support project decisions. DQOs are defined based on the end uses of the data to be collected and are applicable to all data collection activities (EPA, 1987). The level of detail, analytical level, and data quality requirements are dependent upon the intended use of the data. The DQO development process also helps to specify the level of uncertainty that a decisionmaker is willing to accept in results derived from environmental data when the results are used in a regulatory or programmatic decision (e.g., establishing analytical method requirements or sampling protocols).

**Table 1-1. HSWA Module RFI Work Plan Requirements  
Related to SWMU #8, Former Coronado Municipal Landfill**

<b>N.3 Task I: RFI Work Plan</b>	
<b>HSWA Module Requirement</b>	<b>SWMU #8, Former CML, Work Plan</b>
N.3(a) Introduction	Section 1.0
N.3(b) Environmental Setting	Section 2.0
N.3(c) Source Characterization	Sections 2.0 & 3.0
N.3(d) Contamination Characterization	Sections 2.0 & 3.0
N.3(e) Potential Receptors	Section 2.0
N.3(f) Data Collection Quality Assurance Plan	Section 3.0 & Annex I
N.3(g) Data Management Plan	Section 3.0 & Annex II
N.3(h) Health and Safety Plan	Section 4.0 & Annex III
N.3(i) Community Relations Plan	Section 4.0 & Annex IV
N.3(j) Project Management Plan	Annex V

**Section 2**  
**SWMU #8**

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## 2. SWMU #8

### 2.1 Characterization and Setting

#### 2.1.1 Site Description

##### 2.1.1.1 Location and Geographic Setting

The former CML is located in New Mexico at the northern edge of the City of Albuquerque (COA) near the north boundary of the Elena Gallegos Land Grant and south of the Sandia Pueblo Land Grant (Figures 2-1 and 2-2). The disturbed area associated with the CML covers approximately 60 acres in Township 11 North, Range 3 East, Section 12 of the Alameda Quadrangle and is bordered on the east by Interstate-25, to the north by Beverly Hills Avenue (planned) and vacant land, to the south by Modesto Avenue and private businesses, and to the west by San Mateo Boulevard and manufacturing facilities (Figure 2-3). There is a residential area to the southwest of the former CML. Figure 2-4 shows surrounding land uses.

##### 2.1.1.2 Topography

The disturbed area north of the Philips facility slopes gently westward toward the Rio Grande, while portions of the former CML covered by the facility slope gently south and north to diversion channels constructed on the south and north sides of the facility. The principal drainage features associated with the CML are the north and south La Cueva diversion channels (Figure 2-3). Elevations across the CML area range from 5,150 feet above mean sea level (msl) on the west to 5,190 feet above msl on the east.

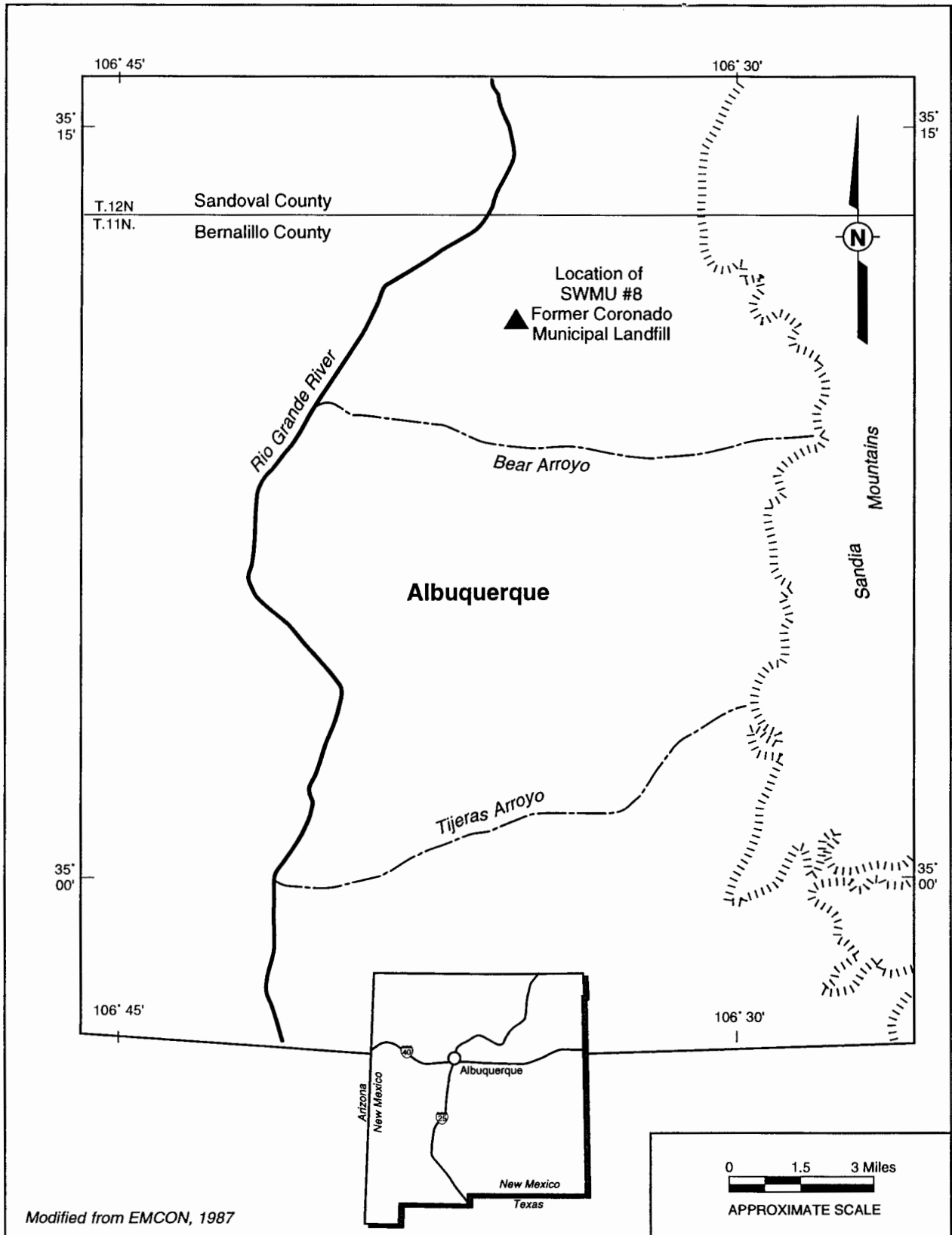
##### 2.1.1.3 Climate

The climate summary is based on weather information from the National Oceanic and Atmospheric Administration (NOAA) meteorological station located at the Albuquerque International Sunport, which is the closest NOAA meteorological station to the CML. Monthly climatological data for precipitation, relative humidity, and temperature at the Albuquerque International Sunport are probably adequate to characterize the CML. However, the data may not be fully representative of conditions at the site.

##### *Temperature and Humidity*

The Albuquerque area climate is characterized by low precipitation; wide temperature extremes; frequent, drying winds; heavy rain showers usually of short duration and often with erosive effects; and erratic, seasonal distribution of precipitation. The average annual temperature in Albuquerque is 56 degrees Fahrenheit (°F), with an average diurnal temperature range of 28°F. The average daily temperature range is highly variable, but extreme temperatures are rare. In Albuquerque, the temperature reaches 90°F an average of 63 days a year, usually from May through September.

Freezing temperatures occur an average of 119 days each year, primarily from November to early April. On average, the temperature reaches 0°F and below less than one day a year (NOAA, 1990). The average frost-free season in Albuquerque is 190 days, from mid-April to late October. The air is normally dry, and the average annual relative humidity is about 44 percent, ranging from nearly 60 percent in the early morning to approximately 29 percent in the afternoon (NOAA, 1990). On average, Albuquerque has 169 sunny days a year.



**Figure 2-1**  
**Location of SWMU #8, Former Coronado Municipal Landfill,**  
**Albuquerque, New Mexico**