

**COMPREHENSIVE LONG-TERM ENVIRONMENTAL ACTION NAVY (CLEAN II)**  
**Northern and Central California, Nevada, and Utah**  
**Contract Number N62474-94-D-7609**  
**Contract Task Order 267**

**Prepared For**

**DEPARTMENT OF THE NAVY**  
**Roy Santana, Remedial Project Manager**  
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**NAVAL WEAPONS STATION SEAL BEACH DETACHMENT,  
CONCORD, CALIFORNIA**

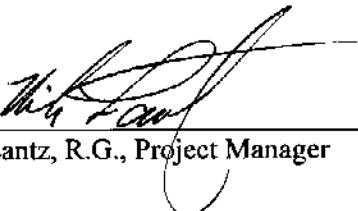
**AREA OF CONCERN 1  
CONTRA COSTA WATER DISTRICT PUMP STATION**

**PRELIMINARY ASSESSMENT REPORT**

**April 28, 1999**

**Prepared By**

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April 28, 1999

Mr. Stan Heller  
Naval Weapons Station Seal Beach Detachment, Concord  
10 Delta St., Code C043, Building IA-1  
Concord, CA 94520

**Subject:**      **Area of Concern 1 Draft Preliminary Assessment Report**  
                        **Naval Weapons Station, Seal Beach Detachment Concord**  
                        **Contract No. N62474-88-D-5086, Contract Task Order No. 0267**

Dear Mr. Heller:

Tetra Tech EM Inc. is pleased to submit this draft copy of the preliminary assessment report for Area of Concern 1 for your review. Any comments that you may have will be incorporated in the final version of the report that will be sent the regulatory community. Should you have any questions or comments, please don't hesitate to call me at (415) 222-8325.

Sincerely,

A handwritten signature in black ink, appearing to read "Rik Lantz".

Rik Lantz, R.G.  
Hydrogeologist

Attachment

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## **1.0 INTRODUCTION**

Tetra Tech EM Inc. (TTEMI), was awarded Contract Task Order (CTO) 267 to conduct a preliminary assessment (PA) of area of concern 1 (AOC1), a parcel of land near the eastern boundary of Naval Weapons Station Seal Beach Detachment, (NWS) Concord. Potential contamination at AOC1 came to the attention of the U.S. Navy (Navy) when the Contra Costa Water District (CCWD) installed a pump station at the site in 1998. Sampling conducted to determine appropriate options to dispose of excavated soils showed that the soils were contaminated with lead, mercury, and selenium.

The overall purpose of CTO 267 is to conduct a PA of AOC1 to determine if the site warrants further investigation under the Navy's Installation Restoration Program. The specific objectives of this PA are to (1) examine and present existing data regarding site history and potential contaminant releases, (2) obtain new analytical data to determine the nature of the contaminants released and verify that contaminants are present at levels of concern, (3) tentatively delineate the approximate areas affected, and (4) recommend further action at the site. This report summarizes the results of the PA investigation and recommends further action to address environmental contamination detected at AOC1.

### **1.1 SITE LOCATION AND DESCRIPTION**

AOC1 is a fenced area located about one quarter mile west of the intersection of Driftwood Drive and Port Chicago Highway. The Navy previously conducted remedial actions at remedial action subsites (RASS) 1, 2, 3, and 4 in the litigation area. AOC1 is located near the litigation area sites, north of Port Chicago Highway and immediately west of RASS4 (Figure 1). AOC1 (the site) is bounded by Port Chicago Highway to the south, RASS 4 to the east, and railroad tracks and an easement to the north. The area immediately west of the site is undeveloped. The site boundaries are delineated by a perimeter fence which forms a trapezoid; the west, south, and east boundaries are aligned with the cardinal directions, and the north boundary is inclined to the southeast. The site covers approximately 17.4 acres and measures roughly 1,000 feet from east to west and 700 to 1,000 feet from north to south.

The site itself is currently undeveloped, except for remnant concrete pavement from prior uses of the site and a fresh water pump station that CCWD installed in 1998. The pump station is near the southern boundary of the site, about 80 feet north of Port Chicago Highway. The site is mostly vegetated with thick grasses, although the central portion of the site and parts of the fenceline contain mature stands of

coyote brush. A few limited areas of bare soil are present, indicating potential disposal of industrial materials.

The site slopes gently to the north-northeast, from a topographic high of about 55 feet above mean sea level (msl) at the southwest corner of the site to a low of about 20 feet above msl at the northeast corner. The nearest surface water body is Suisun Bay, which is about 2,000 feet north of the north boundary of the site.

## **1.2 SITE GEOLOGIC AND HYDROLOGIC SETTING**

Surface geology of the site has been mapped by Dibblee (1980) as older Quaternary alluvium from the Los Medanos Hills, which is underlain Bay Mud. Boring logs from a geotechnical investigation conducted at the Allied Chemical Bay Point Works purge pond immediately west of AOC1 show that stiff to very stiff silty and sandy clay extends from the surface to 28 feet below grade, the maximum depth explored at that location (Harding-Lawson and Associates 1977). A well installed by Allied Chemical to the south of the site consisted of unconsolidated sandy clay to a depth of 152 feet below grade, indicating that depth to bedrock at AOC1 probably exceeds 152 feet.

Groundwater at AOC1 occurs in a shallow, unconfined water-bearing zone within the Bay Mud. Depth to water varies because of topographic variation across the site. Groundwater was encountered 23.5 feet below grade at the Bay Point Works purge pond near the northwest corner of the site (Harding-Lawson Associates 1977). At RASS 4, groundwater occurs at depths of 18 to 32 feet below grade. Elevations of the potentiometric surface range from approximately mean sea level at the Bay Point Works pond to as high as 6 feet above msl at RASS 4.

Groundwater flow in RASS 4 is highly variable. Groundwater flow in this area is generally directed towards the southwest or southeast, but flow is often directed to the northeast, and occasionally to the north or west, with no apparent seasonal cause for variations in flow direction.

## **2.0 SITE HISTORY**

This section describes the site history from the 1930s to the present. The site history was determined by reviewing aerial photographs, property transfer records, Navy records, and records of the U.S. Environmental Protection Agency (EPA), the San Francisco Regional Water Quality Control Board (RWQCB), and the Department of Toxic Substance Control (DTSC). This section discusses the site history chronologically, and presents results of the title search and a brief summary of the principal manufacturing process that occurred at the site.

### **2.1 CHRONOLOGICAL HISTORY OF SITE**

The chronological development of the site is discussed below. Sources for the events noted below are identified as appropriate. The site history is schematically summarized as a timeline in Figure 2. Aerial photographs illustrating development of the site and major site features are presented as Figures 3 through 11. The site is in the center of the photographs, and all photographs are scaled and aligned to show the same area.

- Pre-1955:** The site is undeveloped, except for a few unpaved roadways near the housing development northwest of the site (Figure 3). Before 1955, much of the site was apparently used for agriculture or grazing.
- 1955:** Western States Chemical Co., a consortium of chemical companies, opens a plant to manufacture nitrogen-phosphorus-potassium (N-P-K) fertilizer. The plant is operated by Collier Carbon and Chemical Company (a subsidiary of Union Oil Company of California) (CCCC). The facility operated from 1955 to 1976 and manufactured N-P-K fertilizer from phosphoric acid, sulfuric acid, and ammonia. The N-P-K fertilizer manufacturing process is discussed in more detail in Section 2.3.
- 1966:** The facility has added additional buildings and expanded eastward. An elevated conveyor belt is present to convey gypsum waste to the northeast quadrant of the site. A spent acid pond is present in the northwest boundary of the site (Figures 5, 6, and 7).
- 1973:** RWQCB inspects the site and notes acidic waste discharges which have lowered pH and damaged vegetation in the marsh immediately east of RASS 4. RWQCB orders CCCC to cease discharges and clean up affected areas of the marsh and contaminated soils (RWQCB Order No. 73-12). The site inspection was apparently motivated by observations during a flight over the area by the California Department of Fish and Game (See Section 3.1).

- 1974:** The facility is operating at full capacity. Large piles of gypsum cover several acres in the northeast corner of the site (Figure 8). The area currently occupied by the pump station is an unpaved vehicle turnaround area shown on Figure 8. RWQCB issues a National Pollutant Discharge Elimination System (NPDES) permit, prohibiting discharge of wastewater and requiring impoundments for storm water runoff (RWQCB Order No. 74-53) (See Section 3.1).
- 1976:** Union Chemical Division of Union Oil Company of California (Union Chemical), formerly CCCC, ceases operations at the facility (Buddenburg 1979). Union Chemical begins treating storm water runoff to neutral pH and discharging it to a drainage ditch north of the site. CCCC previously used the storm water runoff in its manufacturing process.
- 1979:** The previous NPDES permit expires. RWQCB reissues the permit for storm water runoff (RWQCB Order No. 79-63). Union Chemical puts the property up for sale, and the Navy considers acquiring property to protect explosives handling capability of Pier 4, which is rated for explosives requiring an arc of 9,085 feet (Navy 1979). The site enters the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) (Bechtel Environmental, Inc. [Bechtel] 1994).
- 1980:** The California Department of Health Services (DHS) inspects the site under the Abandoned Site Project, collects several soil samples, and notes elevated concentrations of lead, selenium, and tellurium (DHS 1980). DHS turns the case over to RWQCB (See Section 3.2).
- 1982:** As a condition of sale to the Navy, Union Chemical agrees to clean up and restore the site. Union Chemical removes gypsum from the site, fills ponds with on-site soil, and scarifies and seeds the entire site (Royce 1983).
- 1983:** Based on cleanup of site and pH testing of runoff, RWQCB rescinds storm water runoff NPDES permit requirements (RWQCB Order No. 83-28). U.S. Navy acquires the property.
- 1984:** Ecology and Environment, Inc. (E&E) conducts a site inspection under the U.S. EPA field investigation team program (See Section 3.3).
- 1985:** Concord Naval Weapons Station contracts Kennedy/Jenks Engineers to collect 26 samples of various waste types present in the buildings and structures at the site in preparation for demolition and debris disposal. Various inorganics were detected (See Section 3.4).
- 1986:** Plant buildings and structures demolished and removed from site (Figure 10).

- 1992: CCWD conducts a geologic hazard assessment of a proposed pipeline route along Port Chicago Highway (See Section 3.5). Soil borings are drilled and sampled east and west of AOC1 (Herzog and Associates 1992).
- 1994: EPA conducts a site prioritization investigation under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) to determine if the site requires ranking by EPA's hazard ranking system (Bechtel 1994). EPA determines that no further action is necessary (See Section 3.3).
- 1997: GeoSyntek Consultants conducts a geotechnical evaluation of the pump station site (GeoSyntek 1997) (See Section 3.6). Elevated concentrations of lead, mercury, and selenium are detected in exploratory borings (see Table 1).
- 1998: CCWD installs the pump station. Elevated concentrations of lead, mercury, and selenium are detected in samples of soils excavated from utilities trenches (Kleinfelder, Inc. 1998) (See Section 3.7).

## 2.2 PROPERTY OWNERSHIP HISTORY

TiEMI conducted a property title search at the Contra Costa County Courthouse in Martinez, California to identify previous owners of the property. This search involved examining electronic records available through the Office of the County Assessor and historical documentation at the Office of the County Recorder. Additionally, aerial photographs of the site and regulatory agency files were reviewed to evaluate historical use of the site.

The ownership of the site has been complicated by a series of mergers and acquisitions and purchase of small adjacent plots. Information in the DTSC files indicates that Allied Chemical owned the property from 1897 to 1955, when the fertilizer plant was built. The plant was originally operated by Western States Chemical Co., a consortium of companies that apparently included Allied Chemical and CCCC, a subsidiary of Union Oil Company of California [Union Oil]). Union Oil assumed full ownership of the plant in 1966 and sold the property to the Navy on April 21, 1983.

County records also note that CCCC purchased a small property (0.75 acre) from Joe and Wilda Sobotka on December 1, 1967, and an 8.86-acre property from Allied Chemical on March 5, 1969. Because Union Oil owned the entire property sold to the Navy, it appears that the CCCC properties were adjoining tracts.

Aerial photographs show that the property was undeveloped in 1952 (see Figure 3), and regulatory agency records indicate that the fertilizer factory is the only industrial activity that occurred at the site. For these reasons, property ownership history was not researched further.

### **2.3 N-P-K FERTILIZER MANUFACTURING PROCESS**

The primary industrial process that took place at the site was manufacturing nitrogen, phosphorus, and potassium (N-P-K) fertilizer. The plant created N-P-K fertilizer by digesting phosphate rock with sulfuric acid. Potassium salts and anhydrous ammonia were then added to the digested phosphate rock to produce an N-P-K slurry. The slurry was dried and pelletized to create commercial fertilizer (E&E 1984). The CCCC plant produced 40 grades of N-P-K fertilizer. Principal byproducts of the process include waste gypsum ( $\text{CaSO}_4$ ) and impurities in the phosphate rock used as a raw material. Common phosphate rock impurities include cadmium and other heavy metals (Hodge and Popovici 1994). Lead, mercury, and selenium are not known to be commonly associated with phosphate rocks.

### **3.0 PREVIOUS INVESTIGATIONS**

As noted in Section 2.0, the site has been the subject of a number of investigations by RWQCB, EPA, DHS, and CCWD. These investigations are discussed below.

#### **3.1 REGIONAL WATER QUALITY CONTROL BOARD INVESTIGATIONS**

The site first came under regulatory review in 1973, when damaged vegetation in the wetland east of the site was noted from the air during a surveillance flight by RWQCB, the California Department of Fish and Game, and the U.S. Coast Guard (RWQCB Order 73-12). A follow-up inspection verified that marsh vegetation was heavily damaged due to acidic runoff from a ditch running along the northern boundary of the property. In response, RWQCB fined CCCC and issued a cleanup and abatement order to prevent site surface water from discharging to the marsh and to remove on-site contaminated soils and raw materials. CCCC proposed to address the problem by installing containment ponds to impound surface water runoff.

In July 1974, RWQCB issued an NPDES permit, prohibiting process water discharges and requiring the facility to install storm water containment ponds. In November 1974, RWQCB inspected the site and verified that the storm water containment ponds had been installed, but locations of the containment ponds are not indicated in RWQCB's documents. An undated hand-drawn figure in DTSC files shows an impoundment in the north-central portion of the site.

The facility ceased operations in 1976, but continued to maintain the storm water containment ponds. In 1979, the NPDES permit expired, and RWQCB reissued the permit. In 1983, Union Chemical sold the property to the U.S. Navy. As a condition of the sale, the facility removed wastes from the site and demonstrated that surface water runoff was within the range between 6.5 and 8.5 pH units (Royce 1983). RWQCB verified that wastes had been removed and the containment ponds filled with soil and rescinded the previous order (RWQCB Order No. 83-28).

RWQCB's regulatory concerns at the site appear to have been limited to the pH of surface water runoff from the site, which they addressed through the NPDES permit and various administrative orders.

Metals contamination in soils or water was not addressed by RWQCB. Copies of RWQCB orders for the site are included as Appendix A.

### **3.2 CALIFORNIA DEPARTMENT OF HEALTH SERVICES INVESTIGATION**

In August 1980, DHS staff inspected the site under its abandoned sites program. Information regarding this investigation is limited, because DTSC files do not contain a report. The limited information available indicates that three soil samples were collected and analyzed for a standard list of metals. The sample locations are unknown, but a handwritten annotation indicates that sample 051 was a composite sample from the gypsum pile area. Elevated concentrations of lead (4,380 milligrams per kilogram [mg/kg]) and selenium (7,030 mg/kg) were detected, and the samples exhibited low pH (2.1 to 3.1 pH units). In addition, several unusual metals which do not appear on typical target analyte lists, such as ruthenium, tellurium, and yttrium, were also reported (see Table 1). These metals were detected but do not appear to have been specifically targeted for analysis. Tellurium was detected at elevated concentrations in (552 to 1,550 mg/kg) in two of the three samples. In October 1980, DHS turned the case over to RWQCB (DHS 1980).

DHS appears to have reanalyzed two of the samples (052A and 053A) in April 1981 because sample collection dates for samples 052, 052A, 053, and 053A are listed as August 14, 1980. The reanalyzed samples essentially confirmed previous results, showing elevated concentrations of lead, selenium, and tellurium, although selenium concentrations were lower in the reanalyzed samples.

In summary, DHS inspected the site in 1980; collected several soil samples with elevated concentrations of lead, selenium, and tellurium; confirmed the presence of these metals by reanalyzing the samples; and forwarded the matter to RWQCB. DHS analytical reports and a letter to the Navy indicating that RWQCB would pursue the matter are included as Appendix B.

### **3.3 U.S. ENVIRONMENTAL PROTECTION AGENCY INVESTIGATIONS**

The site was identified as a potential hazardous waste and assigned CERCLIS EPA identification number CAD 980736235 on November 1, 1979. In 1984, E&E conducted a site inspection under the field investigation team (FIT) program. E&E personnel interviewed surrounding property owners and regulatory authorities, including DHS, RWQCB, and the Contra Costa County Health Department, and

researched property ownership history, plant operations, and presence of local wells. E&E noted that DHS detected elevated metals concentrations in soils, but did not recommend further action to address the metals because (1) the site soils have a high clay content and cation exchange capacity which would retard metals migration, and (2) no drinking water supply wells are downgradient from the site. E&E recommended capping and sealing an on-site drinking water supply well, but did not note the location of the well. E&E also recommended sampling surface water runoff for metals to ensure that contaminated soils do not impact local surface water bodies.

In 1984, Bechtel conducted a site prioritization investigation under the CERCLA program to determine if the site required ranking using EPA's hazard ranking system (Bechtel 1994). The report noted that no surface water intakes were located within 15 miles of the site, no schools or day care centers were within 200 feet, and the site is located in a heavily industrialized area. EPA determined that further site assessment was not required under CERCLA.

### **3.4 KENNEDY/JENKS ENGINEERS WASTE SAMPLING**

In preparation for demolishing buildings and structures at the site, Concord Naval Weapons Station contracted Kennedy/Jenks Engineers (Kennedy/Jenks) in 1985 to collect samples of various wastes present in the buildings, including dust from the bag house, tank and hopper residues, pellets from shop floor, and other miscellaneous wastes. Actual sample locations are uncertain. The analyses showed that lead and chromium were present at elevated concentrations (up to 1,300 mg/kg) in facility wastes from a few locations, and that selenium and mercury were present at lower concentrations. The results do not indicate an obvious source for the lead, selenium, and mercury detected in earlier investigations (Kennedy/Jenks 1985). Analytical results from these samples are presented in Appendix C.

### **3.5 CONTRA COSTA WATER DISTRICT INVESTIGATION**

In 1992, CCWD conducted an investigation of a proposed water supply pipeline route along Port Chicago Highway to assess potential environmental and geotechnical problems. Herzog and Associates (Herzog) conducted the investigation, which included drilling 46 soil borings and testing for environmental contaminants in areas where regulatory records indicated potential environmental concerns. Two of these borings were located across Port Chicago Highway near AOC1 (Borings B-29 and B-30, shown on Figure 12). Samples from these borings were tested for total petroleum

hydrocarbons (TPH) because the proposed pipeline alignment was parallel to existing petroleum pipelines. In addition, samples from boring B-30 were tested for metals because the boring is located near RASS 4, a site of known metals contamination. Apparently Herzog was not aware of the DHS analytical results, because samples from boring B-29, which is directly across Port Chicago Highway from AOC 1, were not tested for metals.

Analytical results for the Herzog samples are presented in Table 1 and included in full in Appendix D. Lead and mercury were detected at moderate concentrations (31 and 0.57 mg/kg, respectively), and TPH was not detected (Herzog 1992).

### **3.6 GEOSYNTEK INVESTIGATION**

In 1996, CCWD contracted with Geosyntek Consultants (Geosyntek) to conduct a geotechnical investigation of the proposed pump station location. CCWD located the pump station in AOC1 rather than the originally proposed location south of Port Chicago Highway, because they were unable to obtain a suitable easement from the owner of that property. Geosyntek drilled two 8-foot geotechnical borings at the site (GS-1 and GS-2, shown on Figure 12) and tested soil samples from each boring for contamination because previous reports by Herzog indicated potential contaminants in the vicinity. Two samples from each boring were tested for a full suite of potential contaminants, including metals, volatile organic compounds (VOC), semivolatile organic compounds (SVOC), pesticides and polychlorinated biphenyls (PCB), and TPH (Geosyntek 1996). Analytical results are presented in Table 1 and included in full in Appendix E.

Analytical results for the Geosyntek samples (Table 1) reinforce results obtained 16 years earlier by DHS: soils at some locations in AOC1 are contaminated by relatively high concentrations of lead (14,000 mg/kg) and selenium (2,600 mg/kg). In addition, mercury was detected at concentrations up to 180 mg/kg in three of the four samples tested. Mercury was tested for, but not detected in the DHS samples. SVOCs, TPH, and a PCB were detected in the easternmost boring, in the area now covered by the pump station.

### **3.7 SOIL STOCKPILE SAMPLING BY KLEINFELDER, INC.**

During installation of the CCWD pump station, general contractor Miller-Thompson dug two trenches from the pump station to the pipeline running along the south side of Port Chicago Highway. The contractor noted that a discrete 6-inch-thick deposit of black cinder-like material was encountered throughout the trenched area at a depth of 6 inches below the surface. This cinder layer may represent a gravel roadbed or unconsolidated paving for an equipment lay-down area. Kleinfelder collected two four-point composite samples of the soils excavated from the trenches to determine appropriate disposal of the excavated soils. Analytical results from these soil stockpile samples are presented in Table 1. The results show that the excavated soils were contaminated with lead (8,000 mg/kg), selenium (814 mg/kg), mercury (203 mg/kg), and unidentified extractable hydrocarbons (266 mg/kg). Because the soils exceeded the Total Threshold Limit Concentration (TTLC) for lead, mercury, and selenium, Kleinfelder recommended disposing of the soils as hazardous waste (Kleinfelder 1998). Analytical results from the soil stockpile testing are presented in Table 1 and are included in full in Appendix F.

### **3.8 SUMMARY OF PREVIOUS INVESTIGATIONS**

Several regulatory agencies, CCWD, and the Navy have studied AOC1 on a number of occasions in the past 26 years. RWQCB's regulatory concerns at the site appear to have been limited to the pH of surface water runoff from the site, which they addressed through the NPDES permit and various administrative orders. DHS detected elevated concentrations of lead, selenium, and tellurium in soils and forwarded the matter to RWQCB. EPA performed several site inspections and determined that the site did not require further action under CERCLA.

CCWD sampled soils in preparation for installing the pump station and detected elevated concentrations of lead, selenium, and mercury. Kleinfelder later confirmed the elevated concentrations by sampling soils from the trenches leading from the utility corridor to the pump station. The affected soils appear to have been associated with a 6-inch-thick black cinder layer.

In summary, elevated concentrations of lead and selenium were detected in soil samples collected by DHS, Geosyntek, and Kleinfelder. Tellurium was detected by DHS, but subsequent samples were not

tested for tellurium. Mercury was detected at high concentrations in the Geosyntek and Kleinfelder samples but was not detected in the DHS samples.

#### **4.0 PRELIMINARY ASSESSMENT INVESTIGATION**

In response to detecting contamination in soils when the CCWD pump station was installed, the Navy conducted this PA to determine if the site warrants further action under the IR program. The PA consisted of reviewing aerial photographs and reports, as discussed in Sections 2 and 3 above, and collecting additional samples (1) to verify that contaminants are present at levels of concern, (2) to identify a potential source or sources of the contaminants, and (3) to tentatively evaluate the lateral extent of contamination.

Based on review of aerial photographs, available agency files, and field observations, four potential contaminant sources were identified at the site: cinder roadbed material, a former spent acid pond, former waste gypsum piles, and discrete deposits of ash-like materials. These potential contaminant sources are discussed below.

**Cinder roadbed:** The cinder roadbed material is the primary contaminated material of concern at the site. The cinder roadbed has been reported to be a uniform 6-inch-thick layer of unconsolidated cinder material that was discovered while the CCWD pump house was installed. Aerial photographs indicate that the pump station area appears to have been an unpaved vehicle turnaround area in the early 1960s, and the cinder material may be unconsolidated paving used in the turnaround area. Earlier aerial photographs show that a similar unpaved roadway extended along the main road into the facility before that road was paved in the late 1960s. Both the Geosyntek and Kleinfelder samples appear to have included the cinder roadbed material.

**Former spent acid pond:** Aerial photographs and a review of site records revealed that a spent acid pond was present in the northwestern corner of the site. The pond was apparently used to accumulate and treat waste acid generated by the fertilizer manufacturing process. The pond was filled with soil in 1982.

**Former waste gypsum piles:** Aerial photographs show large piles of waste gypsum that was produced as a by-product of the N-P-K fertilizer manufacturing process. These waste gypsum piles were used for amending soil in the Central Valley of California and were of concern to the RWQCB due to the potential for low-pH runoff from the site. In 1974, the gypsum piles occupied about 4 acres in the

northeastern quarter of the site. Because of the large volume and lateral extent of the gypsum piles, the gypsum pile area was investigated further in the PA.

**Discrete deposits of ash-like materials:** While attempting to delineate the lateral extent of the cinder roadbed material during the field investigation, several deposits of ash-like materials were discovered in the area north of the pump station. Although these areas were not targeted for investigation in the work plan, they appear to be deposits of some sort of industrial waste. Samples were collected in order to characterize the material and assess potential contamination.

Soil samples were collected from each of these potential sources during the PA. Field sampling techniques and analytical results are discussed in the following sections.

#### 4.1 FIELD METHODS

Based on previous uses of the site and site features noted in aerial photographs, eight locations were selected for sampling. The proposed sampling strategy and rationale was discussed at an remedial project managers (RPM) meeting on January 5, 1999 to obtain regulatory agency concurrence prior to initiating field work. Sample AOC7 was incorrectly located in the field, and a ninth sampling location (AOC9) was subsequently added to collect a sample from the originally planned location. Sample locations are presented in Figure 13, and the rationale for each location is presented below:

Sample Location	Rationale
AOC1, AOC2, AOC3	Verify contaminant levels observed from trench soil disposal samples and assess lateral and vertical extent of cinder roadbed material in the vehicle turnaround area
AOC4	Determine if cinder roadbed material was used as roadbed in other unpaved roadways at facility; determine if material exhibits high concentrations of metals or other contaminants
AOC5, AOC6	Determine if cinder roadbed material underlies formerly paved areas; determine if material exhibits high concentrations of metals or other contaminants
AOC7, AOC9	Determine if contamination is present in area of former spent acid pond
AOC8	Determine if contamination is associated with former waste gypsum piles

**Techniques used to assess lateral extent of wastes:** Before collecting soil samples, several efforts were made to assess the lateral extent of the wastes present at the site and to select appropriate sample locations. The primary concern at the site was thought to be unconsolidated cinders, which appear to have been used as paving in the vehicle turnaround area (see Figure 8, 1974 aerial photograph). The cinder material was reportedly found throughout the length of the utility trenches leading from the pump station to Port Chicago Highway. The extent of this material was investigated by drilling seven exploratory borings using a stainless-steel hand auger. The pump station sits on a several-foot-high mound made of imported fill, which gradually slopes to the original ground surface, and the borings were advanced in areas where the imported fill was thought to be thin or absent.

The hand-auger borings were advanced to refusal (generally 2 to 4 feet below grade) in each of the seven boring locations shown on Figure 13, and the cinder material was encountered in only one boring (location AOC1). Because the cinder material was described by the pump station contractor as present in a uniform layer 6 inches below grade but was encountered in only one boring, it is unlikely that the cinder material extends throughout the vehicle turnaround area. However, it is conceivable that the cinder material may be present but was not encountered at the other boring locations because the pump station mound buried the material at depths beyond the range of the hand auger.

In addition to the exploratory borings described above, 52 shallow test pits were excavated to evaluate the lateral extent of several deposits of ash-like material that are present at scattered locations on the site. The ash-like material is light colored and contains no organic material, and is easily distinguished from site soils. The survey was conducted by sinking a spade into the ground at a number of locations and visually examining a shovelful of soil to determine the lateral extent of the ash. Test pit locations where soils were examined are indicated as red and blue dots on Figure 13. The test pits delineated three main areas where ash-like material is present. Samples locations AOC3 and AOC4 are within two of these areas.

Coordinates of the exploratory borings, shallow test pits, and other site features were mapped using a global positioning system instrument. Coordinates were differentially corrected during post-collection processing.

**Techniques used to assess vertical extent of wastes:** Shallow samples were collected at seven of the nine sampling locations to assess whether near surface materials were contaminated. In addition, samples were collected immediately beneath and approximately 2 feet beneath the shallow waste materials at locations AOC1, AOC3, AOC4, and AOC6, to determine if leaching from surficial materials has affected underlying soils. At locations AOC7 and AOC9, only a deep sample was collected to evaluate whether wastes are present in the buried spent acid pond. The spent acid pond has been filled with soil, and the upper intervals of the fill soil were not sampled.

Samples collected at each location are summarized below:

Location	Shallow Sample	Intermediate Sample	Deep Sample
AOC1	✓	✓	✓
AOC2	✓		
AOC3	✓	✓	✓
AOC4	✓	✓	✓
AOC5	✓		
AOC6	✓	✓	✓
AOC7			✓
AOC8	✓		
AOC9			✓

**Soil sampling technique:** On February 10 and 12, 1999, soil samples were collected using a stainless-steel hand auger. An additional sample (AOC9) was collected on March 5, 1999, because the sample originally slated from the spent acid pond (AOC7) was incorrectly located. Samples were collected directly from the auger bucket into 4-ounce glass sample jars immediately after the soil was brought to the surface, and VOC samples were tightly packed with a stainless-steel spatula leaving as little headspace as possible. Sample handling, numbering, and chain-of-custody procedures were in accordance with the litigation area quality assurance project plan (QAPP) (TtEMI 1997).

The hand auger and spatula were decontaminated before sampling and between borings by scrubbing with trisodium phosphate solution, rinsing with potable water, and rinsing again with deionized water, in accordance with the decontamination protocols specified in the QAPP (TtEMI 1997).

**Analytical parameters:** All samples were analyzed for metals and SVOCs, because these analytes were detected previously at the site. In addition, samples from locations AOC1, AOC3, AOC4, and AOC7 were analyzed for a full suite of analytes, including metals, VOCs, SVOCs, pesticides, PCBs, and herbicides, because the cinder roadbed material, ash-like material, and spent acid pond fill soil were not previously fully characterized. Samples were analyzed in accordance with the QAPP (TtEMI 1997).

#### **4.2 ANALYTICAL RESULTS**

Analytical results for samples collected during this investigation are presented in Table 2, and are included in full in Appendix G. Background concentrations for inland area soils and EPA Region IX industrial preliminary remediation goals (PRG) are also included in the table for reference. The background concentrations listed in the table were derived for Concord inland area sites 17 and 24A (PRC Environmental Management, Inc. 1996), which are thought to be similar to soils at AOC1 because they are alluvial material derived from the Los Medanos Hills. PRGs for industrial soils (EPA 1998) are also listed in the table. If both carcinogenic and noncarcinogenic PRGs are available for a particular metal, the lower of the two numbers is listed in the table. Analytical results for samples collected during the PA have been archived in the existing Concord database and geographic information system maintained by TtEMI.

Data quality was assessed by collecting appropriate quality assurance and quality control (QA/QC) samples and by subjecting the analytical data to full data validation. In addition, the validated data was reviewed by a qualified chemist to ensure that proper analytical methods were followed and that the data validation was conducted in accordance with EPA data validation protocols and guidelines. Overall, the data quality is acceptable, and the data is valid, defensible, and suitable for guiding regulatory decisions about the site. A detailed review of the data validation is included as Appendix H. Salient points are summarized below:

- Matrix spike recoveries for chromium, copper, nickel, and selenium exceeded the QC limit of 125 percent, suggesting that results for these analytes may be biased high. For selenium, the

matrix spike recovery was 138 percent, indicating that only a slight bias affects selenium results.

Because selenium was detected at relatively high concentrations at the site, the slight high bias indicated by the matrix spike sample should not affect the usability of this data or regulatory decisions based on the data, unless the regulatory action level is numerically close to the reported concentrations.

- Acetone was reported at relatively high concentrations in several samples, including surface soil samples. Because acetone is a common laboratory contaminant, the reported acetone concentrations do not appear to represent a contamination problem.

The results of the PA sampling reinforce analytical results from previous investigations: soils in portions of the site are contaminated by elevated concentrations of lead, mercury, and selenium. Additionally, concentrations of a number of metals, including arsenic, lead, copper, vanadium, zinc, and others, exceeded background concentrations, and concentrations of arsenic and lead exceeded both background concentrations and industrial PRGs.

The presence of several types of metals-contaminated industrial wastes provide ample evidence of releases at the site (see Table 2). The cinder roadbed material in the vehicle turnaround area is contaminated with lead, mercury, and selenium (sample location AOC1). A sample of lithified paving material which may include some cinder material as aggregate is also contaminated with lead, mercury, and selenium (sample location AOC2). Compacted ash-like material collected from the waste gypsum pile area is also contaminated with lead, mercury, and selenium (sample location AOC8). Finally, samples of ash-like material from sample locations AOC3 and AOC4 are contaminated with lead, mercury, and selenium at concentrations above background but below industrial PRGs. Organic compounds were not detected at the site, with the exceptions of low concentrations of toluene in two samples and acetone at several locations; however, acetone appears to be a laboratory contaminant.

In summary, the primary contamination problem at the site appears to be industrial wastes which are contaminated with lead, mercury, selenium, and lower levels of several other metals. The same contaminants occur at elevated concentrations in three distinct industrial wastes: (1) cinder material at AOC1 and AOC2, (2) ash-like material at AOC8, and (3) gypsum at AOC3 and AOC4. These materials are clearly wastes rather than soils. Sources of these wastes are not known.

All three of the industrial wastes are easily distinguished from soil by color, texture, and lithology. The cinder material consists of dark gray to black gravel-sized grains with vitreous flecks and vesicles and is

similar in appearance to bottom ash from coal- or coke-fired boilers. The ash-like material at AOC8 appears superficially similar to the gypsum at AOC3 and AOC4; both materials are white to light gray, tightly packed silt. Some of the ash-like material appears to be gypsum ( $\text{CaSO}_4$ ), a by-product of the fertilizer manufacturing process. Pure gypsum is about 46 percent calcium by weight. Samples of ash-like material at AOC3 and AOC4 appear to be composed predominantly of gypsum, because the samples contain 29 and 31 percent calcium by weight, respectively. The ash-like material at AOC8 is not gypsum, because the material contains only 1.3 percent calcium by weight.

The origins of the three primary metals contained in these distinct wastes is unknown. Samples of waste materials that were on site before building demolition contained moderate concentrations of lead, mercury, and selenium, but concentrations in the waste samples were about one order of magnitude lower than the concentrations detected in this PA investigation. Lead, mercury, and selenium are not known to be closely associated with N-P-K fertilizer manufacturing, although heavy metals are contained in the phosphate rocks used as a raw material in the process (Hodge and Popovici 1994). Coke used as fuel in industrial boilers may be a source for the contaminants. Coke piles have been sources of metal contaminants at RASS 4 and other nearby locations.

## **5.0 RISKS TO HUMAN AND ECOLOGICAL RECEPTORS**

A screening level risk assessment was performed to evaluate potential risks that contaminants at the site pose to human and ecological receptors. The assessment was intended as a screening level evaluation of potential risks; it was not intended to serve as a formal human health risk assessment (HHRA) or ecological risk assessment. For human health risk, the screening level assessment consisted of comparing analytical results obtained during the investigation with EPA Region IX industrial PRGs. For ecological risks, the screening level assessment consisted of applying food-chain modeling techniques used at adjacent RASS 4 to determine risks to specific ecological receptors. Each risk assessment is summarized in the following sections.

### **5.1 SCREENING EVALUATION OF HUMAN HEALTH RISKS**

To assess potential risks to human health associated with future land use at AOC1, a screening level HHRA was performed. The methods used in the screening level HHRA are explained in detail in Appendix I. This section summarizes the methodology and results of the assessment.

The HHRA considered only the analytical results from the current investigation. All analytes that were detected at concentrations above previously defined background concentrations for upland soils were included in the analysis, except the essential human nutrients calcium, magnesium, potassium, and sodium. In accordance with DTSC guidance for screening-level assessments, the maximum detected concentration of each contaminant was used as the exposure point concentration (DTSC 1994).

Human health risks at the site were evaluated using the industrial use scenario, which assumes workers are present at the site 40 hours per week for 25 years. Because access to the site is restricted to Navy and CCWD personnel performing occasional maintenance or surveillance, the industrial use exposure scenario is expected to significantly overestimate health risks to actual human receptors at the site.

Potential carcinogenic risks and noncarcinogenic hazards were calculated based on the ratio of maximum detected contaminant concentrations to Region IX industrial PRGs for soil (EPA 1998). PRGs are health-based concentrations in soil for individual chemicals that correspond to an excess lifetime cancer risk of  $1 \times 10^{-6}$  or a noncarcinogenic hazard quotient of 1. When available, both carcinogenic and

noncarcinogenic PRGs were used for the assessment. Carcinogenic risks associated with exposure to multiple contaminants were assessed by summing risks for each contaminant. Noncarcinogenic risks associated with exposure to multiple contaminants were assessed by summing hazard quotients for each contaminant to derive a cumulative hazard index.

The results of the screening level HIRRA for AOCl are presented in Table 3. For the industrial worker, the carcinogenic risk associated with potential exposure to chemicals of potential concern (COPC) in soil ( $5 \times 10^{-5}$ ) is within EPA's target risk range, or the acceptable range of exposure defined by EPA. The total hazard index is 0.78, indicating no potential for adverse noncarcinogenic health effects at the site.

Because the PRG for lead does not represent a soil concentration corresponding to a hazard quotient of 1, exposure to lead cannot be quantitatively evaluated in the same manner as other chemicals. Instead, the industrial soil PRG for lead was calculated as a concentration of lead in soil that corresponds to a blood-lead concentration in an industrial worker that is not associated with adverse health effects (10 micrograms of lead per deciliter of whole blood [ $\mu\text{g}/\text{dL}$ ]). The PRG for lead is an integrated measure of internal dose that accounts for exposure from site-related and background sources. The EPA Region IX industrial PRG for lead (1,000 mg/kg) corresponds to a blood-lead concentration in workers of less than 10  $\mu\text{g}/\text{dL}$ . (EPA 1994).

The maximum detected concentration of lead detected at the site (11,400 mg/kg) significantly exceeds the industrial PRG for lead (1,000 mg/kg). However, risks associated with exposure to this lead are mitigated by the current actual site use, where workers are present a few hours per month at most. In addition, the lead is associated with a discrete layer of cinders, which is buried by 6 or more inches of soil. If the site is developed for industrial use, the concentrations of lead in soil could result in a blood-lead concentration greater than 10  $\mu\text{g}/\text{dL}$ , and the cinder layer should be removed.

## 5.2 SCREENING EVALUATION OF ECOLOGICAL RISKS

An evaluation of ecological risk at the site was conducted because the area contains habitat, receptors, and potential complete exposure pathways, such as contaminated soil. Because ecological screening criteria have not been established for soil, food-chain modeling was conducted to assess risk to representative receptors in the area using the methodology adopted for the adjacent RASS 4 area. The

methods are explained in detail in the After Remediation (Year 4) Remedial Action Monitoring Report (TtEMI 1999).

In brief, food-chain modeling examines the risk to certain species by comparing an estimated site-specific dose to a toxicity reference value (TRV). The dose of each chemical that a receptor may ingest is derived from a model incorporating life history parameters such as body weight and ingestion rate, and the chemical concentration at the site. This derived dose is then compared to the TRVs which are based on no-effects levels (low TRV) and low-effects levels (high TRV) for each chemical. Risk to each receptor is quantified by dividing the dose by the TRV to derive a hazard quotient (HQ), where a HQ greater than 1 indicates risk. Because site-specific tissue concentration data were not available, the model evaluated the risk only from incidental soil ingestion, and did not account for bioaccumulation in prey tissue; therefore, the risks evaluated using this model are likely to underestimate actual risks.

Five HQs were generated for the site by applying food-chain modeling. The five HQs, listed in descending order of risk, are as follows:

- Significant and immediate risk to an *individual* receptor ( $HQ_1 = \text{low dose/high TRV}$ )
- Significant and immediate risk to a *typical* receptor ( $HQ_5 = \text{typical dose/high TRV}$ )
- Probable risk to an *individual* receptor ( $HQ_3 = \text{high dose/high TRV}$ )
- Potential risk to a *typical* receptor ( $HQ_4 = \text{typical dose/low TRV}$ )
- Potential risk to an *individual* receptor ( $HQ_2 = \text{high dose/low TRV}$ )

In these risk characterizations, risks to *individual* receptors are defined by using life history parameters found in literature such as high or low body weight, while risks to *typical* receptors are defined by averaging life history parameters to generate, for instance, an average body weight.

Terrestrial receptors that were found in the adjacent RASS 4 (the gray fox and northern harrier hawk) were chosen for modeling ecological risk at the site. Life history parameters used for the RASS 4 model were also used for assessing risk at the site. Doses were calculated using the maximum soil concentration found any location at the site. For example, the maximum lead concentration detected during the PA was 11,400 mg/kg at sample location AOC1; therefore, the doses were calculated using 11,400 mg/kg to provide a conservative estimate of risks at the site.

Results of the food-chain modeling are shown in Table 4; a value greater than 1 on the table indicates an ecological risk. The results of the modeling are discussed below:

- For the individual and typical gray fox, the HQ<sub>1</sub> and HQ<sub>5</sub> values for selenium are slightly above 1 (values of 1.3 and 4.8, respectively), indicating that the maximum concentration of selenium at the site poses a significant and immediate risk to both individual and typical gray foxes.
- For the typical gray fox, the HQ<sub>5</sub> value for mercury is slightly above 1 (value of 1.2), indicating that the maximum concentration of mercury at the site lead poses a significant and immediate risk to typical gray foxes.
- For the northern harrier, the HQ<sub>1</sub>, HQ<sub>5</sub>, and HQ<sub>3</sub> values for all metals were less than 1, indicating that the maximum concentrations of lead, mercury, and selenium at the site do not pose a significant and immediate, nor probable, risk to individual or typical northern harriers.
- For the gray fox and northern harrier, the HQ<sub>4</sub> and HQ<sub>2</sub> values for lead, mercury, and selenium were generally greater than 1, indicating that lead, mercury, and selenium pose a potential risk to individual and typical gray foxes and northern harriers.

In summary, the food-chain modeling indicates that the maximum concentrations of mercury and selenium detected at the site pose a significant risk to the gray fox, and the maximum concentration of lead poses a potential risk to the gray fox. The maximum concentrations of lead, mercury, and selenium pose potential risks to the northern harrier. Because site-specific tissue concentration data was not available, the model evaluated the risk only from incidental soil ingestion, and did not account for bioaccumulation in prey tissue; therefore, the risks evaluated using this model are likely to underestimate actual risks.

### **5.3 SUMMARY**

In summary, the screening level human health risk assessment showed that contaminants at the site do not pose a risk to human health under reasonable scenarios for future use. However, the lead concentrations in the cinder layer exceeded the EPA Region IX industrial PRG for lead, indicating that the cinder layer should be removed to mitigate human health risks if the site is ever developed for industrial use. The screening level ecological risk assessment indicated that (1) the maximum concentrations of mercury and selenium detected at the site pose a significant risk to the gray fox and (2)

the maximum concentrations of lead, mercury, and selenium pose a potential risk to the gray fox and northern harrier.

## 6.0 RECOMMENDATIONS

The PA investigation has confirmed earlier analytical results, and determined that lead, selenium, and mercury are present in three distinct waste types at the site: (1) cinder roadbed material across the site, (2) gypsum at AOC3 and AOC4, and (3) ash-like materials at AOC8. The screening level human health and ecological risk assessment has shown that contaminants at the site do not pose a human health risk under reasonable future use scenarios, but that selenium and mercury pose a significant, and probable, risk to the gray fox based on the maximum concentrations of selenium and mercury detected at the site. Accordingly, a response action is appropriate for the site.

**Regulatory Framework for Future Action:** The nature and concentrations of contaminants at the site indicate that contaminants pose a risk to ecological receptors; therefore; a response action is appropriate. Because the contaminated material is easily identifiable and distinct from site soils, a removal action can be easily implemented without further extensive site characterization.

Prior to conducting the removal action, a removal site evaluation (RSE) should be conducted. As part of the RSE, additional data should be collected to further define the nature and extent of contamination, and to determine which of the wastes present at the site should be removed. Depending on the results of the RSE, the Navy will recommend either a time-critical or nontime-critical removal action based on the nature and urgency of the threat. If the removal action is time-critical, the Navy will prepare an action memorandum that includes a summary of the RSE and the proposed action, and allowing public comment. If the removal action is nontime-critical, the Navy will prepare an engineering evaluation and cost assessment (EE/CA) that includes a summary of the RSE, circulate the EE/CA for public comment, and finalize the proposed removal action in an action memorandum. In either case, following preparation of the action memorandum, the Navy will oversee removal and proper disposal of the material and will document the removal in the administrative record.

Recommendations to address specific contamination problems at the site through the RSE and removal action are presented below:

*(Section)*  
**Problem 1:**

Unconsolidated cinder roadbed material in the vicinity of the pump station is contaminated with lead, selenium, and mercury. Previous reports indicated that

the material formed a uniform 6-inch thick layer over the entire area of the pump station utility trenches. This investigation encountered the cinder material at a single location and could not confirm the lateral extent. Samples collected immediately beneath the material indicate that the material does not leach to lower strata to a significant degree.

*Recommendation:*

**Recommendation:** The mercury and selenium contained in the cinder roadbed material poses a risk to ecological receptors. The material should be excavated and removed to reduce this risk. A drilling program should be initiated as part of the RSE to determine the lateral and vertical distribution of the material, and the material should be excavated, removed, and disposed of through a removal action.

**Problem 2:**

Three discrete areas of ash-like material were found in the vicinity of the pump station. Samples collected from the center of two of these areas (AOC3 and AOC4) were contaminated with lead, arsenic, and zinc at moderate concentrations.

**Recommendation:**

Concentrations of metals in these areas do not exceed EPA Region IX industrial PRGs for soils; therefore, these ash deposits do not pose a risk to humans. Ecological risks associated with metals contained in the ash deposits were not evaluated as part of this PA. As part of the RSE, ecological risks associated with the ash deposits should be evaluated using existing data to determine whether they pose a risk to ecological receptors. If the RSE shows that the material poses ecological risks, it should be removed.

**Problem 3:**

A single sample of compacted ash-like material in the gypsum pile area (location AOC8) contained a high concentration of mercury (113 mg/kg). The lateral and vertical distribution of this material is not known.

**Recommendation:**

Additional sampling should be conducted as part of the RSE to confirm the mercury contamination, to evaluate the lateral and vertical extent of the ash-like material, and to determine if mercury leaches from the material to lower soil horizons. The food-chain modeling discussed in Section 5.2 showed that this material poses a significant risk to the gray fox. If the mercury contamination is confirmed during the RSE, the material should be removed.

**Problem 4:**

A spent acid pond was formerly used to treat effluent from the fertilizer plant. The pond was filled with on-site soil, but residual contaminants may be present at depth.

**Recommendation:**

One soil sample was collected from a depth of 5 feet in the pond area (sample location AOC9). Metal concentrations in the sample slightly exceeded background concentrations for arsenic and manganese, but not for other metals. Organic compounds were not detected, and soil exhibited a near-neutral pH of 6.61. Any significant contamination, if present, is buried at depths greater than 5 feet. No further action is recommended to address the former spent acid pond.

**Problem 5:** Several areas of bare soil were noted and delineated during the PA investigation. These areas were not sampled, but the lack of vegetation suggests possible contamination problems.

**Recommendation:** The bare soil areas noted on Figure 13 should be sampled for environmental contaminants and evaluated for human and ecological risks as part of the RSE. If the materials pose a risk to human or ecological receptors, they should be removed.

**Problem 6:** Previous sampling by DHS has shown that site soils exhibit elevated concentrations of tellurium (up to 1,550 mg/kg). Tellurium was not tested for in subsequent samples.

**Recommendation:** The tellurium present at the site may be a by-product of the phosphate rock used as a primary material to manufacture N-P-K fertilizer. Tellurium is not a regulated environmental contaminant and does not have known toxicological effects. Tellurium contamination at the site does not merit further consideration.

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**TABLE 1**  
**ANALYTICAL RESULTS FROM PREVIOUS INVESTIGATIONS**  
**AREA OF CONCERN 1, NWS CONCORD**

Sample <sup>1</sup>	California Department of Health Services <sup>1</sup>					Herzog <sup>2</sup>			GeoSyntek <sup>3</sup>				Kleinfelder <sup>4</sup>	
	Locator	051	052	052A	053	053A	B-29	B-30	B-30	GS-1	GS-1	GS-2	GS-2	Soil Stockpile 1
Depth	Unknown	Unknown	Unknown	Unknown	Unknown	5.0	2.5	5.0	0.4-1.5	4.0-5.0	0.5-1.5	2.5-3.5	N/A	N/A
<b>Metals (mg/kg)</b>														
Antimony	—	—	—	—	—	32	—	—	12	2	—	—	—	—
Arsenic	87	—	—	—	251	—	—	3.7	94	23	2.8	1.3	26.3	—
Boron	—	—	—	49	—	—	—	63	43	76	140	220	94.5	83.3
Beryllium	—	—	—	—	—	—	—	—	0.1	0.3	0.3	0.4	—	—
Bismuth	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Bromine	6	14	13	44	9	—	—	—	—	—	—	—	—	—
Cadmium	24	—	—	—	—	—	—	—	2.8	0.4	0.4	—	—	—
Chromium	83	—	—	18	—	—	—	20	—	12	13	22	21	17.5
Cobalt	—	—	—	—	—	—	—	10	—	2.3	7.1	8.9	9.9	—
Copper	62	31	22	48	7	—	—	15	—	61	16	27	12	24.2
Germanium	6	—	—	—	—	—	—	—	—	—	—	—	—	—
Iron	1,690	3,800	782	1,670	283	—	—	—	—	—	—	—	—	—
Lanthanum	76	—	—	—	—	—	—	—	—	—	—	—	—	—
Lead	49	1,000	2,370	4,120	4,380	—	—	31	—	14,000	13,000	18	6	8,000
Manganese	24	58	57	21	—	—	—	—	—	—	—	—	—	—
Mercury	—	—	—	—	—	—	—	0.57	—	180	43	0.37	—	203
Molybdenum	9	14	—	—	—	—	—	—	—	0.7	—	—	—	—
Nickel	15	16	8	—	—	—	—	24	—	5	18	16	38	21.2
Palladium	—	—	—	—	14	—	—	—	—	—	—	—	—	—
Rubidium	10	33	17	—	—	—	—	—	—	—	—	—	—	—
Ruthenium	—	—	—	—	17	—	—	—	—	—	—	—	—	—
Selenium	9	972	33	7,030	34	—	—	—	—	2,600	770	5	—	814
Silver	—	26	—	89	—	—	1.2	—	—	27	11	0.2	0.1	8.27
Samarium	222	241	142	23	8	—	—	—	—	—	—	—	—	—
Tellurium	—	552	126	1,550	362	—	—	—	—	—	—	—	—	—
Thallium	—	—	—	—	—	—	—	—	—	16	12	4	8	—
Thorium	—	19	—	—	—	—	—	19	—	—	—	—	—	—
Titanium	—	—	—	193	—	—	—	—	—	—	—	—	—	—
Tin	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Vanadium	40	36	—	—	—	—	—	25	—	19	20	31	27	28.4
Yttrium	20	37	39	—	—	—	—	—	—	—	—	—	—	—
Zinc	218	77	55	48	—	—	—	79	—	80	23	87	28	60.8
<b>TPH (mg/kg)</b>														
TPH-diesel	—	—	—	—	—	—	—	—	—	48	—	—	—	—
TPH-gasoline	—	—	—	—	—	—	—	—	—	—	—	—	—	—
TPH-unidentified extractable	—	—	—	—	—	—	—	—	—	—	—	—	—	254
<b>Volatile Organic Compounds (µg/kg)</b>														
none detected	—	—	—	—	—	—	—	—	—	—	—	—	—	—
<b>Semi-Volatile Organic Compounds (µg/kg)</b>														
Bis (2-ethylhexyl) Phthalate	—	—	—	—	—	—	—	—	—	970	—	—	—	—
Phenanthrene	—	—	—	—	—	—	—	—	—	350	—	—	—	—
Phenol	—	—	—	—	—	—	—	—	—	810	670	—	—	—
<b>Pesticides and PCBs (µg/kg)</b>														
4,4'-DDT	—	—	—	—	—	—	—	—	—	50	—	—	—	—
Aroclor 1260	—	—	—	—	—	—	—	—	—	650	—	—	—	—

Notes:

— = not detected  
> = not analyzed

<sup>1</sup> Samples were collected by California Department of Health Services in 1980 (DHS 1980)

<sup>2</sup> Samples were collected by Herzog and Associates in 1992 (Herzog 1992)

<sup>3</sup> Samples were collected by Geosyntek Consultants in 1996 (Geosyntek 1996)

<sup>4</sup> Samples were collected by Kleinfelder, Inc. in 1998 (Kleinfelder 1998)

**TABLE 2**  
**ANALYTICAL RESULTS FOR PRELIMINARY ASSESSMENT INVESTIGATION**  
**AREA OF CONCERN 1, NWS CONCORD**

Sample Location (Depth ft below grade)	AOC 1 (0.0 - 1.0)	AOC 1 (1.0 - 1.5)	AOC 1 (2.0 - 2.5)	AOC 2 (0.25 - 0.5)	AOC 3 (0.0 - 0.5) (1.0 - 1.5)	AOC 3 (3.0 - 3.5)	AOC 4 (0.5 - 1.0)	AOC 4 (1.0 - 1.5)	AOC 4 (2.0 - 2.5)	AOC 4 (0.25 - 0.75) (1.0 - 1.5)	AOC 4 (0.75 - 1.5)	AOC 4 (1.5 - 2.5)	AOC 4 (2.5 - 3.25)	AOC 7 (0.5 - 1.0)	AOC 7 (1.0 - 1.5)	AOC 9 (0.0 - 0.5) (14.5 - 50)	AOC 9 (14.5 - 50)	AOC 10 (0.0 - 0.5) (14.5 - 50)	Background Concentration NA (Other & Spec.)	PRG Value
Soil Type	clayey sand	silty clay	calcareous	calcareous	calcareous gypsum	calcareous gypsum	calcareous gypsum	calcareous gypsum	calcareous gypsum	calcareous gypsum	calcareous gypsum	calcareous gypsum	calcareous gypsum	calcareous gypsum	calcareous gypsum	calcareous gypsum	calcareous gypsum	calcareous gypsum	calcareous gypsum	
Sample Number	SB001	SB002	SB003	SB004	SB005	SB006	SB007	SB008	SB009	SB010	SB011	SB012	SB013	SB014	SB015	SB016	SB017	SB018	SW17	
Aluminum	14,700	13,700	10,900	15,400	349	20,400	29,100	1,160	16,400	33,900	26,900	28,600	15,100	17,500	24,700	22,900	18,300	17.8	20,000	1,900,000
Antimony	21.6	-	-	2.3	2.5	-	3.2	2.4	-	-	-	-	-	-	-	-	-	-	1.2	750
Arsenic	55.3	5.4	4.8	22.4	-	31.6	6.2	118	148	6.7	4	2.8	5.4	5.7	12.1	28.6	12.6	1.5	7.3	6.0
Barium	168	151	117	129	91.7	146	199	13	163	213	151 J	-	152	302	135	206	149	-	210	20,000
Beryllium	--	-	-	-	0.046 J	-	0.34 J	-	-	-	-	-	-	-	-	-	-	-	0.56	3,700
Cadmium	2.7	-	-	1.2	8	8.4	-	3.7	11.3	-	-	-	-	-	3.2	3.7	-	-	0.15	930
Calcium	26,100	2,080	2,250	8,220	268,000	29,200	3,300	313,000	43,600	4,290	12,800	17,900	2,550	16,900	33,900	13,300	31,300	94.9	NA	NA
Chromium	36.3 J	28.1 J	27.5 J	36.9 J	28.4 J	37.9 J	48.1 J	78 J	86.2 J	55.4 J	40 J	37.1 J	34.1 J	27.2 J	77.2 J	46.3 J	39.6	-	56	450
Cobalt	10.4 J	20.6	15.7	9.7 J	-	10.6	10.4 J	-	10.8 J	14.5	38.9	27.6	15.7	12.4	8.3 J	8.9 J	13.2	-	24	29,000
Copper	61.4 J	17.8 J	11 J	38.1 J	-	42.5 J	14 J	-	88.7 J	14.1 J	133 J	156 J	16.6 J	12.5 J	29.9 J	27.4 J	15.1	1.8	64	70,000
Iron	21,400	15,400	14,200	21,200	190	21,900	29,100	603	15,300	32,000	45,000	38,700	19,900	20,400	24,100	20,100	19,400	4.6	NA	560,000
Lead	11,400	39.5	20.8	4,300	114	170	9.4	47.2	29.7	6.4	18.1	19	8	6.7	19	895	9.8	-	18	1,000
Magnesium	4,690	1,930	1,850	4,470	60.7 J	3,430	4,680	43.3 J	98.8 J	5,220	16,100	17,300	2,540	5,700	3,840	2,290	4,850	35.7	NA	NA
Manganese	407 J	896 J	622 J	264 J	-	322 J	493 J	-	407 J	554 J	1,360 J	695 J	712 J	734 J	243 J	200 J	1,000	-	870	45,000
Mercury	54.8	-	--	2.8	--	3.5	-	0.1 J	-	--	1.2	11	--	--	--	13	0.094 J	0.32	0.14	563
Molybdenum	--	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	DL	9,400
Nickel	32.1 J	21.4 J	16.2 J	30.7 J	-	26.3 J	36.3 J	-	18.3 J	56.9 J	31.4 J	28.9 J	28.2 J	45.8 J	21.9 J	27.8 J	44.5	-	86	37,000
Potassium	986 J	799 J	485 J	994 J	139 J	1,520	217 J	929 J	1,920	1,180 J	907 J	711 J	955 J	901 J	1,840	1,640	1,110	70.1	NA	NA
Selenium	876 J	3.3 J	1.2 J	215 J	14.4 J	20.5 J	-	2.6 J	9.3 J	-	0.85 J	-	-	4.2 J	44.7 J	-	-	-	DL	9,400
Silver	10.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	DL	9,400
Sodium	619	--	--	392 J	-	265 J	338 J	-	361 J	-	--	-	-	--	--	-	711 J	-	NA	NA
Thallium	-	--	-	-	-	1.4	-	-	1.2	-	-	-	-	0.58	-	-	-	2.5	DL	130
Vanadium	52.5	43.2	46	52.4	7 J	56	65.5	23.8	86.3	73.3	118	94.8	54.1	46.5	125	62.1	47.1	-	86	13,000
Zinc	106	59.2	18.7	92.6	20.7	194	42.6	51.2	92	51.8	90.1	52.2	38.4	37.1	174	131	56.8	1.4	88	560,000
<b>Volatile Organic Compounds (mg/kg)</b>																				
Acetone	95 J	60 J	240 J	NA	240 J	-	78 J	-	NA	NA	NA	NA	NA	NA	NA	-	NA	-	12	6,00,000
Toluene	-	--	--	NA	-	1	-	5	NA	NA	NA	NA	NA	NA	NA	-	NA	-	-	2,000,000
<b>Semi-volatile Organic Compounds (mg/kg)</b>																				
None detected	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Pesticides/PCBs</b>																				
None detected	-	-	-	NA	-	-	-	-	NA	NA	NA	NA	NA	NA	NA	-	NA	-	-	-
<b>Herbicides</b>																				
None detected	-	-	-	NA	-	-	-	-	NA	NA	NA	NA	NA	NA	-	NA	-	-	-	-
<b>Other Analyses</b>																				
Percent Moisture (%)	9.9	10.8	15	4.4	37.8	14.5	17.4	36.4	20.3	8.9	9.1	6.9	12.1	13.3	22.3	25.8	17.2	-	-	-
pH	6.44	4.15	5.16	5.09	5.51	4.95	4.73	5.36	3.84	6.18	6.23	6.24	5.48	6.38	3.81	4.55	6.61	--	--	--

Notes:

-- = not detected

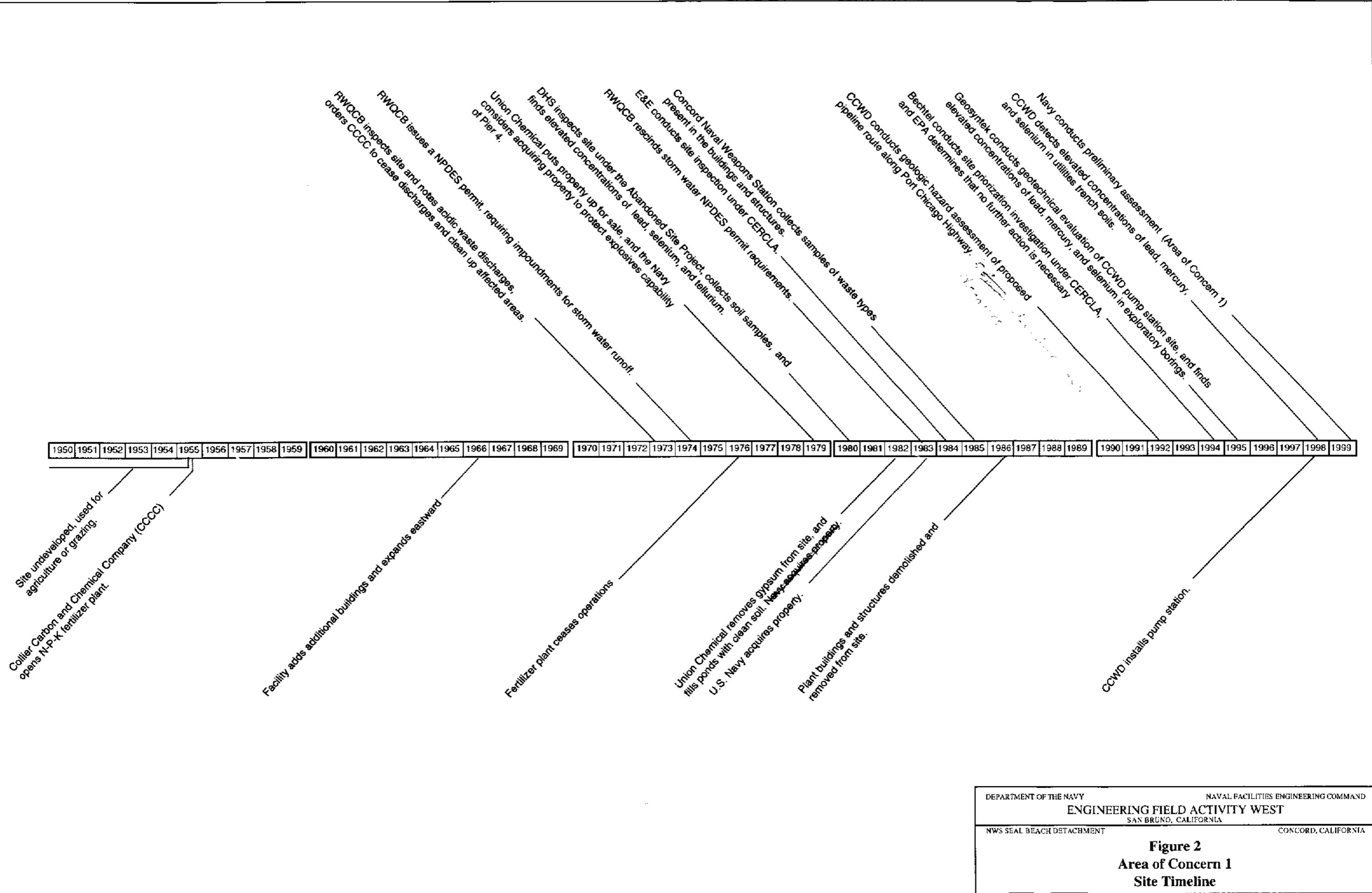
J = estimated concentration

## Figure 1

This detailed station map has been deleted from the Internet-accessible version of this document as per Department of the Navy Internet security regulations.

Investigations/Regulatory Actions

Facility Operations/Physical Changes



DEPARTMENT OF THE NAVY	NAVAL FACILITIES ENGINEERING COMMAND
ENGINEERING FIELD ACTIVITY WEST	
SAN BRUNO, CALIFORNIA	
NWS SEAL BEACH DETACHMENT	CONCORD, CALIFORNIA

Figure 2  
Area of Concern 1  
Site Timeline



DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND ENGINEERING FIELD ACTIVITY WEST SAN BRUNO, CALIFORNIA	Figure 3 1952 Aerial Photograph and Site Features
NWS SEAL BEACH DETACHMENT CONCORD, CALIFORNIA	

NWS SEAL BEACH DETACHMENT

CONCORD, CALIFORNIA

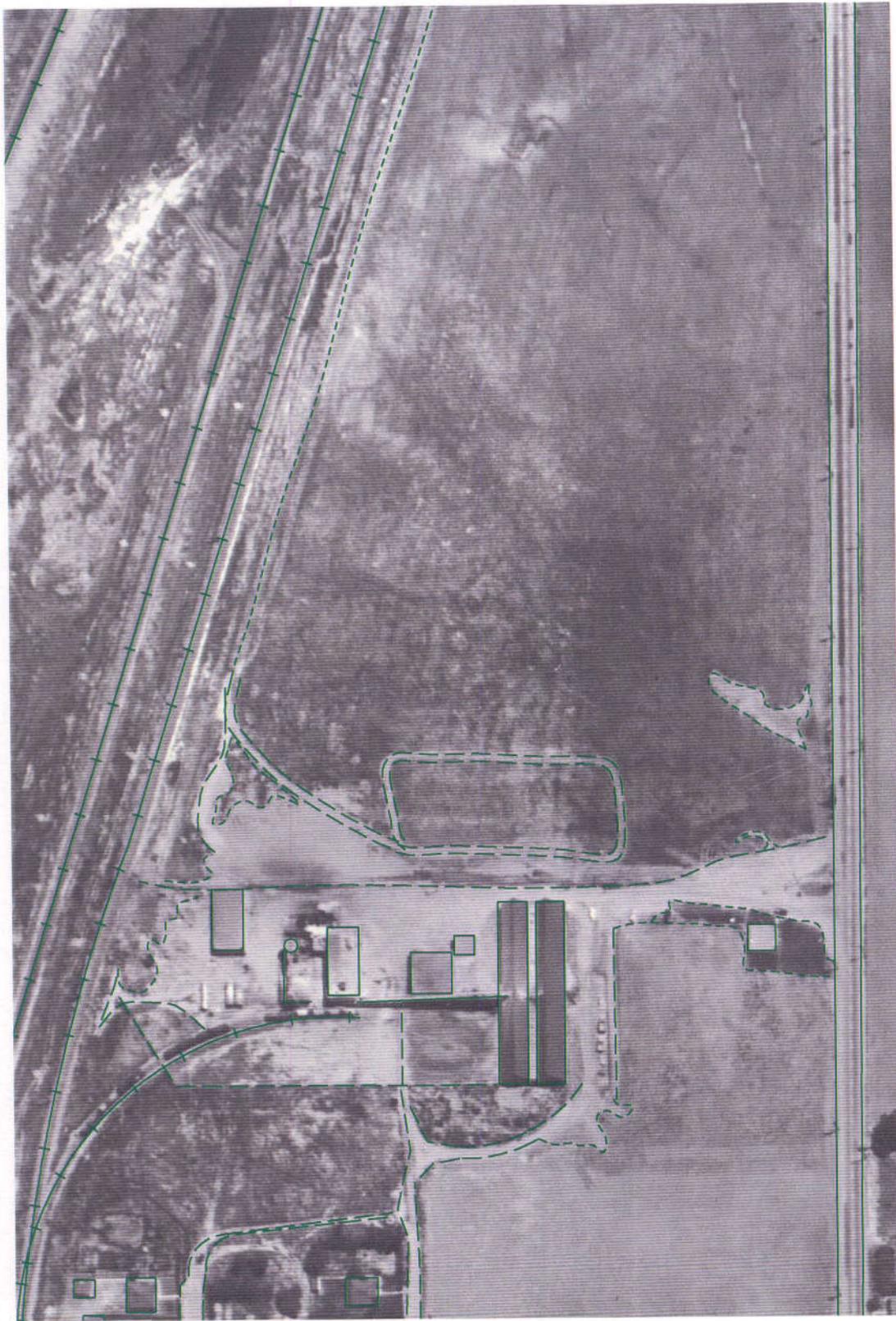
DEPARTMENT OF THE NAVY  
NAVAL FACILITIES ENGINEERING COMMAND

ENGINEERING FIELD ACTIVITY WEST  
SAN BRUNO, CALIFORNIA

Figure 3  
1952 Aerial Photograph  
and Site Features



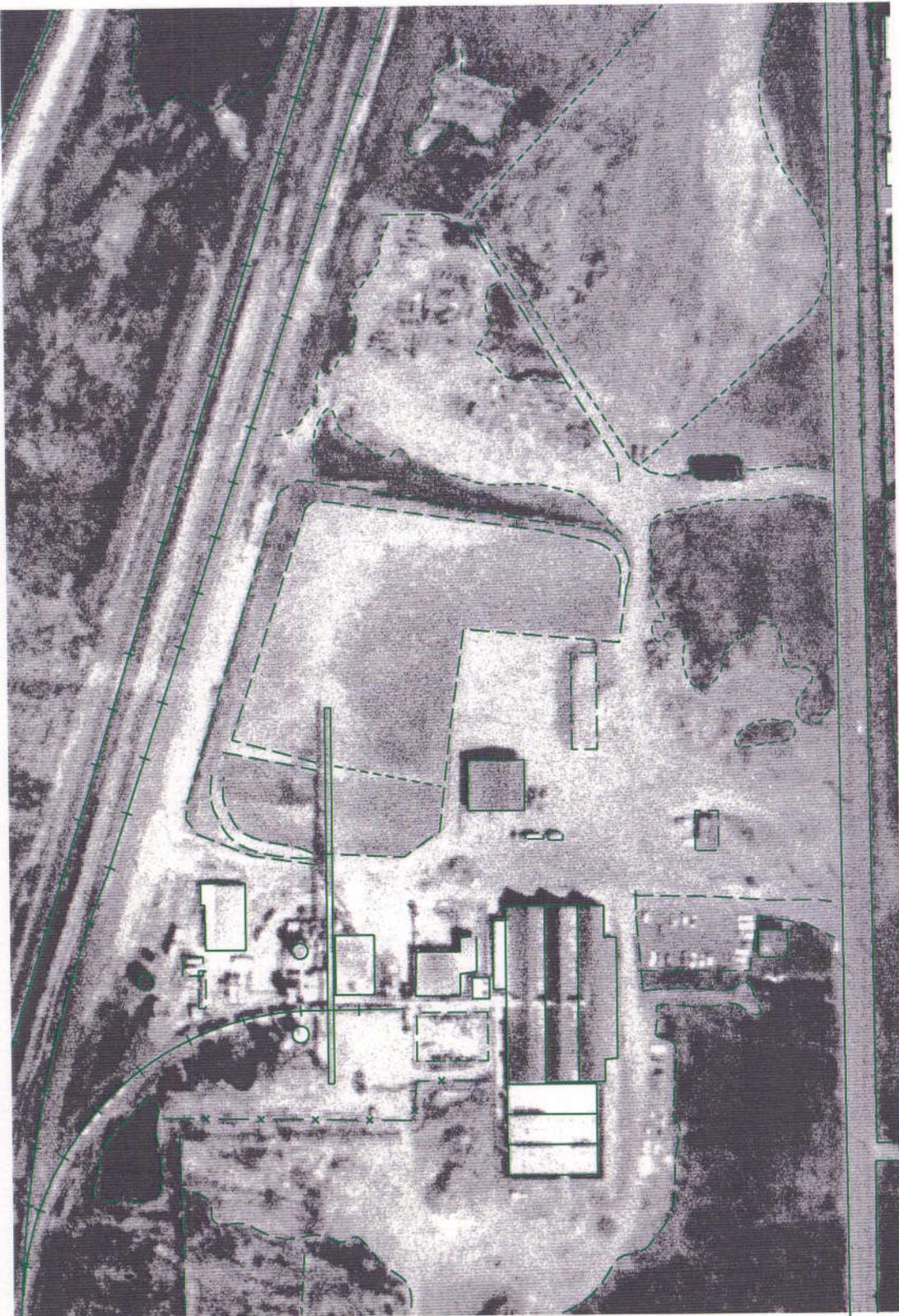
100' 0' 100' 200'  
scale: 1" = 200'



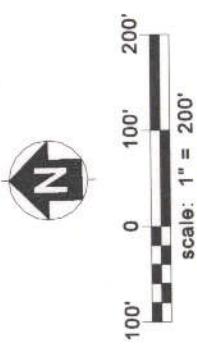
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NAVAL FACILITIES ENGINEERING COMMAND  
ENGINEERING FIELD ACTIVITY WEST  
SAN BRUNO, CALIFORNIA  
NWS SEAL BEACH DETACHMENT  
CONCORD, CALIFORNIA

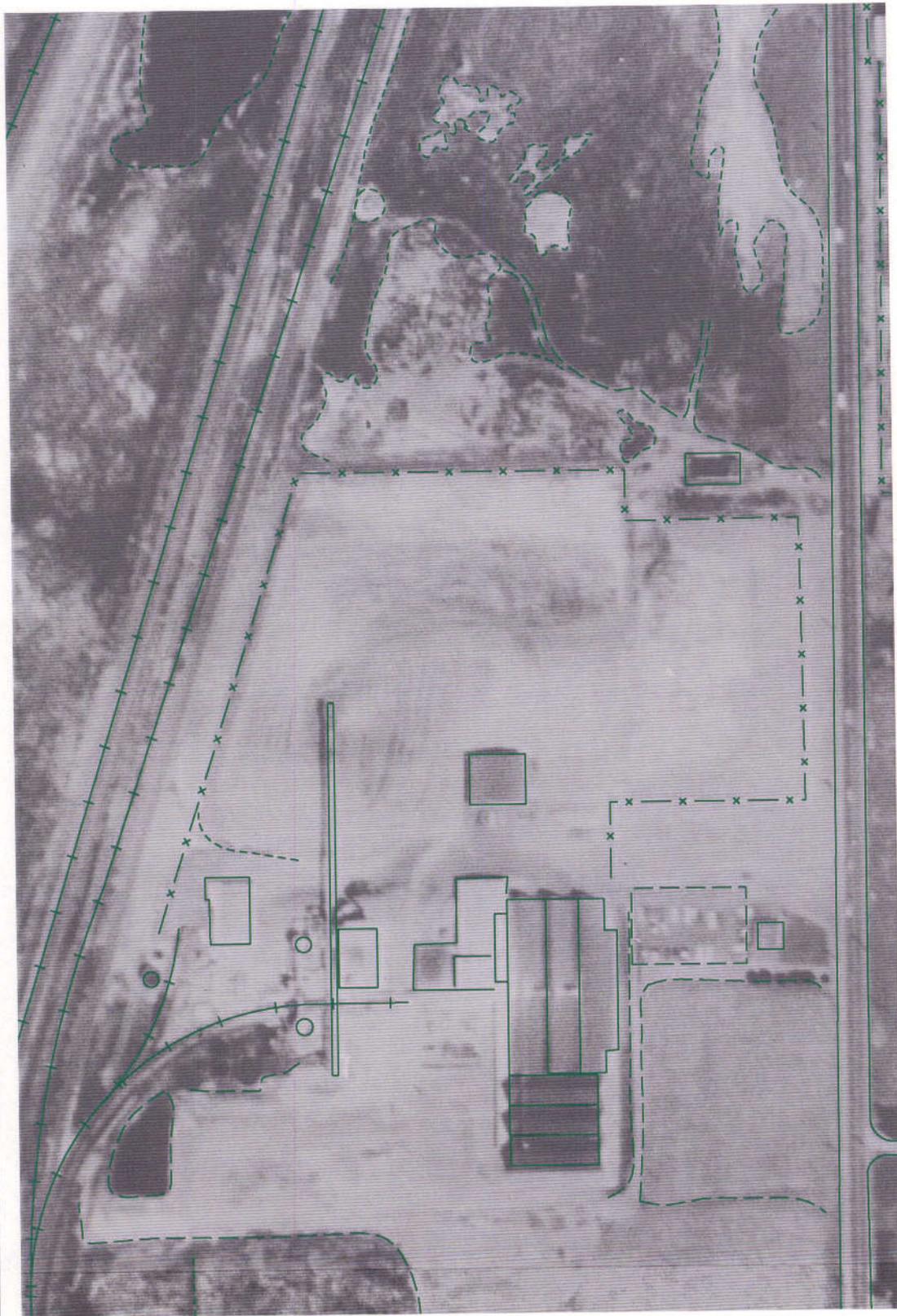
Figure 4

1957 Aerial Photograph  
and Site Features



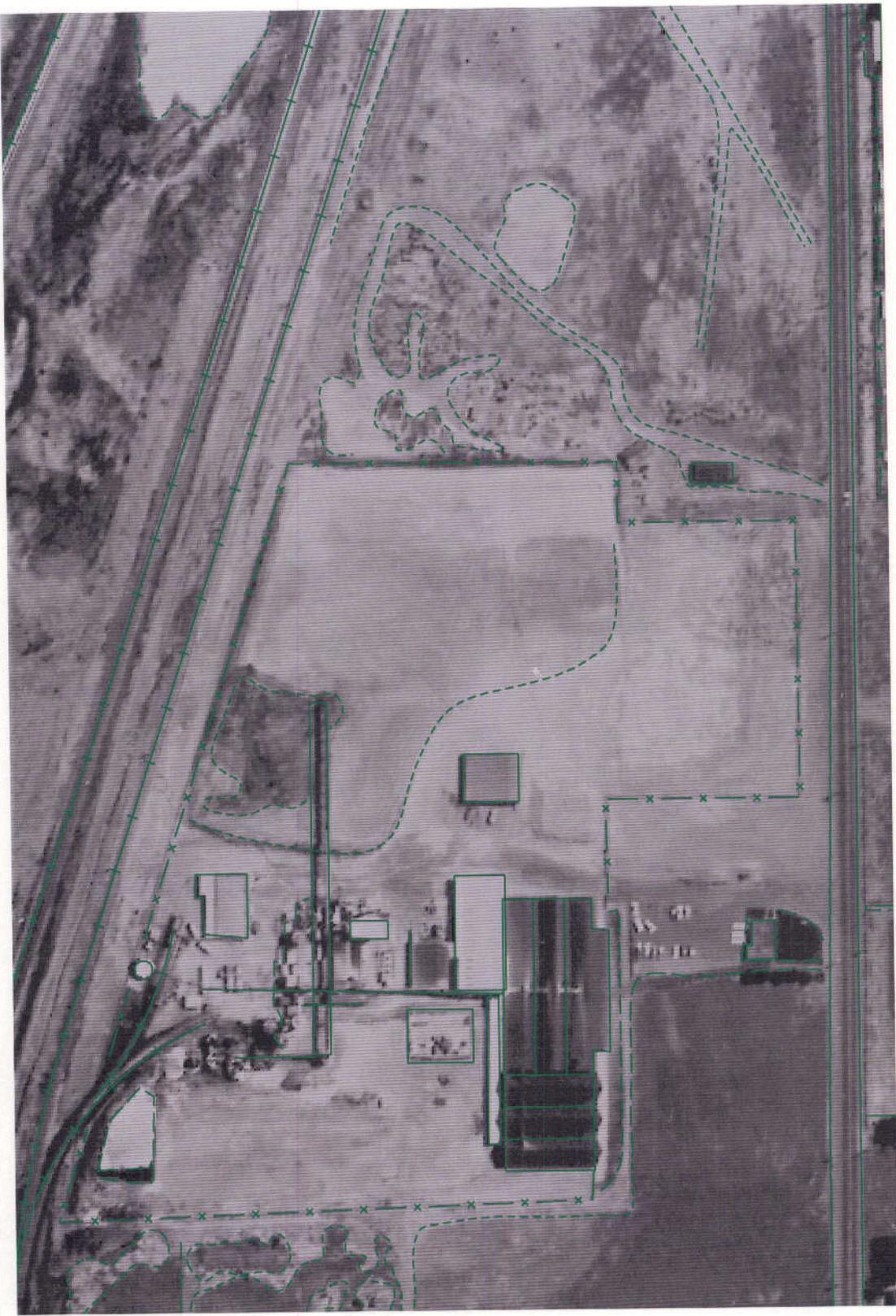
DEPARTMENT OF THE NAVY  
NAVAL FACILITIES ENGINEERING COMMAND  
ENGINEERING FIELD ACTIVITY WEST  
SAN BRUNO, CALIFORNIA  
NWS SEAL BEACH DETACHMENT  
CONCORD, CALIFORNIA  
**Figure 5**  
**1966 Aerial Photograph**  
**and Site Features**





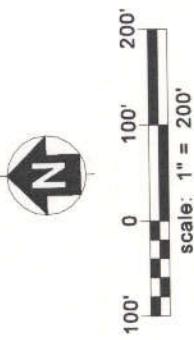
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NAVAL FACILITIES ENGINEERING COMMAND  
**ENGINEERING FIELD ACTIVITY WEST**  
SAN BRUNO, CALIFORNIA  
NWS SEAL BEACH DETACHMENT  
CONCORD, CALIFORNIA

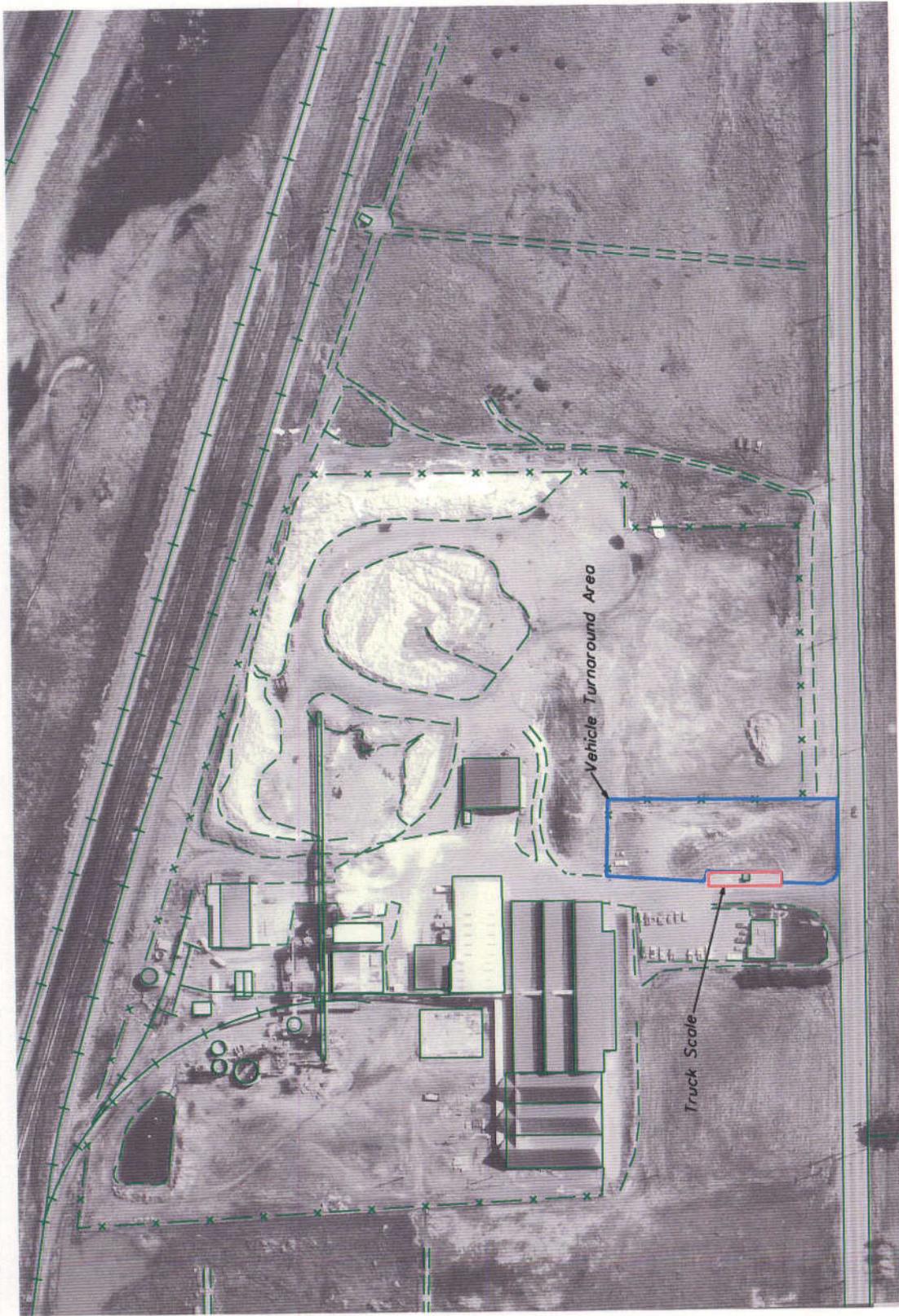
**Figure 6**  
1968 Aerial Photograph  
and Site Features



DEPARTMENT OF THE NAVY  
NAVAL FACILITIES ENGINEERING COMMAND  
**ENGINEERING FIELD ACTIVITY WEST**  
NWS SEAL BEACH DETACHMENT  
SAN BRUNO, CALIFORNIA  
CONCORD, CALIFORNIA

Figure 7  
1969 Aerial Photograph  
and Site Features



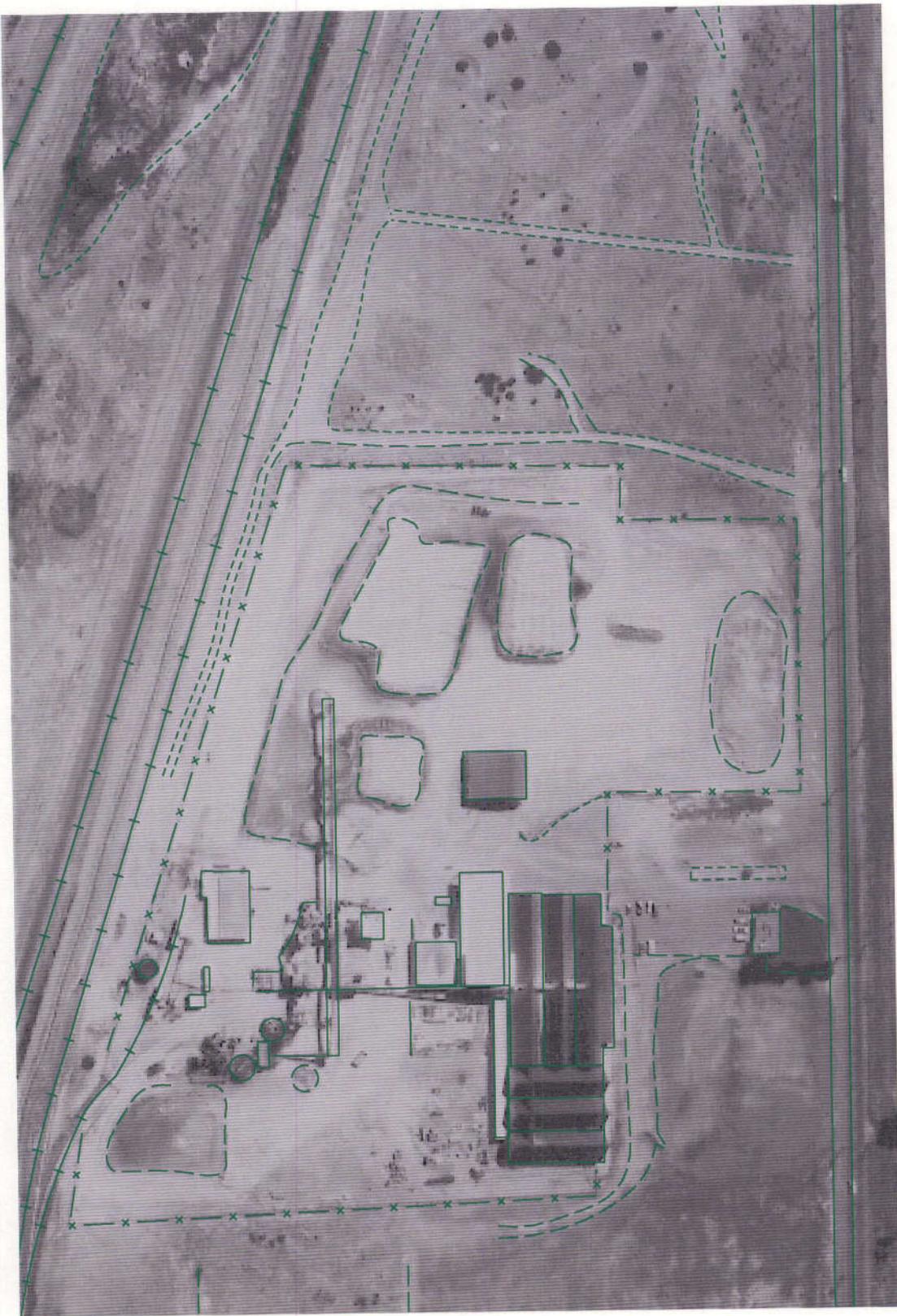


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NAVAL FACILITIES ENGINEERING COMMAND  
ENGINEERING FIELD ACTIVITY WEST  
SAN BRUNO, CALIFORNIA

NWS SEAL BEACH DETACHMENT  
CONCORD, CALIFORNIA  
Figure 8  
1974 Aerial Photograph  
and Site Features



100' 0 100' 200'  
scale: 1" = 200'

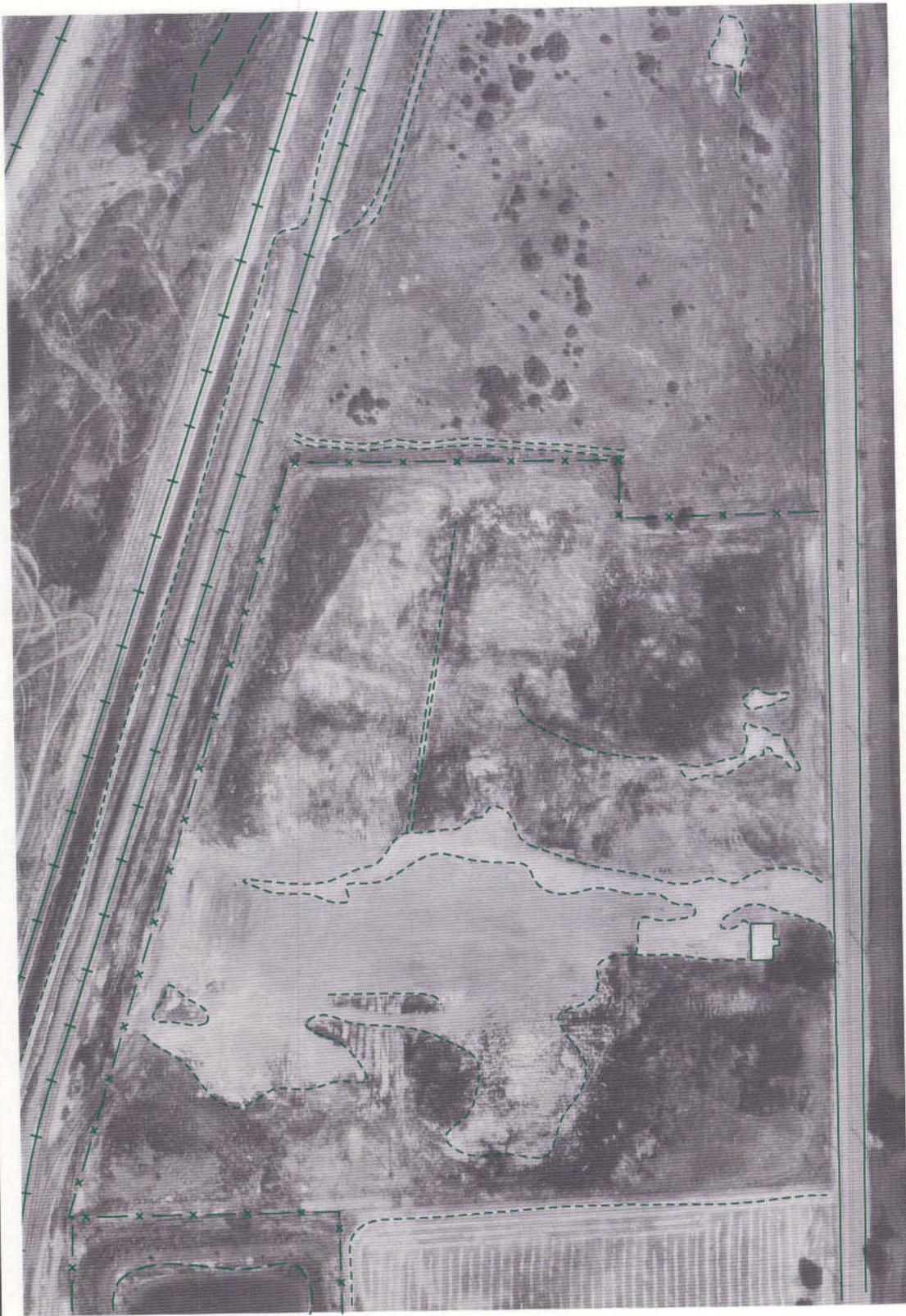


DEPARTMENT OF THE NAVY  
NAVAL FACILITIES ENGINEERING COMMAND  
**ENGINEERING FIELD ACTIVITY WEST**  
SAN BRUNO, CALIFORNIA  
NWS SEAL BEACH DETACHMENT  
CONCORD, CALIFORNIA

Figure 9  
1976 Aerial Photograph  
and Site Features



100' 0 100' 200'  
scale: 1" = 200'

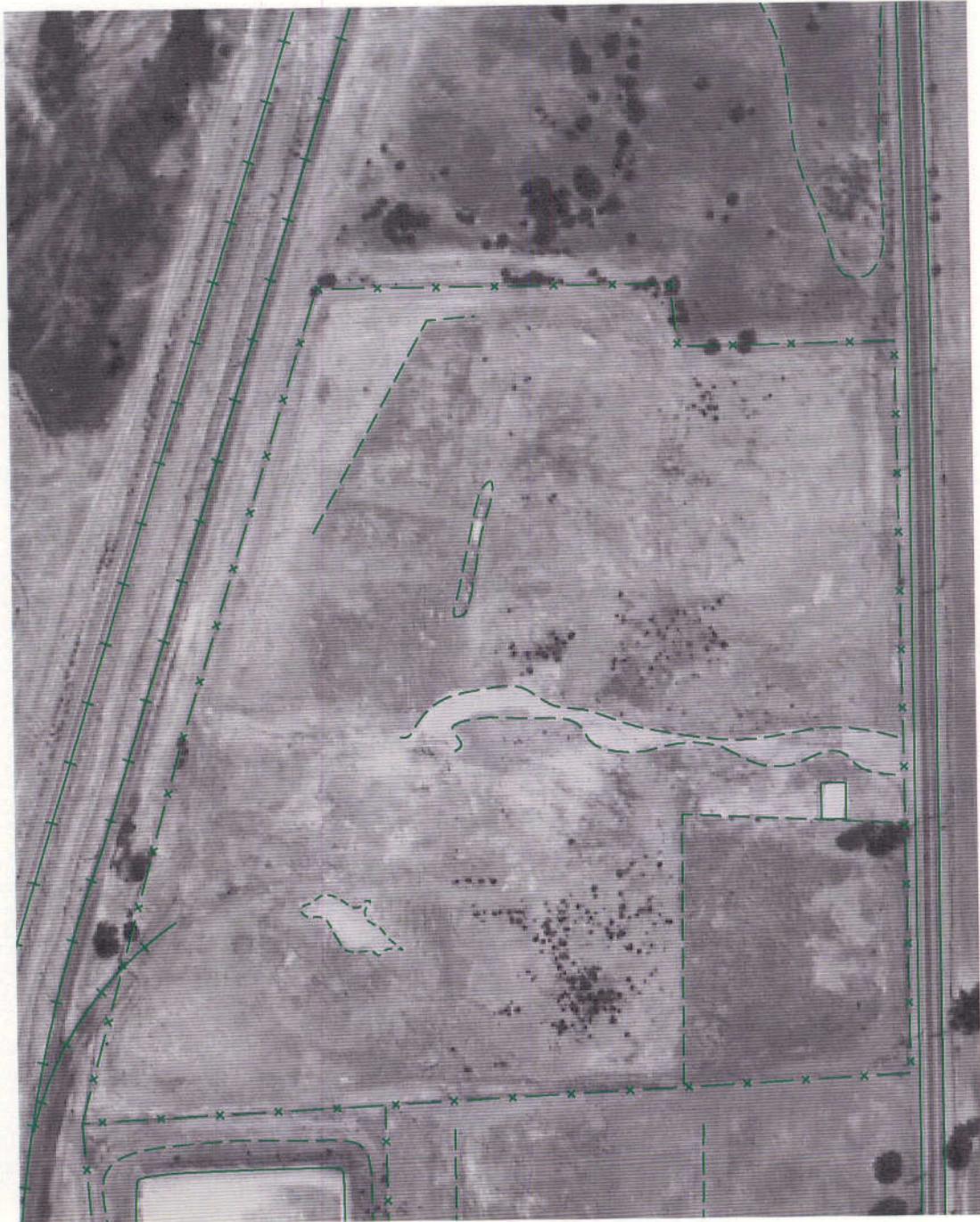


DEPARTMENT OF THE NAVY  
NAVAL FACILITIES ENGINEERING COMMAND  
ENGINEERING FIELD ACTIVITY WEST  
SAN BRUNO, CALIFORNIA  
NWS SEAL BEACH DETACHMENT  
CONCORD, CALIFORNIA

Figure 10  
1986 Aerial Photograph  
and Site Features



100' 0 100' 200'  
scale: 1" = 200'

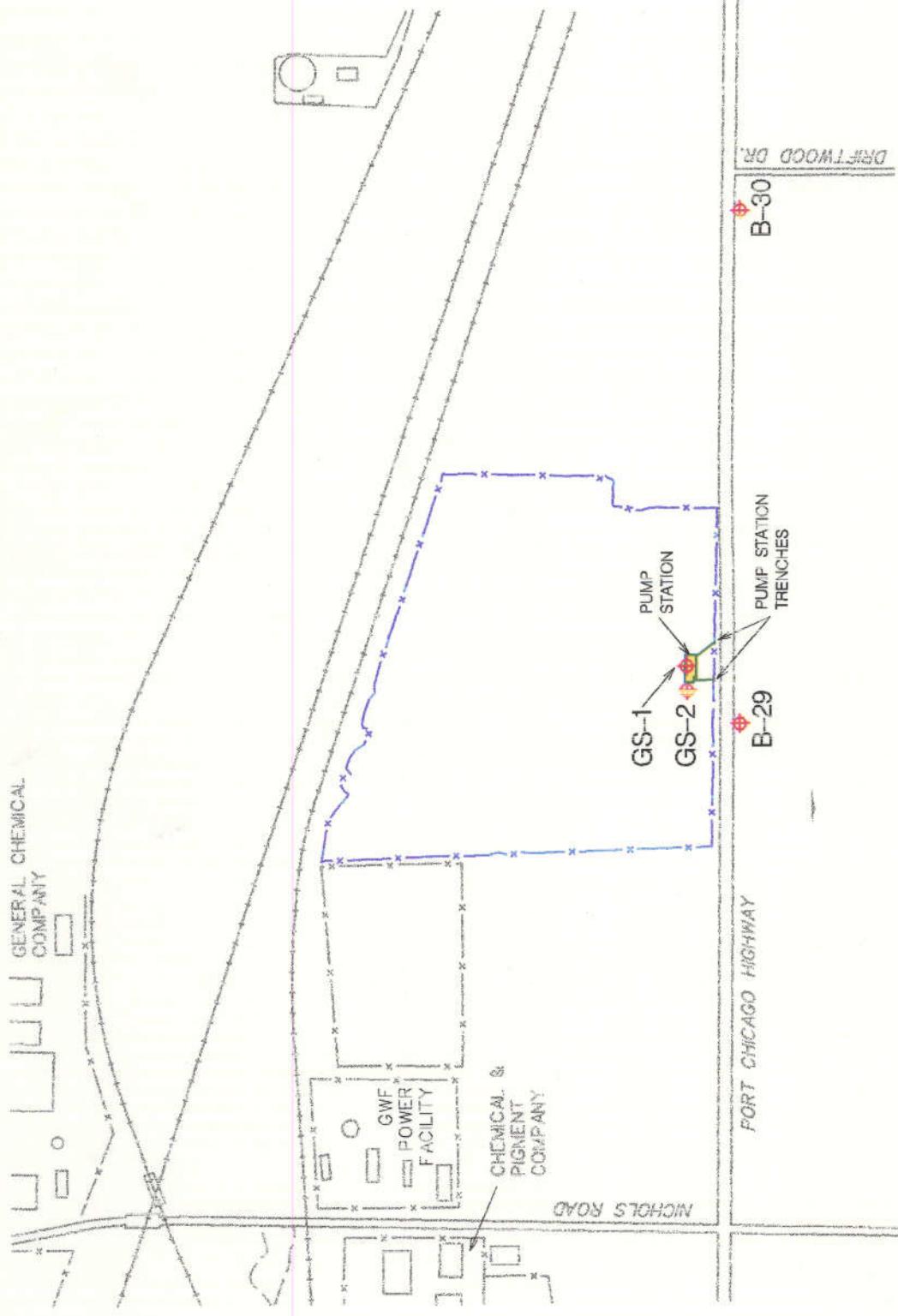


DEPARTMENT OF THE NAVY  
NAVAL FACILITIES ENGINEERING COMMAND  
**ENGINEERING FIELD ACTIVITY WEST**  
NWS SEAL BEACH DETACHMENT  
SAN BRUNO, CALIFORNIA

CONCORD, CALIFORNIA  
**Figure 11**  
**1988 Aerial Photograph**  
**and Site Features**



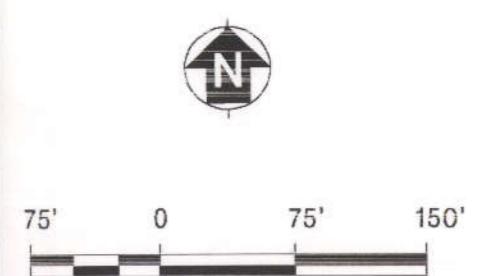
100' 0 100' 200'  
scale: 1" = 200'



◆ GS-1 GEOSYNTEK GEOFROBE BORING (1996)  
◆ B-29 HERZOG AND ASSOCIATES BORING (1996)  
NOTE: DHS BORING LOCATIONS ARE UNKNOWN



DEPARTMENT OF THE NAVY  
NAVAL FACILITIES ENGINEERING COMMAND  
ENGINEERING FIELD ACTIVITY WEST  
SAN FRANCISCO, CALIFORNIA  
NMS SEAL BEACH DETACHMENT  
CONCORD, CALIFORNIA  
Figure 12  
Previous Investigation  
Boring Locations



**LEGEND:**

- Former Gypsum Piles
- ▲ Surface Soil Sample
- Surface Soil + Deeper Soil Sample
- Deep Soil Sample Only
- Bare Soil Areas
- Shallow Test Pit (Ash)
- Shallow Test Pit (No Ash)
- ◆ Exploratory Soil Boring
- "Ash" Areas

**Note:**  
Site features from 1974 aerial photo  
are shown as background

DEPARTMENT OF THE NAVY	NAVAL FACILITIES ENGINEERING COMMAND
ENGINEERING FIELD ACTIVITY WEST	
SAN BRUNO, CALIFORNIA	
NWS SEAL BEACH DETACHMENT	CONCORD, CALIFORNIA

Figure 13  
Preliminary Assessment  
Boring Locations and Site Features

TABLE 3

## HUMAN HEALTH RISK ASSESSMENT: SUMMARY OF RESULTS

## AREA OF CONCERN 1, NWS CONCORD

Chemical of Potential Concern	Exposure Point Concentration	1998 Industrial PRG*		Cancer Risk	Hazard Quotient
		Cancer	Noncancer		
Aluminum	33,900	--	1,900,000	--	0.02
Antimony	21.6	--	750	--	0.03
Arsenic	148	3	480	4.9E-05	0.31
Barium	302	--	120,000	--	<0.01
Beryllium	0.34	--	3,700	--	<0.01
Cadmium	11.3	3,000	930	3.8E-09	0.01
Chromium	86.2	450	--	1.9E-07	--
Cobalt	38.9	--	29,000	--	<0.01
Copper	156	--	70,000	--	<0.01
Iron	45,000	--	560,000	--	0.08
Manganese	1,360	--	45,000	--	0.03
Mercury	113	--	560	--	0.20
Selenium	875	--	9,400	--	0.09
Silver	10.4	--	9,400	--	<0.01
Thallium	1.4	--	130	--	0.01
Vanadium	125	--	13,000	--	<0.01
Zinc	194	--	560,000	--	<0.01
Volatile Organic Compound ( $\mu\text{g}/\text{kg}$ )					
Acetone	0.24	--	6,100	--	<0.01
Toluene	0.005	--	2,000	--	<0.01
<b>TOTAL:</b>		<b>5.0E-05</b>		<b>0.78</b>	

Source: EPA, 1998. "Memorandum Regarding Region IX 1998 Preliminary Remediation Goals (PRG)".  
 Stanford J. Smucker, Regional Toxicologist.

**TABLE 4**  
**ECOLOGICAL RISK ASSESSMENT: FOOD CHAIN MODELING RESULTS**  
**AREA OF CONCERN 1, NWS CONCORD**

ANALYTE	Sample Location of Maximum Soil Concentration	Significant or Immediate Risk to Individual Receptor? (HQ <sub>I</sub> >1.0)	Significant or Immediate Risk to Typical Receptor? (HQ <sub>S</sub> >1.0)	Probable Risk to Individual Receptor? (HQ <sub>I</sub> >1.0)	Potential Risk to Typical Receptor? (HQ <sub>S</sub> >1.0)	Potential Risk to Individual Receptor? (HQ <sub>R</sub> >1.0)
<b>Gray Fox</b>						
Lead	SB001	No	No	No	30,305	52,887
Mercury	SB009	No	1.2	2.0	11.6	20
Selenium	SB001	1.3	4.8	8.3	69.3	121
<b>Nonpoint Herbicides</b>						
Lead	SB001	No	No	No	2,051	3,711
Mercury	SB009	No	No	No	No	1.2
Selenium	SB001	No	No	No	No	1.5

**APPENDIX A**

**REGIONAL WATER QUALITY CONTROL BOARD ORDERS**



CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
SAN FRANCISCO BAY REGION

12/5/73

CLEANUP AND ABATEMENT ORDER NO. 73-12

The California Regional Water Quality Control Board, San Francisco Bay Region, finds:

Findings

1. Union Oil Company of California's subsidiary, Collier Carbon and Chemical Corporation owns and operates a fertilizer manufacturing plant on Port Chicago Highway approximately 500 feet East of Nichols Road in the Port Chicago - Pittsburg area of Contra Costa County. Raw materials used at the plant include: phosphoric acid, sulfuric acid and ammonia.
2. The Regional Board has not adopted requirements for the discharge of waste from the Collier Carbon and Chemical Corporation fertilizer plant.
3. On November 29, 1973, aerial observations and follow up land investigation by Regional Board, Fish and Game, and Coast Guard personnel determined that the vegetation and aquatic life in a marsh about 2000 feet easterly of the subject fertilizer plant was heavily damaged. Water in the marsh was highly acidic as a result of acidic waste discharges, drainage and seepage from the plant area. Included were one gallon per minute discharges with pH's of less than 3 at three different locations.
4. Collier Carbon and Chemical Corporation did intentionally discharge waste and has deposited waste where it is being and threatens to be discharged into the waters of the State, has created and threatens to continue to create a condition of pollution and nuisance.

ORDER

It Is Hereby Ordered that pursuant to California Water Code Section 13304, Union Oil Company of California's subsidiary Collier Carbon and Chemical Corporation shall:

1. Abate, forthwith, all surface and subsurface drainage from the plant site to the marsh area where such drainage is or could come in contact with chemicals and raw materials deposited on the plant site.
2. Remove and replace, forthwith, all soils contaminated with chemicals and raw materials within the plant area which do or could result in contaminated discharge of runoff or seepage from the plant site, to the marsh area.
3. Cleanup and abate, forthwith, all effects of acid and chemical discharges to the drainage courses and adjacent marsh area in a manner approved by the Executive Officer.

4. Provide adequate warning signs and patrol, as needed, to keep public out of the contaminated area until cleanup is effected.
5. Report to the Regional Board by December 14, 1973, and weekly thereafter, on the progress of such cleanup and abatement methods used.

Dated: December 5, 1973



David Dickey  
Executive Officer

INCLUDE  
THIS  
PAGE

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
SAN FRANCISCO BAY REGION

RESOLUTION NO. 73-20

VIOLATION OF SECTION 13385 OF THE  
CALIFORNIA WATER CODE, DISCHARGE OF CHEMICAL  
AND INDUSTRIAL WASTE (POLLUTANTS) (2/27/73)  
BY  
COLLIER CARBON AND CHEMICAL CORPORATION  
CONTRA COSTA COUNTY

WHEREAS, on December 27, 1973, the California Regional Water Quality Control Board, San Francisco Bay Region, after due notice held a public hearing, under Water Code Section 13385, regarding discharge of chemical and industrial waste (pollutants) to a water course and marsh tributary to Suisun Bay on or about November 29, 1973.

WHEREAS, based on evidence received at the hearing, the California Regional Water Quality Control Board, San Francisco Bay Region finds:

1. Collier Carbon and Chemical Corporation owns and operates a fertilizer manufacturing plant on Port Chicago Highway, east of Nichols Road in the Port Chicago-Pittsburg area of Contra Costa County.
2. Collier Carbon and Chemical Corporation discharged chemical and industrial wastes to a drainage course tributary to a marsh and Suisun Bay on or about November 29, 1973.
3. The discharge of chemical and industrial waste caused vegetation and aquatic life in the marsh to be heavily damaged and water in the marsh to be highly acidic.
4. Chemical waste and industrial waste are defined as pollutants in the California Administrative Code and the Federal Water Pollution Control Act.
5. The Company has not filed report on waste discharge pursuant to Section 13376 of the Water Code and requirements have not been adopted for the discharge of chemical and industrial wastes by Collier Carbon and Chemical Corporation from its fertilizer manufacturing plant.

NOW, THEREFORE BE IT RESOLVED, that this Regional Board, in accordance with Section 13386 of the California Water Code, does hereby request the Attorney General to take appropriate action under Section 13386 of the California Water Code, including a petition to the Superior Court to impose, assess and

recover such civil monetary remedies as may be proper against Collier Carbon and Chemical Corporation.

I, Fred H. Dierker, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of a resolution adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on December 27, 1973.

---

Executive Officer

10/12

C:

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
SAN FRANCISCO BAY REGION

ORDER NO. 74-53

NPSD PERMIT NO. CADG27839

WASTE DISCHARGE REQUIREMENTS FOR:

COLLIER CARBON AND CHEMICAL CORPORATION  
NICHOLS, CONTRA COSTA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region, (hereinafter called the Board) finds that:

1. Collier Carbon and Chemical Corporation, hereinafter called the discharger, submitted a report of waste discharge (NFDSS Short Form C) dated February 20, 1974.
2. The discharger is currently discharging industrial waste containing pollutants into a drainage ditch tributary to Suisun Bay, a water of the United States, at a point approximately 1,500 feet east-northeast of the intersection of Nichols Road and Port Chicago Highway in Nichols, California. The waste consists of stormwater runoff polluted with acid and gypsum, which are raw materials and by-products of ammonium phosphate fertilizer manufacturing.
3. The Board adopted a Water Quality Control Plan (Interim) for San Francisco Bay Basin in June 1971. The Interim Basin Plan contains water quality objectives for Suisun Bay.
4. The beneficial uses of Suisun Marsh, Suisun Bay, and contiguous waters are:
  - a. Recreation
  - b. Fish migration and habitat
  - c. Habitat and resting for waterfowl and migratory birds
  - d. Industrial, agricultural & municipal water supply
  - e. Aesthetic enjoyment
  - f. Navigation
5. Effluent limitation and toxic effluent standards established pursuant to Section 303(b), 301, 304, and 307 of the Federal Water Pollution Control Act and amendments thereto are applicable to the discharge.
6. The Board has notified the discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for the proposed discharge and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.
7. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

This Order shall serve as a National Pollutant Discharge Elimination System permit pursuant to Section 402 of the Federal Water Pollution Control Act, or amendments thereto, and shall take effect at the end of ten days from date of hearing provided the Regional Administrator, U. S. Environmental Protection Agency, has no objections.

IT IS HEREBY ORDERED Collier Carbon and Chemical Corporation, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder and the provisions of the Federal Water Pollution Control Act, and regulations and guidelines adopted thereunder shall comply with the following:

A. Discharge Prohibitions

1. The discharge of process wastewater, including polluted stormwater runoff, to waters of the State is prohibited, except during a 24-hour rainfall event having a recurrence period greater than 25 years. When such an event occurs, each wastewater impoundment may discharge that volume of process wastewater equivalent to the volume of precipitation that falls within the area tributary to that impoundment in excess of that attributable to the 25-year, 24-hour rainfall event. Any discharge occurring under this provision shall not have a pH of less than 6.5 nor greater than 8.5.

B. Provisions

1. Neither the treatment nor the disposal of pollutants shall create a nuisance as defined in the California Water Code.
2. Process wastewater and stormwater impoundments shall be designed, constructed, and operated so as to contain the precipitation from the 25-year, 24-hour rainfall event in the discharger's location.
3. Stormwater runoff from any area in which raw materials, products, by-products, or other wastes are handled or stored shall be routed to impoundment structures.
4. Process wastewater and polluted stormwater impoundments shall be constructed and maintained in a manner which will prevent percolation or seepage of the wastes.
5. The disposal of waste shall not cause degradation of groundwater suitable for domestic use or cause an increase in any quality parameter that would make groundwater unsuitable for domestic or industrial usage.
6. The discharger shall file with the Board, within 90 days after the effective date of this Order, a technical report on his preventive (fail-safe) and contingency (cleanup) plans for controlling accidental discharges and for minimizing the effect of such events. The technical report should:
  - a. Identify the possible sources of accidental loss, waste bypass, and polluted drainage. Loading and storage areas, extended plant shutdown, work stoppage, power outage, and failure of process equipment, tanks, and pipes should be considered.

- b. Describe facilities and procedures needed for effective preventive and contingency plans.
- c. Predict the effectiveness of the proposed facilities and procedures and provide an implementation schedule containing interim and final dates when they will be constructed, implemented, or operational. (Reference: Sections 13267(b) and 13268, California Water Code)

This Board, after review of the technical report, may establish conditions which it deems necessary to control accidental discharges and to minimize the effects of such events. Such conditions may be incorporated as part of this Order, upon notice to the discharger.

7. Within 30 days after any discharge is made under the provisions specified in Section A.1. of this Order, the discharger shall submit to the Board a report documenting compliance with those provisions. The report shall include:

- a. Time and date on which discharge was made;
- b. magnitude of the 24-hour rainfall event which made discharge necessary;
- c. volume of waste discharged;
- d. pH of waste discharged.

8. Collier Carbon and Chemical Corporation shall comply with the following time schedule to assure compliance with Sections A.1., B.1., B.2., B.3., B.4., B.6., and B.7. of this Order:

<u>Task</u>	<u>Completion Date</u>	<u>Report of Compliance Due</u>
Complete final construction plans	July 19, 1974	August 2, 1974
File accidental discharge plan as per provision 6.	-	September 28, 1974
Complete construction	October 1, 1974	October 15, 1974
Full compliance	October 15, 1974	October 29, 1974

The discharger shall submit a report to the Board on or before each compliance report date, detailing his compliance or noncompliance with the specific schedule date and task. If noncompliance is being reported, the reasons for such non-compliance shall be stated, plus an estimate of the date when the discharger will be in compliance. The discharger shall notify the Board by letter when he has returned to compliance with the time schedule.

9. The discharger shall comply with Section B.5. of this Order immediately.

10. This Order includes items 1 and 5 of the attached "Reporting Requirements" dated August 8, 1973.

This Order includes Items 1, 4, 5, 6, 7, 8, 9, and 10 of the attached "Standard Provisions", dated August 8, 1973.

12. In the event the discharger is unable to comply with any of the conditions of this Order due to:

- (a) breakdown of waste treatment equipment or process equipment;
- (b) accidents caused by human error or negligence; or
- (c) other causes such as acts of nature,

the discharger shall notify the Executive Officer by telephone as soon as he or his agents have knowledge of the incident and confirm this notification in writing within two weeks of the telephone notification. The written notification shall include pertinent information explaining reasons for the non-compliance and shall indicate what steps were taken to correct the problem and the dates thereof, and what steps are being taken to prevent the problem from recurring.

13. This Order expires on July 1, 1979, and the discharger must file a Report of Waste Discharge in accordance with Title 23, California Administrative Code, not later than 180 days in advance of such date as application for issuance of new waste discharge requirements.
14. In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the discharger, the discharger shall notify the succeeding owner or operator of the existence of this Order by a letter, a copy of which shall be forwarded to this Board.

I, Fred H. Dierker, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on July 16, 1974.

---

FRED H. DIERKER  
Executive Officer

Attachments:

"Rept. Req'ts", 8/8/73  
"Std. Prov.", 8/8/73

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
SAN FRANCISCO BAY REGION

ORDER NO. 79-63

NPDES PERMIT NO. CA0027839

C: NAOA

WASTE DISCHARGE REQUIREMENTS FOR:

UNION CHEMICALS DIVISION OF  
UNION OIL COMPANY OF CALIFORNIA  
NICHOLS PLANT  
CONTRA COSTA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region, hereinafter called the Board, finds that:

1. Union Chemicals Division of Union Oil Company of California, Nichols Plant, hereinafter discharger, formerly known as Collier Carbon and Chemical Corporation, submitted a report of waste discharge (NPDES Short Form C) on January 30, 1979, for reissuance of its NPDES permit which expires on July 1, 1979.
2. The discharger has shut down the Nichols Plant but continues to maintain the plant's two containment ponds which collect storm runoff. This runoff may be polluted with acid and gypsum residuals from the storage and process areas. Storm runoff in excess of the ponds' designed capacity is treated for pH control then discharged into a drainage ditch tributary to Suisun Bay, a water of the United States, at a point approximately 1500 feet east-northeast of the intersection of Nichols Road and Port Chicago Highway in Nichols, California.
3. On July 16, 1974, the Regional Board adopted Order No. 74-53 prescribing waste discharge requirements for this discharge.
4. A Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) was adopted by the Board on April 8, 1975. This Basin Plan contains water quality objectives for Suisun Bay and contiguous waters.
5. The beneficial uses of Suisun Bay and contiguous waters are:
  - a. Recreation (contact and non-contact)
  - b. Fish migration and spawning
  - c. Habitat for wildlife and estuarine organisms including some rare and endangered species
  - d. Industrial water supply
  - e. Esthetic enjoyment
  - f. Navigation
  - g. Commercial and sport fishing

12-11-80

GRF found that operation had been discontinued.  
— ponds still there, however.

6. Effluent limitations and toxic effluent standards, established pursuant to Sections 208(b), 301, 304, and 307 of the Federal Water Pollution Control Act and amendments thereto are applicable to the discharge.
7. This project involves the continued operation of a privately-owned facility with negligible or no expansion of use beyond that previously existing. Consequently, this project will not have a significant effect on the environment based upon the exemption provided in Section 15101, Title 14, California Water Code.
8. The Board has notified the discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for the discharge and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.
9. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED that Union Chemicals Division of Union Oil Company of California, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder and the provisions of the Federal Water Pollution Control Act, and regulations and guidelines adopted thereunder shall comply with the following:

A. Effluent Limitations

1. The discharge of stormwater runoff from the former product handling and storage areas to waters of the State shall not have a pH of less than 6.5 nor greater than 8.5.

B. Provisions

1. Neither the treatment nor the disposal of pollutants shall create a nuisance as defined in the California Water Code.
2. Stormwater runoff from the process and storage areas shall be routed to impoundment structures.
3. Polluted stormwater impoundments shall be maintained in a manner which will prevent percolation or seepage of the wastes.
4. The disposal of waste shall not cause degradation of ground water suitable for domestic use or cause an increase in any quality parameter that would make ground water unsuitable for domestic or industrial usage.
5. Within 30 days after discharge, the discharger shall submit to the Board a report documenting compliance with effluent limitation A.1. The report shall include:
  - a. Time and date on which discharge was made;
  - b. volume of waste discharged;
  - c. pH of waste discharged.

16. Order No. 74-53 is hereby rescinded.
7. The discharger shall comply with all sections of this Order immediately upon adoption.
8. This Order includes all items of the attached April 1977 Standard Provisions, Reporting Requirements, except A.5., A.16., B.1., B.2., B.5.
9. This Order expires on June 19, 1984, and the discharger must file a Report of Waste Discharge in accordance with Title 23, California Administrative Code, not later than 180 days in advance of such date as application for issuance of new waste discharge requirements.
10. The discharger shall notify this Board by letter in the event of any material change in the use of the property.

I, Fred H. Dierker, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on June 19, 1979.

Attachment:

Standard Provisions, Reporting  
Requirements, and Definitions - April 1977

FRED H. DIERKER  
Executive Officer

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
SAN FRANCISCO BAY REGION

ORDER NO. 83-28

ORDER RESCINDING WASTE DISCHARGE REQUIREMENTS  
ORDER NO. 79-63, ISSUED TO

UNION CHEMICALS DIVISION OF  
UNION OIL COMPANY OF CALIFORNIA  
NICHOLS PLANT  
CONTRA COSTA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region, (hereinafter Board) finds that:

1. The Union Chemical Division of Union Oil Company of California (hereinafter the Discharger) operated a fertilizer manufacturing plant in Nichols until 1979.
2. On June 19, 1979 the Board adopted Order No. 79-63, NPDES No. CA0027839, Waste Discharge Requirements regulating run-off from the Discharger's discontinued fertilizer manufacturing plant and gypsum piles.
3. On September 7, 1982 the Discharger sent a proposal to RWQCB staff to remove gypsum from the ponds and storage areas, filling the ponds with clean soil, seeding the area and demonstrating that run-off pH would not cause adverse water quality impact.
4. Based on a report submitted by the Discharger on March 30, 1983 and Regional Board staff inspection on July 22, 1983 it is apparent that the Discharger has completed the clean-up activities set forth in the September 7, 1982 proposal. The storm water discharge monitoring for over a three month period (January 18, 1983 through April 25, 1983) indicated that clean-up actions were successful in eliminating possible water quality impacts due to prior site activities.
5. The United States Navy has purchased the Discharger's property.
6. The Discharger has complied with waste discharge requirements set forth in Order No. 79-63 and would like that the Board consider rescinding Order No. 79-63 based on the demonstration that all requirements have been satisfactorily completed.
7. On September 21, 1983, at a meeting starting in the Assembly Room, State Building, 1111 Jackson Street, Oakland, after due notice to the Dischargers and all other interested persons, the Regional Board conducted a public hearing at which the Discharger appeared and evidence was received concerning the discharge.

IT IS HEREBY ORDERED THAT

This Regional Board's Order No. 79-63 is rescinded.

I, Fred H. Dierker, Executive Officer, do hereby certify the foregoing is a full, true and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region on September 21, 1983.

  
FRED H. DIERKER  
Executive Officer

**APPENDIX B**

**DEPARTMENT OF HEALTH SERVICES ANALYTICAL RESULTS AND LETTER**



*fwecb file*

DEPARTMENT OF HEALTH SERVICES  
1424 P STREET  
SACRAMENTO, CA 95814  
(916) 323-6041



October 16, 1980

Mr. Carl Payne  
Code 1142C  
WESTDIVRAVFACENGCOM  
P O Box 727  
San Bruno, CA 94066

Dear Mr. Payne:

Enclosed please find a copy of our lab results from sampling at the Union Collier site on Nichols Road in Contra Costa County. The sample was a composite of soils taken from several locations in the area where the main gypsum stockpile existed. Please bear in mind that this was only a preliminary sampling and that these are only raw results, and should be viewed as such.

The Abandoned Site Project has arranged to turn this case over to the Regional Water Quality Control Board, and will meet with a representative of the Board in the near future to discuss this matter.

I will inform you of the outcome of that meeting and of any other developments. Please feel free to call me with any further questions at (916) 323-6042 or David Pontecorvo of our staff at (415) 540-3007.

Sincerely,

Janet K. Meyer  
Waste Management Specialist  
Abandoned Site Project

Enclosure

cc:  Dick Mc Murty  
RWQCB, Region 2  
1111 Jackson St., Rm. 6040  
Oakland, CA 94607

Mr. R. A. Royce, Plant Manager  
Union Oil Co. of California  
2101 Franklin Canyon Road  
Rodeo, CA 94572

CALIFORNIA REGIONAL WATER

OCT 22 1980

QUALITY CONTROL BOARD

## LABORATORY REPORT

2250

for Q. Chien

(Name or person requesting analysis)

COLLECTOR'S SAMPLE #: 057 to 058

LOCATION OF SAMPLING:

NAME: *Vincent Coffey*ADDRESS: *Richards Rd / Pet. College Hwy*

(number) (street)

TEL. NO.

(city)

(state) (zip)

ANALYTICAL PROCEDURES USED: Metal by atomic acid digestion, then  
X-ray fluorescence analysis

REFERENCES:

## ANALYSIS RESULTS

Metal analysis: ppm

ITEM #	2248
Insp.	
Spd E	0.57
Al	-
As	87
Ba	-
Pb	-
Cd	24.5±6
Co	-
Cr	83±22
Cu	61±10
Fe	1,690
Hg	-
Mn	24±16
Mo	9±6
Na	15±6
Ph	4.9±14
Sb	-
Se	9.5±4
Sn	-
Sr	222
Tl	-
V	10±2.4
Zn	218
Br	6±4
Rb	10±4
Y	20±4
Ta	7.6±1.4
Ga	6.1±4
Tl	-
Tc	-

## Other analyses

HHL No. pH

2248 2.1 ✓

2249 3.1 ✓

2250 2.2 ✓

Gypsum file sample

Written in pencil  
by GPFThe analytical error for metal  
determination is approx. ± 10%,  
unless otherwise indicated.Note: (-): below detection limit of instrument  
(blank): not determined

Supervising Chemist:

Analyst: *James P. Chien*

signature

date: 9-11-80

Endeavor

signature

9/17/80

date

HAZ DOOS MATERIALS LABORATORY

HML # 2248 to2250

## LABORATORY REPORT

TO: D. Castor

(name of person requesting analysis)

COLLECTOR'S SAMPLE #: 051 to 053

LOCATION OF SAMPLING:

NAME Union CollierDATE OF REPORT: 9-16-80ADDRESS Nichols Rd / Port Chicago Hwy  
(number) 100 (street) Port Chicago (city)  
TEL. NO. \_\_\_\_\_(state) CA (zip) 94541ANALYTICAL PROCEDURES USED: Metals by nitric acid digestion, then  
X-ray fluorescence analysis

REFERENCES: \_\_\_\_\_

## ANALYSIS RESULTS

Metal analysis: PPM

HML #	<u>2248</u>	<u>2249</u>	<u>2250</u>	
Insp. Sp1 #	<u>051</u>	<u>052</u>	<u>053</u>	_____
Ag	—	<u>26±14</u>	<u>84±18</u>	✓
As	<u>87</u>	—	<u>257±44</u>	
Ba	—	—	—	
Bi	—	—	—	
Cd	<u>24±16</u>	—	—	
Co	—	—	—	
Cr	<u>83±12</u>	—	—	
Cu	<u>62±10</u>	<u>31±8</u>	<u>48±9</u>	
Fe	<u>1,690</u>	<u>3,800</u>	<u>1,670</u>	
Hg	—	—	—	
Mn	<u>24±16</u>	<u>53±20</u>	<u>23±16</u>	
Mo	<u>9±6</u>	<u>14±6</u>	—	
Ni	<u>15±6</u>	<u>16±8</u>	—	
Pb	<u>49±14</u>	<u>1,600</u>	<u>4,120</u>	
Sb	—	—	—	
Se	<u>9±4</u>	<u>976</u>	<u>7,030</u>	
Sn	—	—	—	
Sr	<u>222</u>	<u>244</u>	<u>23±6</u>	
Tl	—	—	—	
V	<u>70±24</u>	<u>36±24</u>	—	
Zn	<u>218</u>	<u>77±10</u>	<u>48±8</u>	
Br	<u>6±4</u>	<u>14±4</u>	<u>44±8</u>	
Rb	<u>10±4</u>	<u>33±6</u>	—	
Y	<u>20±4</u>	<u>37±10</u>	—	
La	<u>76±64</u>	—	—	
Ga	<u>6±4</u>	—	—	
W-Th	—	<u>19±18</u>	—	
Tc	—	<u>552</u>	<u>1,250</u>	

Note! (—): below detection limit of instrument  
(blank): not determinedAnalyst: James J. Chen date 9-16-80  
signature \_\_\_\_\_

Other analyses	
no	LOCATION INFO PROVIDED
HML No.	pH
2248	2.1 ✓
2249	3.1 ✓
2250	2.2 ✓

The analytical error for metal determination is approx. ± 10%, unless otherwise indicated.

Supervising Chemist:

Ende Yura date 9/17/80  
signature \_\_\_\_\_

PRIORITY   
(explain) \_\_\_\_\_

HML No. 2248  
to  
2250

## HAZARDOUS MATERIALS SAMPLE ANALYSIS REQUEST

### PART I: FIELD SECTION

F. 21 - 8

COLLECTOR D. Castel DATE SAMPLED 8/14/80 TIME 400 HOURS  
LOCATION OF SAMPLING:  
NAME Union Cullier 3' lot to east TEL NO. 799-1463  
ADDRESS 60 Nichols Rd / Port Chicago Hwy R.A. Royce  
number                  street                  state                  zip                   
HML NO.                  COLLECTOR'S                  TYPE OF                   
(Lab only) SAMPLE NO.                  SAMPLE\*                  FIELD INFORMATION\*\*  
2248 051A Soil  
2249 052A Soil  
2250 053A Soil

ANALYSIS REQUESTED: Total K, radiation ( $\alpha, \beta$ ),  
Total phosphate, pH, ~~etc.~~

### CHAIN OF CUSTODY

1. <u>John Castel</u>	<u>W.M.S.T</u>	<u>8/14/80 - 8/14/80</u>
signature	title	inclusive dates
2. _____	_____	_____
signature	title	inclusive dates
3. _____	_____	_____
signature	title	inclusive dates
4. _____	_____	inclusive dates
signature	title	inclusive dates

### SPECIAL REMARKS

(e.g. duplicate sample given to company, etc.)

### PART II: LABORATORY SECTION

RECEIVED BY Mike Vas TITLE Lab Supervisor DATE 8/14/80

SAMPLE ALLOCATION:  HML  SCBL  LBL  OTHER DATE

ANALYSIS REQUIRED pH, heavy metals

\*Indicate whether sample is sludge, soil, etc.; \*\*Use back of page for addition

MATTIE &amp; JDN MEYERS

HML # 2248 to2250

## HAZARDOUS MATERIALS LABORATORY

## LABORATORY REPORT

TO: D. Castle

(name of person requesting analysis)

COLLECTOR'S SAMPLE #: 051A to 053A

## LOCATION OF SAMPLING:

NAME Union Collier i Lot to EastADDRESS Nichols RdPort Chicago Hwy

(number) (street)

(city)

(state) (zip)

DATE OF REPORT: 4/20/81DATE COLLECTED: 3/14/80TEL. NO. 799-4463

ANALYTICAL PROCEDURES USED: WET citrate extraction. Performed on dried, sieved (44<sup>+</sup>) samples.  
Extraction duration: 48 hrs. Error: ±10% unless indicated  
Analysis by X-Ray Fluorescence

REFERENCES: HAN Methods

## ANALYSIS RESULTS

(48-hr. Citrate Buffer WEOther analyses

Metal	Metal analysis: PPM	HML #	2249	2250	citrate blank
Insp. Spt #	052A		053A		
Ag	—		—	—	—
As	—		—	—	—
Ba	49±48		—	—	—
Bi	—		—	—	—
Cd	—		—	—	—
Co	—		—	—	—
Cr	18±16		—	—	—
Cu	22±8		7±6	—	—
Fe	782		283	—	—
Hg	—		—	—	—
Mn	57±16		—	—	—
Mo	—		—	.4±6	—
Ni	8±6		—	—	—
Pb	2370		4380	—	—
Sb	—		32±22	—	—
Se	33±6		34±8	—	—
Sn	—		—	—	—
Sr	142		8±6	—	—
Tl	—		—	—	—
V	—		—	—	—
Zn	55±8		—	—	—
Br	13±6		9±6	.5±.2	—
Rb	17±6		—	—	—
Y	39±12		—	—	—
Pd	—		14±12	2±1	—
Te	126±27		302	—	—
Ru	—		17±12	—	—

Note: (—): below detection limit of instrument

(blank): not determined

TL Supervising Chemist:

Analyst:

Heaven Shand  
signature

4/20/81

date

Erika Vora  
signature4/24/81  
date

Ingression RASS 4

Supplements / Requests

could have been RASS 4?

PRIORITY 

(explain) \_\_\_\_\_

HML No. 2248  
to  
7250

## HAZARDOUS MATERIALS SAMPLE ANALYSIS REQUEST

## PART I: FIELD SECTION

COLLECTOR	<u>D. Castlel</u>	DATE SAMPLED	<u>8/14/80</u>	TIME	<u>4<sup>00</sup></u>	HOURS
LOCATION OF SAMPLING:						
NAME	<u>Union Collier f lot to East</u>			TEL NO.	<u>799-4463</u>	
ADDRESS	<u>Nichols Rd / Fort Chicago Hwy</u>	number	street	state	<u>R.A. Royre</u>	
HML NO. (Lab only)	COLLECTOR'S SAMPLE NO.	TYPE OF SAMPLE*	FIELD INFORMATION**			
<u>2249</u>	<u>052A</u>	<u>soil</u>	<u>similar to CSA, but some gypsum</u>			
<u>2250</u>	<u>053A</u>	<u>soil</u>	<u>(unknown dumping) - possibly not</u>			
			<u>related to fertilizer plot</u>			

ANALYSIS REQUESTED: 48-hour citrate WET  
This is a supplemental request; initial results  
were reported 9/16/80

## CHAIN OF CUSTODY:

1.	<u>See</u>	<u>original SAR</u>	
2.	<u>signature</u>	<u>title</u>	<u>inclusive dates</u>
3.	<u>signature</u>	<u>title</u>	<u>inclusive dates</u>
4.	<u>signature</u>	<u>title</u>	<u>inclusive dates</u>
	<u>signature</u>	<u>title</u>	<u>inclusive dates</u>

## SPECIAL REMARKS

(e.g. duplicate sample given to company, etc.)

## PART II: LABORATORY SECTION

RECEIVED BY Eric Van TITLE Lab. Super DATE 3/

SAMPLE ALLOCATION:  HML  SCBL  LBL  OTHER DATE \_\_\_\_\_

ANALYSIS REQUIRED 48-hr. citrate buffer Waste Extraction  
Test

\*Indicate whether sample is sludge, soil, etc.; \*\*Use back of page for addition

**APPENDIX C**

**KENNEDY/JENKS WASTE SAMPLING RESULTS**



## APPENDIX C

### ANALYTICAL RESULTS FROM KENNEDY/JENKS WASTE SAMPLING

Sample No.	#1	#2	#3	#4	#6	#7	#8	#9	#10
Location:	Residue on outside of tank #1	Residue on inside of tank #2	Residue on inside of tank #3	Residue from hopper funnel	Floor dust from potash storage	Residue from tank #7	Residue from tank #8	Residue from tank #9	Water in tank #10
Media:	Residue	Residue	Residue	Residue	Dust	Residue	Residue	Residue	Water
<b>Metals (mg/kg)</b>									
Aluminum	--	--	--	--	--	--	--	--	--
Antimony	--	--	--	--	--	--	8.5	--	--
Arsenic	11	--	--	--	14	--	--	--	--
Barium	38	82	19	110	44	34	130	72	--
Beryllium	1.9	--	--	0.7	0.8	--	4.6	0.5	0.099
Boron	--	--	--	--	--	--	--	--	--
Cadmium	3.2	0.65	--	0.85	11	--	12	0.5	1.6
Calcium	--	--	--	--	--	--	--	--	--
Chromium (total)	610	9	7.8	280	130	32	1,000	130	16
Chromium (hexavalent)	--	--	--	--	--	--	--	--	--
Cobalt	--	--	--	--	13	--	4	--	0.19
Copper	35	--	--	15	68	--	17	3.4	0.62
Iron	--	--	--	--	--	--	--	--	--
Lead	160	1,300	11	66	300	11	54	29	1.1
Magnesium	--	--	--	--	--	--	--	--	--
Manganese	--	--	--	--	--	--	--	--	--
Mercury	--	--	2.4	--	--	0.12	--	--	--
Molybdenum	14	--	--	--	--	--	--	--	--
Nickel	4.7	--	--	6.5	31	--	44	--	2.5
Selenium	4.2	3.4	--	10	18	4.6	9.2	4	--
Silica	--	--	--	--	--	--	--	--	--
Silver	--	--	--	--	--	--	--	--	--
Sodium	--	--	--	--	--	--	--	--	--
Strontium	--	--	--	--	--	--	--	--	--
Thallium	5.4	--	--	--	--	--	--	--	1.3
Tin	--	--	--	--	--	--	--	--	--
Titanium	--	--	--	--	--	--	--	--	--
Vanadium	310	--	--	22	87	--	200	6.6	2.1
Zinc	180	22	5.2	170	470	13	380	27	16
Zirconium	--	--	--	--	--	--	--	--	--

Source: Kennedy/Jenks (1985)

Notes:

-- = not detected

.. = not analyzed

## APPENDIX C

### ANALYTICAL RESULTS FROM KENNEDY/JENKS WASTE SAMPLING

Sample No.:	#11	#12	#13	#14	#15	#16	#17	#18
Location:	Residue from inside of tank #11	Dust from electric control room	Pellets from shop floor	Residue from conveyor belt rock bin	Water from inside tank #7	Black powder from bag	White powder from bag	Brown powder from bag
Media:	Residue	Dust	Pellets	Residue	Water	Powder	Powder	Powder
<b>Metals (mg/kg)</b>								
Aluminum	..	..	5,100	..	..	79	270,000	190,000
Antimony	7	..	..	..	..	..	..	..
Arsenic	..	42	..	14	..	..	..	..
Barium	150	8.2	55	170	0.19	7.2	36	62
Beryllium	3.9	1.9	..	2.5	..	..	..	..
Boron	..	..	72	..	..	..	..	..
Cadmium	4.2	49	..	50	0.12	..	..	93
Calcium	..	..	14,000	..	..	140	36,000	71,000
Chromium (total)	800	220	110	250	5	10	170	270
Chromium (hexavalent)	..	..	..	..	..	..	..	..
Cobalt	3	3.8	660	..	0.12	1.8	..	14
Copper	14	87	62	31	1.5	0.8	16	48
Iron	..	..	13,000	..	..	250	8,800	21,000
Lead	22	210	570	35	0.7	1.4	..	190
Magnesium	..	..	1,900	..	..	30	..	4200
Manganese	..	..	150	..	..	2.3	1,200	120
Mercury	..	0.53	..	..	..	..	..	..
Molybdenum	..	..	..	..	..	..	..	..
Nickel	24	30	42	28	1.3	59	16	280
Selenium	7.3	11	..	20	..	..	..	..
Silica	..	..	PC	..	..	PC	30,000	400,000
Silver	..	..	..	3	..	..	..	..
Sodium	..	..	2,800	..	..	73	730	..
Strontium	..	..	26	..	..	1.7	42	340
Thallium	..	..	..	23	..	..	..	..
Tin	..	..	140	..	..	..	..	..
Titanium	..	..	690	..	..	9	5,100	7,500
Vanadium	44	190	..	270	1.4	28	200	170
Zinc	280	910	..	570	22	..	..	..
Zirconium	..	..	110	..	..	2.6	74	520

Source: Kennedy/Jenks (1985)

Notes:

-- = not detected

.. = not analyzed

**APPENDIX C**  
**ANALYTICAL RESULTS FROM KENNEDY/JENKS WASTE SAMPLING**

Sample No.	#19	#20	#21	#22	#23	None	None	None
Location:	Residue from floor of bagger bldg.	Residue from ramp to bagger bldg.	Hallway bulk storage	Residue from under pellet plant	Hallway bulk storage	Sulfuric acid tank #1	Sulfuric acid tank #2	Tank lining brick
Media:	Residue	Residue	Unknown	Residue	Unknown	Liquid	Liquid	Unknown
<b>Metals (mg/kg)</b>								
Aluminum	--	--	--	--	--	--	--	--
Antimony	--	--	--	--	--	--	--	--
Arsenic	14	6.3	13	32	24	--	--	--
Barium	13	40	77	27	60	--	--	--
Beryllium	0.65	0.64	1	1.7	0.68	--	--	--
Boron	--	--	--	--	--	--	--	--
Cadmium	9.2	4.5	12	10	10	2.2	--	--
Calcium	--	--	--	--	--	--	--	--
Chromium (total)	180	120	180	200	220	2.3	--	50
Chromium (hexavalent)	--	--	--	--	--	--	--	--
Cobalt	8.6	--	5.6	--	33	--	--	--
Copper	230	22	7.4	18	390	--	--	--
Iron	--	--	--	--	--	--	--	--
Lead	180	68	250	74	370	--	--	--
Magnesium	--	--	--	--	--	--	--	--
Manganese	--	--	--	--	--	--	--	--
Mercury	--	--	--	--	0.81	--	--	--
Molybdenum	--	--	--	--	--	--	--	--
Nickel	35	8.4	20	14	87	0.25	--	--
Selenium	9	7.2	15	6.2	--	--	--	--
Silica	--	--	--	--	--	--	--	--
Silver	--	--	--	--	4.8	--	--	--
Sodium	--	--	--	--	--	--	--	--
Strontium	--	--	--	--	--	--	--	--
Thallium	--	--	--	10	--	--	--	--
Tin	--	--	--	--	--	--	--	--
Titanium	--	--	--	--	--	--	--	--
Vanadium	36	42	76	200	43	--	--	--
Zinc	980	350	650	500	1,100	0.71	0.12	--
Zirconium	--	--	--	--	--	--	--	--

Source: Kennedy/Jenks (1985)

Notes:

-- = not detected

. = not analyzed



**APPENDIX D**

**HERZOG & ASSOCIATES ANALYTICAL RESULTS**



San Luis Obispo, CA • Goleta, CA • Benicia, CA • Camarillo, CA • Newport Beach, CA • Valparaiso, IN

Benicia Division  
6006 Egret Court, Benicia, California 94510(707) 747-2757  
FAX (707) 747-2765CLIENT: Dave Peterson  
Herzog Associates, Inc.  
1318 Redwood Way, Suite 200  
Petaluma, CA 94954Lab Number : ED-0124-2  
Project : 15630.1-0-7 Contra Costa  
Water District  
Analyzed : 03/16/92  
Analyzed by: AZ  
Method : As Listed

## REPORT OF ANALYTICAL RESULTS

Page 1 of 1

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE RECEIVED		
B-29/5	Soil	Dennis Parker	03/10/92	03/10/92	
CONSTITUENT		(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
TOTAL PETROLEUM HYDROCARBONS					1,2
Total Petroleum Hydrocarbons (Gasoline)			0.5	ND	
Total Petroleum Hydrocarbons (Diesel 2)			0.5	ND	
Percent Surrogate Recovery				93.	

Benicia Division Lab Certifications: Caelap #1719; L.A.Co.CSD#10185

\*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

(1) EXTRACTED by EPA 5030 (purge-and-trap)

(2) ANALYZED by CAL DHS DRAFT TPH (modified) and EPA 8260 (GC/MS)

03/16/92  
INCOS 50-387  
MH/trk/htc  
EDC16IIRespectfully submitted,  
COAST-TO-COAST ANALYTICAL SERVICES, INC.Mary Havlicek, Ph.D.  
President

San Luis Obispo, CA • Goleta, CA • Benicia, CA • Camarillo, CA • Newport Beach, CA • Valparaiso, IN

San Luis Obispo Division  
141 Suburban Road, San Luis Obispo, California 93401  
(805) 543-2553  
FAX (805) 543-2685CLIENT: Dave Peterson  
Herzog Associates, Inc.  
1318 Redwood Way, Suite 200  
Petaluma, CA 94954Lab Number : BD-0124-2  
Project : 15630.1-0-7 Contra Costa  
Water District

## REPORT OF ANALYTICAL RESULTS

Page 1 of 1

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY		SAMPLED DATE RECEIVED		
B-29 5	Soil	Dennis Parker		03/10/92	03/10/92	
CONSTITUENT	*PQL	RESULT	UNITS	METHOD	ANALYZED	BY NOTES
Electrical Conductance	1.	80.	umhos/cm	EPA 9050	03/11/92	CM 1
pH	0.1	8.2	Units	EPA 9045	03/11/92	CM
CHLORIDE ANALYSIS						2
Chloride	10.	10.	mg/Kg	EPA 300.0	03/17/92	MH
SULFATE ANALYSIS						
Sulfate	10.	70.	mg/Kg	EPA 300.0	03/17/92	MH

Lab Certifications: CAELAP#1598, NYELAP#11177, UTELAP#E-142, A2LA#0136-01, L.A.Co.CSD#10187.

\*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

(2) Sample Preparation on 03/16/92 by YY

(1) Determined in deionized water.

03/26/92

MH/oro/yy

Respectfully submitted,  
COAST-TO-COAST ANALYTICAL SERVICES, INC.  
Mary Havlicek, Ph.D.  
President

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CLIENT: Dave Peterson  
Herzog Associates, Inc.  
1318 Redwood Way, Suite 200  
Petaluma, CA 94954

Lab Number : BD-0124-11  
Project : 15630.1-0-7 Contra Costa  
Water District

REPORT OF ANALYTICAL RESULTS

Page 1 of 1

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY		SAMPLED DATE RECEIVED			
B-30 2.5	Soil	Dennis Parker		03/10/92	03/10/92		
CONSTITUENT	*PQL	RESULT	UNITS METHOD	ANALYZED	BY	NOTES	
Antimony, Total (123-45-6789)	0.5	ND	mg/Kg EPA 7041	03/22/92	BC	1	
Arsenic, Total (123-45-6789)	0.5	3.7	mg/Kg EPA 7060	03/24/92	AS	1	
Lead, Total (123-45-6789)	1.	31.	mg/Kg EPA 7420	03/16/92	JW	1	
Mercury, Total (123-45-6789)	0.002	0.57	mg/Kg EPA 7471	03/18/92	JW	2	
Molybdenum, Total (123-45-6789)	5.	ND.	mg/Kg EPA 7480	03/20/92	BC	1	
Selenium, Total (123-45-6789)	0.5	ND	mg/Kg EPA 7740	03/20/92	AS	1	
Silver, Total (123-45-6789)	0.1	1.2	mg/Kg EPA 7760	03/16/92	AS	1	
Thallium, Total (123-45-6789)	3.	ND	mg/Kg EPA 7840	03/20/92	BC	1	
<b>CAM METALS BY ICP</b>							
Barium, Total	0.5	63.	mg/Kg EPA 6010	03/23/92	AS		
Beryllium, Total	0.5	ND	mg/Kg EPA 6010	03/23/92	AS		
Cadmium, Total	3.	ND	mg/Kg EPA 6010	03/23/92	AS		
Chromium, Total	3.	20.	mg/Kg EPA 6010	03/23/92	AS		
Cobalt, Total	3.	10.	mg/Kg EPA 6010	03/23/92	AS		
Copper, Total	3.	15.	mg/Kg EPA 6010	03/23/92	AS		
Nickel, Total	3.	24.	mg/Kg EPA 6010	03/23/92	AS		
Vanadium, Total	1.	25.	mg/Kg EPA 6010	03/23/92	AS		
Zinc, Total	3.	79.	mg/Kg EPA 6010	03/23/92	AS		
Chromium, Hexavalent	50	ND	mg/Kg CALC	03/23/92	MH		

Lab Certifications: CAELAP#1598, NYELAP#11177, UTELAP#E-142, A2LA#0136-01, L.A.Co.CSD#10187.

\*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

(1) Sample Preparation on 03/12/92 by JP8 using EPA 3050

(2) Sample Preparation on 03/12/92 by JPB

03/26/92

MH/oro/mdh

Respectfully submitted,  
COAST-TO-COAST ANALYTICAL SERVICES, INC.

*Mary Havlicek*  
Mary Havlicek, Ph.D.  
President



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CLIENT: Dave Peterson  
Herzog Associates, Inc.  
1318 Redwood Way, Suite 200  
Petaluma, CA 94954

Lab Number : BD-0124-3  
Project : 15630.1-0-7 Contra Costa  
Water District  
Analyzed : 03/16/92  
Analyzed by: AZ  
Method : As Listed

REPORT OF ANALYTICAL RESULTS

Page 1 of 1

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE RECEIVED		
B-30 5	Soil	Dennis Parker	03/10/92	03/10/92	
CONSTITUENT		(CAS RN)	*PQL mg/Kg	RESULT mg/Kg	NOTE
TOTAL PETROLEUM HYDROCARBONS					1,2
Total Petroleum Hydrocarbons (Gasoline)			0.5	ND	
Total Petroleum Hydrocarbons (Diesel 2)			0.5	ND	
Percent Surrogate Recovery				99.	

Benicia Division Lab Certifications: CAELAP #1719; L.A.Co.CSD#10185

\*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

(1) EXTRACTED by EPA 5030 (purge-and-trap)

(2) ANALYZED by CAL DHS DRAFT TPH (modified) and EPA 8260 (GC/MS)

03/18/92  
INCOS 40-387  
MH/trk/htc  
EDC16II

Respectfully submitted,  
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek, Ph.D.  
President



Air, Water & Hazardous Waste Sampling, Analysis & Consultation  
Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories

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CLIENT: Dave Peterson  
Herzog Associates, Inc.  
1318 Redwood Way, Suite 200  
Petaluma, CA 94954

Lab Number : BD-0124-3  
Project : 15630.1-0-7 Contra Costa  
Water District

REPORT OF ANALYTICAL RESULTS

Page 1 of 1

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY		SAMPLED DATE RECEIVED		
CONSTITUENT	*PQL	RESULT	UNITS	METHOD	ANALYZED	BY NOTES
Electrical Conductance	1.	180.	umhos/cm	EPA 9050	03/11/92	CM 1
pH	0.1	9.0	Units	EPA 9045	03/11/92	CM
CHLORIDE ANALYSIS						2
Chloride	10.	10.	mg/Kg	EPA 300.0	03/17/92	MH
SULFATE ANALYSIS						
Sulfate	10.	120.	mg/Kg	EPA 300.0	03/17/92	MH

Lab Certifications: CAELAP#1598, NYELAP#11177, UTELAP#E-142, A2LA#0136-01, L.A.Co.CSD#10187.

\*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

(2) Sample Preparation on 03/16/92 by YY

(1) Determined in deionized water.

03/26/92

MH/oro/yy

Respectfully submitted,  
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Mary Havlicek, Ph.D.  
President



**APPENDIX E**

**GEOSYNTEK CONSULTANTS ANALYTICAL RESULTS**



## GEOSYNTEC CONSULTANTS

SAMPLE ID: GS-1/0.5-1.5  
 AEN LAB NO: 9612090-01  
 AEN WORK ORDER: 9612090  
 CLIENT PROJ. ID: CCWD-BAY POINT

DATE SAMPLED: 12/06/96  
 DATE RECEIVED: 12/06/96  
 REPORT DATE: 12/27/96

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
TPH as Gas in Soil	5030 GC-FID	ND	0.2 mg/kg		12/10/96
#Extraction for TPH	EPA 3550	-		Extrn Date	12/13/96
TPH as Diesel	GC-FID	48 *	1 mg/kg		12/16/96
#Digestion, Metals by GFAA	EPA 3050	-		Prep Date	12/13/96
#Digestion, Metals AA/ICP	EPA 3050	-		Prep Date	12/13/96
Volatile Organic Compounds	EPA 8240				
Acetone	67-64-1	ND	100 ug/kg		12/15/96
Benzene	71-43-2	ND	5 ug/kg		12/15/96
Bromodichloromethane	75-27-4	ND	5 ug/kg		12/15/96
Bromoform	75-25-2	ND	5 ug/kg		12/15/96
Bromomethane	74-83-9	ND	10 ug/kg		12/15/96
2-Butanone	78-93-3	ND	100 ug/kg		12/15/96
Carbon Disulfide	75-15-0	ND	10 ug/kg		12/15/96
Carbon Tetrachloride	56-23-5	ND	5 ug/kg		12/15/96
Chlorobenzene	108-90-7	ND	5 ug/kg		12/15/96
Chloroethane	75-00-3	ND	10 ug/kg		12/15/96
2-Chloroethyl Vinyl Ether	110-75-8	ND	10 ug/kg		12/15/96
Chloroform	67-66-3	ND	5 ug/kg		12/15/96
Chloromethane	74-87-3	ND	10 ug/kg		12/15/96
Dibromochloromethane	124-48-1	ND	5 ug/kg		12/15/96
1,1-Dichloroethane	75-43-3	ND	5 ug/kg		12/15/96
1,2-Dichloroethane	107-06-2	ND	5 ug/kg		12/15/96
1,1-Dichloroethene	75-35-4	ND	5 ug/kg		12/15/96
cis-1,2-Dichloroethene	156-59-2	ND	5 ug/kg		12/15/96
trans-1,2-Dichloroethene	156-60-5	ND	5 ug/kg		12/15/96
1,2-Dichloropropane	78-87-5	ND	5 ug/kg		12/15/96
cis-1,3-Dichloropropene	10061-01-5	ND	5 ug/kg		12/15/96
trans-1,3-Dichloropropene	10061-02-6	ND	5 ug/kg		12/15/96
Ethylbenzene	100-41-4	ND	5 ug/kg		12/15/96
2-Hexanone	591-78-6	ND	50 ug/kg		12/15/96
Methylene Chloride	75-09-2	ND	20 ug/kg		12/15/96
4-Methyl-2-pentanone	108-10-1	ND	50 ug/kg		12/15/96
Styrene	100-42-5	ND	5 ug/kg		12/15/96
1,1,2,2-Tetrachloroethane	79-34-5	ND	5 ug/kg		12/15/96
Tetrachloroethene	127-18-4	ND	5 ug/kg		12/15/96
Toluene	108-88-3	ND	5 ug/kg		12/15/96
1,1,1-Trichloroethane	71-55-6	ND	5 ug/kg		12/15/96

## GEOSYNTEC CONSULTANTS

SAMPLE ID: GS-1/0.5-1.5  
 AEN LAB NO: 9612090-01  
 AEN WORK ORDER: 9612090  
 CLIENT PROJ. ID: CCWD-BAY POINT

DATE SAMPLED: 12/06/96  
 DATE RECEIVED: 12/06/96  
 REPORT DATE: 12/27/96

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
1,1,2-Trichloroethane	79-00-5	ND	5 ug/kg		12/15/96
Trichloroethene	79-01-6	ND	5 ug/kg		12/15/96
Vinyl Acetate	108-05-4	ND	50 ug/kg		12/15/96
Vinyl Chloride	75-01-4	ND	10 ug/kg		12/15/96
Xylenes Total	1330-20-7	ND	10 ug/kg		12/15/96
Homogenization of sample		-		Prep Date	12/13/96
#Extraction for Pest/PCBs	EPA 3550	-		Extrn Date	12/13/96
Pesticides & PCBs	EPA 8080				
Aldrin	309-00-2	ND	5 ug/Kg		12/15/96
alpha-BHC	319-84-6	ND	5 ug/Kg		12/15/96
beta-BHC	319-85-7	ND	5 ug/Kg		12/15/96
delta-BHC	319-86-8	ND	5 ug/Kg		12/15/96
gamma-BHC (Lindane)	58-89-9	ND	5 ug/Kg		12/15/96
Chlordane	57-74-9	ND	50 ug/Kg		12/15/96
4,4'-DDD	72-54-8	ND	10 ug/Kg		12/15/96
2,4'-DDD	53-19-0	ND	10 ug/Kg		12/15/96
4,4'-DDE	72-55-9	ND	30 ug/Kg		12/15/96
2,4'-DDE	3424-82-6	ND	10 ug/Kg		12/15/96
4,4'-DDT	50-29-3	50 *	10 ug/Kg		12/15/96
2,4'-DDT	789-02-6	ND	10 ug/Kg		12/15/96
Dieldrin	60-57-1	ND	10 ug/Kg		12/15/96
Endosulfan I	959-98-8	ND	5 ug/Kg		12/15/96
Endosulfan II	33212-65-9	ND	50 ug/Kg		12/15/96
Endosulfan Sulfate	1031-07-8	ND	10 ug/Kg		12/15/96
Endrin	72-20-8	ND	10 ug/Kg		12/15/96
Endrin Aldehyde	7421-93-4	ND	10 ug/Kg		12/15/96
Heptachlor	76-44-8	ND	5 ug/Kg		12/15/96
Heptachlor Epoxide	1024-57-3	ND	5 ug/Kg		12/15/96
Methoxychlor	72-43-5	ND	10 ug/Kg		12/15/96
Toxaphene	8001-35-2	ND	50 ug/Kg		12/15/96
Aroclor 1016	12674-11-2	ND	50 ug/Kg		12/15/96
Aroclor 1221	11104-28-2	ND	50 ug/Kg		12/15/96
Aroclor 1232	11141-16-5	ND	50 ug/Kg		12/15/96
Aroclor 1242	53469-21-9	ND	50 ug/Kg		12/15/96
Aroclor 1248	12672-29-6	ND	50 ug/Kg		12/15/96
Aroclor 1254	11097-69-1	ND	50 ug/Kg		12/15/96
Aroclor 1260	11096-82-5	650 *	50 ug/Kg		12/15/96
CCR 17 Metals					
Silver	EPA 6010	27 *	0.1 mg/kg		12/16/96

## GEOSYNTEC CONSULTANTS

SAMPLE ID: GS-1/0.5-1.5  
 AEN LAB NO: 9612090-01  
 AEN WORK ORDER: 9612090  
 CLIENT PROJ. ID: CCWD-BAY POINT

DATE SAMPLED: 12/06/96  
 DATE RECEIVED: 12/06/96  
 REPORT DATE: 12/27/96

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
Arsenic	EPA 7060	94 *	0.5	mg/kg	12/16/96
Barium	EPA 6010	43 *	1	mg/kg	12/16/96
Beryllium	EPA 6010	0.1 *	0.1	mg/kg	12/16/96
Cadmium	EPA 6010	2.8 *	0.2	mg/kg	12/16/96
Cobalt	EPA 6010	2.3 *	0.2	mg/kg	12/16/96
Chromium	EPA 6010	12 *	0.5	mg/kg	12/16/96
Copper	EPA 6010	61 *	0.5	mg/kg	12/16/96
Mercury	EPA 7471	180 *	0.06	mg/kg	12/16/96
Molybdenum	EPA 6010	0.7 *	0.2	mg/kg	12/16/96
Nickel	EPA 6010	5 *	1	mg/kg	12/16/96
Lead	EPA 6010	14,000 *	1	mg/kg	12/16/96
Antimony	EPA 6010	12 *	1	mg/kg	12/16/96
Selenium	EPA 7740	2,600 *	1	mg/kg	12/16/96
Thallium	EPA 6010	16 *	1	mg/kg	12/16/96
Vanadium	EPA 6010	19 *	0.5	mg/kg	12/16/96
Zinc	EPA 6010	80 *	1	mg/kg	12/16/96
#Extraction for BNAs	EPA 3550	-		Extrn Date	12/13/96
Semi-Volatile Organics	EPA 8270				
Acenaphthene	83-32-9	ND	330	ug/kg	12/15/96
Acenaphthylene	208-96-8	ND	330	ug/kg	12/15/96
Anthracene	120-12-7	ND	330	ug/kg	12/15/96
Benzidine	92-87-5	ND	1600	ug/kg	12/15/96
Benzoic Acid	65-85-0	ND	1600	ug/kg	12/15/96
Benzo(a)anthracene	56-55-3	ND	330	ug/kg	12/15/96
Benzo(b)fluoranthene	205-99-2	ND	330	ug/kg	12/15/96
Benzo(k)fluoranthene	207-08-9	ND	330	ug/kg	12/15/96
Benzo(g,h,i)perylene	191-24-2	ND	330	ug/kg	12/15/96
Benzo(a)pyrene	50-32-8	ND	330	ug/kg	12/15/96
Benzyl Alcohol	100-51-6	ND	660	ug/kg	12/15/96
Bis(2-chloroethoxy)methane	111-91-1	ND	330	ug/kg	12/15/96
Bis(2-choroethyl) Ether	111-44-4	ND	330	ug/kg	12/15/96
Bis(2-chloroisopropyl) Ether	108-60-1	ND	330	ug/kg	12/15/96
Bis(2-ethylhexyl) Phthalate	117-81-7	970 *	330	ug/kg	12/15/96
4-Bromophenyl Phenyl Ether	101-55-3	ND	330	ug/kg	12/15/96
Butylbenzyl Phthalate	85-68-7	ND	330	ug/kg	12/15/96
4-Chloroaniline	106-47-8	ND	660	ug/kg	12/15/96
2-Chloronaphthalene	91-58-7	ND	330	ug/kg	12/15/96
4-Chlorophenyl Phenyl Ether	7005-72-3	ND	330	ug/kg	12/15/96
Chrysene	218-01-9	ND	330	ug/kg	12/15/96
Dibenzo(a,h)anthracene	53-70-3	ND	330	ug/kg	12/15/96
Dibenzofuran	132-64-9	ND	330	ug/kg	12/15/96

## GEOSYNTEC CONSULTANTS

SAMPLE ID: GS-1/0.5-1.5  
 AEN LAB NO: 9612090-01  
 AEN WORK ORDER: 9612090  
 CLIENT PROJ. ID: CCWD-BAY POINT

DATE SAMPLED: 12/06/96  
 DATE RECEIVED: 12/06/96  
 REPORT DATE: 12/27/96

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
Di-n-butyl Phthalate	84-74-2	ND	330	ug/kg	12/15/96
1,2-Dichlorobenzene	95-50-1	ND	330	ug/kg	12/15/96
1,3-Dichlorobenzene	541-73-1	ND	330	ug/kg	12/15/96
1,4-Dichlorobenzene	106-46-7	ND	330	ug/kg	12/15/96
3,3'-Dichlorobenzidine	91-94-1	ND	660	ug/kg	12/15/96
Diethyl Phthalate	84-66-2	ND	330	ug/kg	12/15/96
Dimethyl Phthalate	131-11-3	ND	330	ug/kg	12/15/96
2,4-Dinitrotoluene	121-14-2	ND	330	ug/kg	12/15/96
2,6-Dinitrotoluene	606-20-2	ND	330	ug/kg	12/15/96
Di-n-octyl Phthalate	117-84-0	ND	330	ug/kg	12/15/96
Fluoranthene	206-44-0	ND	330	ug/kg	12/15/96
Fluorene	86-73-7	ND	330	ug/kg	12/15/96
Hexachlorobenzene	118-74-1	ND	330	ug/kg	12/15/96
Hexachlorobutadiene	87-68-3	ND	330	ug/kg	12/15/96
Hexachlorocyclopentadiene	77-47-4	ND	330	ug/kg	12/15/96
Hexachloroethane	67-72-1	ND	330	ug/kg	12/15/96
Indeno(1,2,3-cd)pyrene	193-39-5	ND	330	ug/kg	12/15/96
Isophorone	78-59-1	ND	330	ug/kg	12/15/96
2-Methylnaphthalene	91-57-6	ND	330	ug/kg	12/15/96
Naphthalene	91-20-3	ND	330	ug/kg	12/15/96
2-Nitroaniline	88-74-4	ND	1600	ug/kg	12/15/96
3-Nitroaniline	99-09-2	ND	1600	ug/kg	12/15/96
4-Nitroaniline	100-01-6	ND	1600	ug/kg	12/15/96
Nitrobenzene	98-95-3	ND	330	ug/kg	12/15/96
N-Nitrosodiphenylamine	86-30-6	ND	330	ug/kg	12/15/96
N-Nitrosodi-n-propylamine	621-64-7	ND	330	ug/kg	12/15/96
Phenanthrene	85-01-8	350 *	330	ug/kg	12/15/96
Pyrene	129-00-0	ND	330	ug/kg	12/15/96
1,2,4-Trichlorobenzene	120-82-1	ND	330	ug/kg	12/15/96
4-Chloro-3-methylphenol	59-50-7	ND	330	ug/kg	12/15/96
2-Chlorophenol	95-57-8	ND	330	ug/kg	12/15/96
2,4-Dichlorophenol	120-83-2	ND	330	ug/kg	12/15/96
2,4-Dimethylphenol	105-67-9	ND	330	ug/kg	12/15/96
4,6-Dinitro-2-methylphenol	534-52-1	ND	1600	ug/kg	12/15/96
2,4-Dinitrophenol	51-28-5	ND	1600	ug/kg	12/15/96
2-Methylphenol	95-48-7	ND	330	ug/kg	12/15/96
4-Methylphenol	106-44-5	ND	330	ug/kg	12/15/96
2-Nitrophenol	88-75-5	ND	330	ug/kg	12/15/96
4-Nitrophenol	100-02-7	ND	1600	ug/kg	12/15/96
Pentachlorophenol	87-86-5	ND	1600	ug/kg	12/15/96
Phenol	108-95-2	810 *	330	ug/kg	12/15/96
2,4,5-Trichlorophenol	95-95-4	ND	330	ug/kg	12/15/96
2,4,6-Trichlorophenol	88-06-2	ND	330	ug/kg	12/15/96

## GEOSYNTEC CONSULTANTS

SAMPLE ID: GS-1/0.5-1.5  
AEN LAB NO: 9612090.01  
AEN WORK ORDER: 9612090  
CLIENT PROJ. ID: CCWD-BAY POINT

DATE SAMPLED: 12/06/96  
DATE RECEIVED: 12/06/96  
REPORT DATE: 12/27/96

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ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
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RLs elevated for 4,4-DDE & Endosulfan II due to PCB interference. Sample appears to contain a mixture of Aroclor 1254 & 1260, but quantitated as Aroclor 1260.

ND = Not detected at or above the reporting limit

\* = Value at or above reporting limit

## GEOSYNTEC CONSULTANTS

SAMPLE ID: GS-1/4-5  
 AEN LAB NO: 9612090-04  
 AEN WORK ORDER: 9612090  
 CLIENT PROJ. ID: CCWD-BAY POINT

DATE SAMPLED: 12/06/96  
 DATE RECEIVED: 12/06/96  
 REPORT DATE: 12/27/96

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
TPH as Gas in Soil	5030 GC-FID	ND	0.2	mg/kg	12/10/96
#Extraction for TPH	EPA 3550	-		Extrn Date	12/13/96
TPH as Diesel	GC-FID	ND	1	mg/kg	12/16/96
#Digestion, Metals by GFAA	EPA 3050	-		Prep Date	12/13/96
#Digestion, Metals AA/ICP	EPA 3050	-		Prep Date	12/13/96
Volatile Organic Compounds	EPA 8240				
Acetone	67-64-1	ND	100	ug/kg	12/15/96
Benzene	71-43-2	ND	5	ug/kg	12/15/96
Bromodichloromethane	75-27-4	ND	5	ug/kg	12/15/96
Bromoform	75-25-2	ND	5	ug/kg	12/15/96
Bromomethane	74-83-9	ND	10	ug/kg	12/15/96
2-Butanone	78-93-3	ND	100	ug/kg	12/15/96
Carbon Disulfide	75-15-0	ND	10	ug/kg	12/15/96
Carbon Tetrachloride	56-23-5	ND	5	ug/kg	12/15/96
Chlorobenzene	108-90-7	ND	5	ug/kg	12/15/96
Chloroethane	75-00-3	ND	10	ug/kg	12/15/96
2-Chloroethyl Vinyl Ether	110-75-8	ND	10	ug/kg	12/15/96
Chloroform	67-66-3	ND	5	ug/kg	12/15/96
Chloromethane	74-87-3	ND	10	ug/kg	12/15/96
Dibromochloromethane	124-48-1	ND	5	ug/kg	12/15/96
1,1-Dichloroethane	75-43-3	ND	5	ug/kg	12/15/96
1,2-Dichloroethane	107-06-2	ND	5	ug/kg	12/15/96
1,1-Dichloroethene	75-35-4	ND	5	ug/kg	12/15/96
cis-1,2-Dichloroethene	156-59-2	ND	5	ug/kg	12/15/96
trans-1,2-Dichloroethene	156-60-5	ND	5	ug/kg	12/15/96
1,2-Dichloropropane	78-87-5	ND	5	ug/kg	12/15/96
cis-1,3-Dichloropropene	10061-01-5	ND	5	ug/kg	12/15/96
trans-1,3-Dichloropropene	10061-02-6	ND	5	ug/kg	12/15/96
Ethylbenzene	100-41-4	ND	5	ug/kg	12/15/96
2-Hexanone	591-78-6	ND	50	ug/kg	12/15/96
Methylene Chloride	75-09-2	ND	30	ug/kg	12/15/96
4-Methyl-2-pentanone	108-10-1	ND	50	ug/kg	12/15/96
Styrene	100-42-5	ND	5	ug/kg	12/15/96
1,1,2,2-Tetrachloroethane	79-34-5	ND	5	ug/kg	12/15/96
Tetrachloroethene	127-18-4	ND	5	ug/kg	12/15/96
Toluene	108-88-3	ND	5	ug/kg	12/15/96
1,1,1-Trichloroethane	71-55-6	ND	5	ug/kg	12/15/96

## GEOSYNTEC CONSULTANTS

SAMPLE ID: GS-1/4-5  
 AEN LAB NO: 9612090-04  
 AEN WORK ORDER: 9612090  
 CLIENT PROJ. ID: CCWD-BAY POINT

DATE SAMPLED: 12/06/96  
 DATE RECEIVED: 12/06/96  
 REPORT DATE: 12/27/96

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
1,1,2-Trichloroethane	79-00-5	ND	5 ug/kg		12/15/96
Trichloroethene	79-01-6	ND	5 ug/kg		12/15/96
Vinyl Acetate	108-05-4	ND	50 ug/kg		12/15/96
Vinyl Chloride	75-01-4	ND	10 ug/kg		12/15/96
Xylenes Total	1330-20-7	ND	10 ug/kg		12/15/96
Homogenization of sample		-		Prep Date	12/13/96
#Extraction for Pest/PCBs	EPA 3550	-		Extrn Date	12/13/96
Pesticides & PCBs	EPA 8080				
Aldrin	309-00-2	ND	5 ug/Kg		12/15/96
alpha-BHC	319-84-6	ND	5 ug/Kg		12/15/96
beta-BHC	319-85-7	ND	5 ug/Kg		12/15/96
delta-BHC	319-86-8	ND	5 ug/Kg		12/15/96
gamma-BHC (Lindane)	58-89-9	ND	5 ug/Kg		12/15/96
Chlordane	57-74-9	ND	50 ug/Kg		12/15/96
4,4'-DDD	72-54-8	ND	10 ug/Kg		12/15/96
2,4'-DDD	53-19-0	ND	10 ug/Kg		12/15/96
4,4'-DDE	72-55-9	ND	10 ug/Kg		12/15/96
2,4'-DDE	3424-82-6	ND	10 ug/Kg		12/15/96
4,4'-DDT	50-29-3	ND	10 ug/Kg		12/15/96
2,4'-DDT	789-02-6	ND	10 ug/Kg		12/15/96
Dieldrin	60-57-1	ND	10 ug/Kg		12/15/96
Endosulfan I	959-98-8	ND	5 ug/Kg		12/15/96
Endosulfan II	33212-65-9	ND	10 ug/Kg		12/15/96
Endosulfan Sulfate	1031-07-8	ND	10 ug/Kg		12/15/96
Endrin	72-20-8	ND	10 ug/Kg		12/15/96
Endrin Aldehyde	7421-93-4	ND	10 ug/Kg		12/15/96
Heptachlor	76-44-8	ND	5 ug/Kg		12/15/96
Heptachlor Epoxide	1024-57-3	ND	5 ug/Kg		12/15/96
Methoxychlor	72-43-5	ND	10 ug/Kg		12/15/96
Toxaphene	8001-35-2	ND	50 ug/Kg		12/15/96
Aroclor 1016	12674-11-2	ND	50 ug/Kg		12/15/96
Aroclor 1221	11104-28-2	ND	50 ug/Kg		12/15/96
Aroclor 1232	11141-16-5	ND	50 ug/Kg		12/15/96
Aroclor 1242	53469-21-9	ND	50 ug/Kg		12/15/96
Aroclor 1248	12672-29-6	ND	50 ug/Kg		12/15/96
Aroclor 1254	11097-69-1	ND	50 ug/Kg		12/15/96
Aroclor 1260	11096-82-5	ND	50 ug/Kg		12/15/96
CCR 17 Metals					
Silver	EPA 6010	11 *	0.1 mg/kg		12/16/96

## GEOSYNTEC CONSULTANTS

SAMPLE ID: GS-1/4-5  
 AEN LAB NO: 9612090-04  
 AEN WORK ORDER: 9612090  
 CLIENT PROJ. ID: CCWD-BAY POINT

DATE SAMPLED: 12/06/96  
 DATE RECEIVED: 12/06/  
 REPORT DATE: 12/27/96

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
Arsenic	EPA 7060	23 *	0.5 mg/kg		12/16/96
Barium	EPA 6010	76 *	1 mg/kg		12/16/96
Beryllium	EPA 6010	0.3 *	0.1 mg/Kg		12/16/96
Cadmium	EPA 6010	0.4 *	0.2 mg/kg		12/16/96
Cobalt	EPA 6010	7.1 *	0.2 mg/kg		12/16/96
Chromium	EPA 6010	13 *	0.5 mg/Kg		12/16/96
Copper	EPA 6010	16 *	0.5 mg/kg		12/16/96
Mercury	EPA 7471	43 *	0.06 mg/kg		12/16/96
Molybdenum	EPA 6010	ND	0.2 mg/kg		12/16/96
Nickel	EPA 6010	18 *	1 mg/kg		12/16/96
Lead	EPA 6010	13,000 *	1 mg/kg		12/16/96
Antimony	EPA 6010	2 *	1 mg/kg		12/16/96
Selenium	EPA 7740	770 *	1 mg/kg		12/16/96
Thallium	EPA 6010	12 *	1 mg/kg		12/16/96
Vanadium	EPA 6010	20 *	0.5 mg/kg		12/16/96
Zinc	EPA 6010	23 *	1 mg/kg		12/16/96
#Extraction for BNAs	EPA 3550	-		Extrn Date	12/13/96
Semi-Volatile Organics	EPA 8270				
Acenaphthene	83-32-9	ND	330 ug/kg		12/15/96
Acenaphthylene	208-96-8	ND	330 ug/kg		12/15/96
Anthracene	120-12-7	ND	330 ug/kg		12/15/96
Benzidine	92-87-5	ND	1600 ug/kg		12/15/96
Benzoic Acid	65-85-0	ND	1600 ug/kg		12/15/96
Benzo(a)anthracene	56-55-3	ND	330 ug/kg		12/15/96
Benzo(b)fluoranthene	205-99-2	ND	330 ug/kg		12/15/96
Benzo(k)fluoranthene	207-08-9	ND	330 ug/kg		12/15/96
Benzo(g,h,i)perylene	191-24-2	ND	330 ug/kg		12/15/96
Benzo(a)pyrene	50-32-8	ND	330 ug/kg		12/15/96
Benzyl Alcohol	100-51-6	ND	330 ug/kg		12/15/96
Bis(2-chloroethoxy)methane	111-91-1	ND	660 ug/kg		12/15/96
Bis(2-choroethyl) Ether	111-44-4	ND	330 ug/kg		12/15/96
Bis(2-chloroisopropyl) Ether	108-60-1	ND	330 ug/kg		12/15/96
Bis(2-ethylhexyl) Phthalate	117-81-7	ND	330 ug/kg		12/15/96
4-Bromophenyl Phenyl Ether	101-55-3	ND	330 ug/kg		12/15/96
Butylbenzyl Phthalate	85-68-7	ND	330 ug/kg		12/15/96
4-Chloroaniline	106-47-8	ND	660 ug/kg		12/15/96
2-Choronaphthalene	91-58-7	ND	330 ug/kg		12/15/96
4-Chlorophenyl Phenyl Ether	7005-72-3	ND	330 ug/kg		12/15/96
Chrysene	218-01-9	ND	330 ug/kg		12/15/96
Dibenzo(a,h)anthracene	53-70-3	ND	330 ug/kg		12/15/96
Dibenzofuran	132-64-9	ND	330 ug/kg		12/15/96

## GEOSYNTEC CONSULTANTS

SAMPLE ID: GS-1/4-5  
 AEN LAB NO: 9612090-04  
 AEN WORK ORDER: 9612090  
 CLIENT PROJ. ID: CCWD-BAY POINT

DATE SAMPLED: 12/06/96  
 DATE RECEIVED: 12/06/96  
 REPORT DATE: 12/27/96

ANALYTE	METHOD/CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
Di-n-butyl Phthalate	84-74-2	ND	330	ug/kg	12/15/96
1,2-Dichlorobenzene	95-50-1	ND	330	ug/kg	12/15/96
1,3-Dichlorobenzene	541-73-1	ND	330	ug/kg	12/15/96
1,4-Dichlorobenzene	106-46-7	ND	330	ug/kg	12/15/96
3,3'-Dichlorobenzidine	91-94-1	ND	660	ug/kg	12/15/96
Diethyl Phthalate	84-66-2	ND	330	ug/kg	12/15/96
Dimethyl Phthalate	131-11-3	ND	330	ug/kg	12/15/96
2,4-Dinitrotoluene	121-14-2	ND	330	ug/kg	12/15/96
2,6-Dinitrotoluene	606-20-2	ND	330	ug/kg	12/15/96
Di-n-octyl Phthalate	117-84-0	ND	330	ug/kg	12/15/96
Fluoranthene	206-44-0	ND	330	ug/kg	12/15/96
Fluorene	86-73-7	ND	330	ug/kg	12/15/96
Hexachlorobenzene	118-74-1	ND	330	ug/kg	12/15/96
Hexachlorobutadiene	87-68-3	ND	330	ug/kg	12/15/96
Hexachlorocyclopentadiene	77-47-4	ND	330	ug/kg	12/15/96
Hexachloroethane	67-72-1	ND	330	ug/kg	12/15/96
Indeno(1,2,3-cd)pyrene	193-39-5	ND	330	ug/kg	12/15/96
Isophorone	78-59-1	ND	330	ug/kg	12/15/96
2-Methylnaphthalene	91-57-6	ND	330	ug/kg	12/15/96
Naphthalene	91-20-3	ND	330	ug/kg	12/15/96
2-Nitroaniline	88-74-4	ND	1600	ug/kg	12/15/96
3-Nitroaniline	99-09-2	ND	1600	ug/kg	12/15/96
4-Nitroaniline	100-01-6	ND	1600	ug/kg	12/15/96
Nitrobenzene	98-95-3	ND	330	ug/kg	12/15/96
N-Nitrosodiphenylamine	86-30-6	ND	330	ug/kg	12/15/96
N-Nitrosodi-n-propylamine	621-64-7	ND	330	ug/kg	12/15/96
Phenanthrene	85-01-8	ND	330	ug/kg	12/15/96
Pyrene	129-00-0	ND	330	ug/kg	12/15/96
1,2,4-Trichlorobenzene	120-82-1	ND	330	ug/kg	12/15/96
4-Chloro-3-methylphenol	59-50-7	ND	330	ug/kg	12/15/96
2-Chlorophenol	95-57-8	ND	330	ug/kg	12/15/96
2,4-Dichlorophenol	120-83-2	ND	330	ug/kg	12/15/96
2,4-Dimethylphenol	105-67-9	ND	330	ug/kg	12/15/96
4,6-Dinitro-2-methylphenol	534-52-1	ND	1600	ug/kg	12/15/96
2,4-Dinitrophenol	51-28-5	ND	1600	ug/kg	12/15/96
2-Methylphenol	95-48-7	ND	330	ug/kg	12/15/96
4-Methylphenol	106-44-5	ND	330	ug/kg	12/15/96
2-Nitrophenol	88-75-5	ND	330	ug/kg	12/15/96
4-Nitrophenol	100-02-7	ND	1600	ug/kg	12/15/96
Pentachlorophenol	87-86-5	ND	1600	ug/kg	12/15/96
Phenol	108-95-2	670 *	330	ug/kg	12/15/96
2,4,5-Trichlorophenol	95-95-4	ND	330	ug/kg	12/15/96
2,4,6-Trichlorophenol	88-06-2	ND	330	ug/kg	12/15/96

## GEOSYNTEC CONSULTANTS

SAMPLE ID: GS-1/4-5  
AEN LAB NO: 9612090-04  
AEN WORK ORDER: 9612090  
CLIENT PROJ. ID: CCWD-BAY POINT

DATE SAMPLED: 12/06/96  
DATE RECEIVED: 12/06/96  
REPORT DATE: 12/27/96

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
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RL elevated for methylene chloride due to background contamination.

ND = Not detected at or above the reporting limit

\* = Value at or above reporting limit

## GEOSYNTEC CONSULTANTS

SAMPLE ID: GS-2/0.5-1.5  
 AEN LAB NO: 9612090-09  
 AEN WORK ORDER: 9612090  
 CLIENT PROJ. ID: CCWD-BAY POINT

DATE SAMPLED: 12/06/96  
 DATE RECEIVED: 12/06/96  
 REPORT DATE: 12/27/96

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
TPH as Gas in Soil	5030 GC-FID	ND	0.2	mg/kg	12/10/96
#Extraction for TPH	EPA 3550	-		Extrn Date	12/13/96
TPH as Diesel	GC-FID	ND	1	mg/kg	12/16/96
#Digestion, Metals by GFAA	EPA 3050	-		Prep Date	12/13/96
#Digestion, Metals AA/ICP	EPA 3050	-		Prep Date	12/13/96
Volatile Organic Compounds	EPA 8240				
Acetone	67-64-1	ND	100	ug/kg	12/15/96
Benzene	71-43-2	ND	5	ug/kg	12/15/96
Bromodichloromethane	75-27-4	ND	5	ug/kg	12/15/96
Bromoform	75-25-2	ND	5	ug/kg	12/15/96
Bromomethane	74-83-9	ND	10	ug/kg	12/15/96
2-Butanone	78-93-3	ND	100	ug/kg	12/15/96
Carbon Disulfide	75-15-0	ND	10	ug/kg	12/15/96
Carbon Tetrachloride	56-23-5	ND	5	ug/kg	12/15/96
Chlorobenzene	108-90-7	ND	5	ug/kg	12/15/96
Chloroethane	75-00-3	ND	10	ug/kg	12/15/96
2-Chloroethyl Vinyl Ether	110-75-8	ND	10	ug/kg	12/15/96
Chloroform	67-66-3	ND	5	ug/kg	12/15/96
Chloromethane	74-87-3	ND	10	ug/kg	12/15/96
Dibromochloromethane	124-48-1	ND	5	ug/kg	12/15/96
1,1-Dichloroethane	75-43-3	ND	5	ug/kg	12/15/96
1,2-Dichloroethane	107-06-2	ND	5	ug/kg	12/15/96
1,1-Dichloroethene	75-35-4	ND	5	ug/kg	12/15/96
cis-1,2-Dichloroethene	156-59-2	ND	5	ug/kg	12/15/96
trans-1,2-Dichloroethene	156-60-5	ND	5	ug/kg	12/15/96
1,2-Dichloropropane	78-87-5	ND	5	ug/kg	12/15/96
cis-1,3-Dichloropropene	10061-01-5	ND	5	ug/kg	12/15/96
trans-1,3-Dichloropropene	10061-02-6	ND	5	ug/kg	12/15/96
Ethylbenzene	100-41-4	ND	5	ug/kg	12/15/96
2-Hexanone	591-78-6	ND	50	ug/kg	12/15/96
Methylene Chloride	75-09-2	ND	20	ug/kg	12/15/96
4-Methyl-2-pentanone	108-10-1	ND	50	ug/kg	12/15/96
Styrene	100-42-5	ND	5	ug/kg	12/15/96
1,1,2,2-Tetrachloroethane	79-34-5	ND	5	ug/kg	12/15/96
Tetrachloroethene	127-18-4	ND	5	ug/kg	12/15/96
Toluene	108-88-3	ND	5	ug/kg	12/15/96
1,1,1-Trichloroethane	71-55-6	ND	5	ug/kg	12/15/96

## GEOSYNTEC CONSULTANTS

SAMPLE ID: GS-2/0.5-1.5  
 AEN LAB NO: 9612090-09  
 AEN WORK ORDER: 9612090  
 CLIENT PROJ. ID: CCWD-BAY POINT

DATE SAMPLED: 12/06/96  
 DATE RECEIVED: 12/06/  
 REPORT DATE: 12/27/

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
1,1,2-Trichloroethane	79-00-5	ND	5 ug/kg		12/15/96
Trichloroethene	79-01-6	ND	5 ug/kg		12/15/96
Vinyl Acetate	108-05-4	ND	50 ug/kg		12/15/96
Vinyl Chloride	75-01-4	ND	10 ug/kg		12/15/96
Xylenes Total	1330-20-7	ND	10 ug/kg		12/15/96
Homogenization of sample		-		Prep Date	12/13/96
#Extraction for Pest/PCBs	EPA 3550	-		Extrn Date	12/13/96
Pesticides & PCBs	EPA 8080				
Aldrin	309-00-2	ND	5 ug/Kg		12/15/96
alpha-BHC	319-84-6	ND	5 ug/Kg		12/15/96
beta-BHC	319-85-7	ND	5 ug/Kg		12/15/96
delta-BHC	319-86-8	ND	5 ug/Kg		12/15/96
gamma-BHC (Lindane)	58-89-9	ND	5 ug/Kg		12/15/96
Chlordane	57-74-9	ND	50 ug/Kg		12/15/96
4,4'-DDD	72-54-8	ND	10 ug/Kg		12/15/96
2,4'-DDD	53-19-0	ND	10 ug/Kg		12/15/96
4,4'-DDE	72-55-9	ND	10 ug/Kg		12/15/96
2,4'-DDE	3424-82-6	ND	10 ug/Kg		12/15/96
4,4'-DDT	50-29-3	ND	10 ug/Kg		12/15/96
2,4'-DDT	789-02-6	ND	10 ug/Kg		12/15/96
Dieldrin	60-57-1	ND	10 ug/Kg		12/15/96
Endosulfan I	959-98-8	ND	5 ug/Kg		12/15/96
Endosulfan II	33212-65-9	ND	10 ug/Kg		12/15/96
Endosulfan Sulfate	1031-07-8	ND	10 ug/Kg		12/15/96
Endrin	72-20-8	ND	10 ug/Kg		12/15/96
Endrin Aldehyde	7421-93-4	ND	10 ug/Kg		12/15/96
Heptachlor	76-44-8	ND	5 ug/Kg		12/15/96
Heptachlor Epoxide	1024-57-3	ND	5 ug/Kg		12/15/96
Methoxychlor	72-43-5	ND	10 ug/Kg		12/15/96
Toxaphene	8001-35-2	ND	50 ug/Kg		12/15/96
Aroclor 1016	12674-11-2	ND	50 ug/Kg		12/15/96
Aroclor 1221	11104-28-2	ND	50 ug/Kg		12/15/96
Aroclor 1232	11141-16-5	ND	50 ug/Kg		12/15/96
Aroclor 1242	53469-21-9	ND	50 ug/Kg		12/15/96
Aroclor 1248	12672-29-6	ND	50 ug/Kg		12/15/96
Aroclor 1254	11097-69-1	ND	50 ug/Kg		12/15/96
Aroclor 1260	11096-82-5	ND	50 ug/Kg		12/15/96
CCR 17 Metals					
Silver	EPA 6010	0.2 *	0.1 mg/kg		12/16/

## GEOSYNTEC CONSULTANTS

SAMPLE ID: GS-2/0.5-1.5  
 AEN LAB NO: 9612090-09  
 AEN WORK ORDER: 9612090  
 CLIENT PROJ. ID: CCWD-BAY POINT

DATE SAMPLED: 12/06/96  
 DATE RECEIVED: 12/06/96  
 REPORT DATE: 12/27/96

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
Arsenic	EPA 7060	2.8 *	0.5 mg/kg		12/16/96
Barium	EPA 6010	140 *	1 mg/kg		12/16/96
Beryllium	EPA 6010	0.3 *	0.1 mg/kg		12/16/96
Cadmium	EPA 6010	0.4 *	0.2 mg/kg		12/16/96
Cobalt	EPA 6010	8.9 *	0.2 mg/kg		12/16/96
Chromium	EPA 6010	22 *	0.5 mg/kg		12/16/96
Copper	EPA 6010	27 *	0.5 mg/kg		12/16/96
Mercury	EPA 7471	0.37 *	0.06 mg/kg		12/16/96
Molybdenum	EPA 6010	ND	0.2 mg/kg		12/16/96
Nickel	EPA 6010	16 *	1 mg/kg		12/16/96
Lead	EPA 6010	18 *	1 mg/kg		12/16/96
Antimony	EPA 6010	ND	1 mg/kg		12/16/96
Selenium	EPA 7740	5 *	1 mg/kg		12/16/96
Thallium	EPA 6010	4 *	1 mg/kg		12/16/96
Vanadium	EPA 6010	31 *	0.5 mg/kg		12/16/96
Zinc	EPA 6010	87 *	1 mg/kg		12/16/96
#Extraction for BNAs	EPA 3550	-		Extrn Date	12/13/96
Semi-Volatile Organics	EPA 8270				
Acenaphthene	83-32-9	ND	330 ug/kg		12/15/96
Acenaphthylene	208-96-8	ND	330 ug/kg		12/15/96
Anthracene	120-12-7	ND	330 ug/kg		12/15/96
Benzidine	92-87-5	ND	1600 ug/kg		12/15/96
Benzoic Acid	65-85-0	ND	1600 ug/kg		12/15/96
Benzo(a)anthracene	56-55-3	ND	330 ug/kg		12/15/96
Benzo(b)fluoranthene	205-99-2	ND	330 ug/kg		12/15/96
Benzo(k)fluoranthene	207-08-9	ND	330 ug/kg		12/15/96
Benzo(g,h,i)perylene	191-24-2	ND	330 ug/kg		12/15/96
Benzo(a)pyrene	50-32-8	ND	330 ug/kg		12/15/96
Benzyl Alcohol	100-51-6	ND	660 ug/kg		12/15/96
Bis(2-chloroethoxy)methane	111-91-1	ND	330 ug/kg		12/15/96
Bis(2-choroethyl) Ether	111-44-4	ND	330 ug/kg		12/15/96
Bis(2-chloroisopropyl) Ether	108-60-1	ND	330 ug/kg		12/15/96
Bis(2-ethylhexyl) Phthalate	117-81-7	ND	330 ug/kg		12/15/96
4-Bromophenyl Phenyl Ether	101-55-3	ND	330 ug/kg		12/15/96
Butylbenzyl Phthalate	85-68-7	ND	330 ug/kg		12/15/96
4-Chloroaniline	106-47-8	ND	660 ug/kg		12/15/96
2-Chloronaphthalene	91-58-7	ND	330 ug/kg		12/15/96
4-Chlorophenyl Phenyl Ether	7005-72-3	ND	330 ug/kg		12/15/96
Chrysene	218-01-9	ND	330 ug/kg		12/15/96
Dibenzo(a,h)anthracene	53-70-3	ND	330 ug/kg		12/15/96
Dibenzofuran	132-64-9	ND	330 ug/kg		12/15/96

## GEOSYNTEC CONSULTANTS

SAMPLE ID: GS-2/0.5-1.5  
 AEN LAB NO: 9612090-09  
 AEN WORK ORDER: 9612090  
 CLIENT PROJ. ID: CCWD-BAY POINT

DATE SAMPLED: 12/06/96  
 DATE RECEIVED: 12/06/9  
 REPORT DATE: 12/27/96

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
Di-n-butyl Phthalate	84-74-2	ND	330	ug/kg	12/15/96
1,2-Dichlorobenzene	95-50-1	ND	330	ug/kg	12/15/96
1,3-Dichlorobenzene	541-73-1	ND	330	ug/kg	12/15/96
1,4-Dichlorobenzene	106-46-7	ND	330	ug/kg	12/15/96
3,3'-Dichlorobenzidine	91-94-1	ND	660	ug/kg	12/15/96
Diethyl Phthalate	84-66-2	ND	330	ug/kg	12/15/96
Dimethyl Phthalate	131-11-3	ND	330	ug/kg	12/15/96
2,4-Dinitrotoluene	121-14-2	ND	330	ug/kg	12/15/96
2,6-Dinitrotoluene	606-20-2	ND	330	ug/kg	12/15/96
Di-n-octyl Phthalate	117-84-0	ND	330	ug/kg	12/15/96
Fluoranthene	206-44-0	ND	330	ug/kg	12/15/96
Fluorene	86-73-7	ND	330	ug/kg	12/15/96
Hexachlorobenzene	118-74-1	ND	330	ug/kg	12/15/96
Hexachlorobutadiene	87-68-3	ND	330	ug/kg	12/15/96
Hexachlorocyclopentadiene	77-47-4	ND	330	ug/kg	12/15/96
Hexachloroethane	67-72-1	ND	330	ug/kg	12/15/96
Indeno(1,2,3-cd)pyrene	193-39-5	ND	330	ug/kg	12/15/96
Isophorone	78-59-1	ND	330	ug/kg	12/15/96
2-Methylnaphthalene	91-57-6	ND	330	ug/kg	12/15/96
Naphthalene	91-20-3	ND	330	ug/kg	12/15/96
2-Nitroaniline	88-74-4	ND	1600	ug/kg	12/15/96
3-Nitroaniline	99-09-2	ND	1600	ug/kg	12/15/96
4-Nitroaniline	100-01-6	ND	1600	ug/kg	12/15/96
Nitrobenzene	98-95-3	ND	330	ug/kg	12/15/96
N-Nitrosodiphenylamine	86-30-6	ND	330	ug/kg	12/15/96
N-Nitrosodi-n-propylamine	621-64-7	ND	330	ug/kg	12/15/96
Phenanthrene	85-01-8	ND	330	ug/kg	12/15/96
Pyrene	129-00-0	ND	330	ug/kg	12/15/96
1,2,4-Trichlorobenzene	120-82-1	ND	330	ug/kg	12/15/96
4-Chloro-3-methylphenol	59-50-7	ND	330	ug/kg	12/15/96
2-Chlorophenol	95-57-8	ND	330	ug/kg	12/15/96
2,4-Dichlorophenol	120-83-2	ND	330	ug/kg	12/15/96
2,4-Dimethylphenol	105-67-9	ND	330	ug/kg	12/15/96
4,6-Dinitro-2-methylphenol	534-52-1	ND	1600	ug/kg	12/15/96
2,4-Dinitrophenol	51-28-5	ND	1600	ug/kg	12/15/96
2-Methylphenol	95-48-7	ND	330	ug/kg	12/15/96
4-Methylphenol	106-44-5	ND	330	ug/kg	12/15/96
2-Nitrophenol	88-75-5	ND	330	ug/kg	12/15/96
4-Nitrophenol	100-02-7	ND	1600	ug/kg	12/15/96
Pentachlorophenol	87-86-5	ND	1600	ug/kg	12/15/96
Pheno1	108-95-2	ND	330	ug/kg	12/15/96
2,4,5-Trichlorophenol	95-95-4	ND	330	ug/kg	12/15/96
2,4,6-Trichlorophenol	88-06-2	ND	330	ug/kg	12/15/96

## GEOSYNTEC CONSULTANTS

SAMPLE ID: GS-2/0.5-1.5  
AEN LAB NO: 9612090-09  
AEN WORK ORDER: 9612090  
CLIENT PROJ. ID: CCWD-BAY POINT

DATE SAMPLED: 12/06/96  
DATE RECEIVED: 12/06/96  
REPORT DATE: 12/27/96

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED

ND = Not detected at or above the reporting limit

\* = Value at or above reporting limit

## GEOSYNTEC CONSULTANTS

SAMPLE ID: GS-2/2.5-3.5  
 AEN LAB NO: 9612090-11  
 AEN WORK ORDER: 9612090  
 CLIENT PROJ. ID: CCWD-BAY POINT

DATE SAMPLED: 12/06/96  
 DATE RECEIVED: 12/06/96  
 REPORT DATE: 12/27/96

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
TPH as Gas in Soil	5030 GC-FID	ND	0.2	mg/kg	12/10/96
#Extraction for TPH	EPA 3550	-		Extrn Date	12/13/96
TPH as Diesel	GC-FID	ND	1	mg/kg	12/16/96
#Digestion, Metals by GFAA	EPA 3050	-		Prep Date	12/13/96
#Digestion, Metals AA/ICP	EPA 3050	-		Prep Date	12/13/96
Volatile Organic Compounds	EPA 8240				
Acetone	67-64-1	ND	100	ug/kg	12/15/96
Benzene	71-43-2	ND	5	ug/kg	12/15/96
Bromodichloromethane	75-27-4	ND	5	ug/kg	12/15/96
Bromoform	75-25-2	ND	5	ug/kg	12/15/96
Bromomethane	74-83-9	ND	10	ug/kg	12/15/96
2-Butanone	78-93-3	ND	100	ug/kg	12/15/96
Carbon Disulfide	75-15-0	ND	10	ug/kg	12/15/96
Carbon Tetrachloride	56-23-5	ND	5	ug/kg	12/15/96
Chlorobenzene	108-90-7	ND	5	ug/kg	12/15/96
Chloroethane	75-00-3	ND	10	ug/kg	12/15/96
2-Chloroethyl Vinyl Ether	110-75-8	ND	10	ug/kg	12/15/96
Chloroform	67-66-3	ND	5	ug/kg	12/15/96
Chloromethane	74-87-3	ND	10	ug/kg	12/15/96
Dibromochloromethane	124-48-1	ND	5	ug/kg	12/15/96
1,1-Dichloroethane	75-43-3	ND	5	ug/kg	12/15/96
1,2-Dichloroethane	107-06-2	ND	5	ug/kg	12/15/96
1,1-Dichloroethene	75-35-4	ND	5	ug/kg	12/15/96
cis-1,2-Dichloroethene	156-59-2	ND	5	ug/kg	12/15/96
trans-1,2-Dichloroethene	156-60-5	ND	5	ug/kg	12/15/96
1,2-Dichloropropane	78-87-5	ND	5	ug/kg	12/15/96
cis-1,3-Dichloropropene	10061-01-5	ND	5	ug/kg	12/15/96
trans-1,3-Dichloropropene	10061-02-6	ND	5	ug/kg	12/15/96
Ethylbenzene	100-41-4	ND	5	ug/kg	12/15/96
2-Hexanone	591-78-6	ND	50	ug/kg	12/15/96
Methylene Chloride	75-09-2	ND	20	ug/kg	12/15/96
4-Methyl-2-pentanone	108-10-1	ND	50	ug/kg	12/15/96
Styrene	100-42-5	ND	5	ug/kg	12/15/96
1,1,2,2-Tetrachloroethane	79-34-5	ND	5	ug/kg	12/15/96
Tetrachloroethene	127-18-4	ND	5	ug/kg	12/15/96
Toluene	108-88-3	ND	5	ug/kg	12/15/96
1,1,1-Trichloroethane	71-55-6	ND	5	ug/kg	12/15/96

## GEOSYNTEC CONSULTANTS

SAMPLE ID: GS-2/2.5-3.5

AEN LAB NO: 9612090-11

AEN WORK ORDER: 9612090

CLIENT PROJ. ID: CCWD-BAY POINT

DATE SAMPLED: 12/06/96

DATE RECEIVED: 12/06/96

REPORT DATE: 12/27/96

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
1,1,2-Trichloroethane	79-00-5	ND	5 ug/kg		12/15/96
Trichloroethene	79-01-6	ND	5 ug/kg		12/15/96
Vinyl Acetate	108-05-4	ND	50 ug/kg		12/15/96
Vinyl Chloride	75-01-4	ND	10 ug/kg		12/15/96
Xylenes Total	1330-20-7	ND	10 ug/kg		12/15/96
Homogenization of sample		-		Prep Date	12/13/96
#Extraction for Pest/PCBs	EPA 3550	-		Extrn Date	12/13/96
Pesticides & PCBs	EPA 8080				
Aldrin	309-00-2	ND	5 ug/Kg		12/15/96
alpha-BHC	319-84-6	ND	5 ug/Kg		12/15/96
beta-BHC	319-85-7	ND	5 ug/Kg		12/15/96
delta-BHC	319-86-8	ND	5 ug/Kg		12/15/96
gamma-BHC (Lindane)	58-89-9	ND	5 ug/Kg		12/15/96
Chlordane	57-74-9	ND	50 ug/Kg		12/15/96
4,4'-DDD	72-54-8	ND	10 ug/Kg		12/15/96
2,4'-DDD	53-19-0	ND	10 ug/Kg		12/15/96
4,4'-DDE	72-55-9	ND	10 ug/Kg		12/15/96
2,4'-DDE	3424-82-6	ND	10 ug/Kg		12/15/96
4,4'-DDT	50-29-3	ND	10 ug/Kg		12/15/96
2,4'-DDT	789-02-6	ND	10 ug/Kg		12/15/96
Dieldrin	60-57-1	ND	10 ug/Kg		12/15/96
Endosulfan I	959-98-8	ND	5 ug/Kg		12/15/96
Endosulfan II	33212-65-9	ND	10 ug/Kg		12/15/96
Endosulfan Sulfate	1031-07-8	ND	10 ug/Kg		12/15/96
Endrin	72-20-8	ND	10 ug/Kg		12/15/96
Endrin Aldehyde	7421-93-4	ND	10 ug/Kg		12/15/96
Heptachlor	76-44-8	ND	5 ug/Kg		12/15/96
Heptachlor Epoxide	1024-57-3	ND	5 ug/Kg		12/15/96
Methoxychlor	72-43-5	ND	10 ug/Kg		12/15/96
Toxaphene	8001-35-2	ND	50 ug/Kg		12/15/96
Aroclor 1016	12674-11-2	ND	50 ug/Kg		12/15/96
Aroclor 1221	11104-28-2	ND	50 ug/Kg		12/15/96
Aroclor 1232	11141-16-5	ND	50 ug/Kg		12/15/96
Aroclor 1242	53469-21-9	ND	50 ug/Kg		12/15/96
Aroclor 1248	12672-29-6	ND	50 ug/Kg		12/15/96
Aroclor 1254	11097-69-1	ND	50 ug/Kg		12/15/96
Aroclor 1260	11096-82-5	ND	50 ug/Kg		12/15/96
CCR 17 Metals					
Silver	EPA 6010	0.1 *	0.1 mg/kg		12/16/96

## GEOSYNTEC CONSULTANTS

SAMPLE ID: GS-2/2.5-3.5  
 AEN LAB NO: 9612090-11  
 AEN WORK ORDER: 9612090  
 CLIENT PROJ. ID: CCWD-BAY POINT

DATE SAMPLED: 12/06/96  
 DATE RECEIVED: 12/06/9  
 REPORT DATE: 12/27/96

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
Arsenic	EPA 7060	1.3 *	0.5	mg/kg	12/16/96
Barium	EPA 6010	220 *	1	mg/kg	12/16/96
Beryllium	EPA 6010	0.4 *	0.1	mg/kg	12/16/96
Cadmium	EPA 6010	ND	0.2	mg/kg	12/16/96
Cobalt	EPA 6010	9.9 *	0.2	mg/kg	12/16/96
Chromium	EPA 6010	21 *	0.5	mg/kg	12/16/96
Copper	EPA 6010	12 *	0.5	mg/kg	12/16/96
Mercury	EPA 7471	ND	0.06	mg/kg	12/16/96
Molybdenum	EPA 6010	ND	0.2	mg/kg	12/16/96
Nickel	EPA 6010	38 *	1	mg/kg	12/16/96
Lead	EPA 6010	6 *	1	mg/kg	12/16/96
Antimony	EPA 6010	ND	1	mg/kg	12/16/96
Selenium	EPA 7740	ND	1	mg/kg	12/16/96
Thallium	EPA 6010	8 *	1	mg/kg	12/16/96
Vanadium	EPA 6010	27 *	0.5	mg/kg	12/16/96
Zinc	EPA 6010	28 *	1	mg/kg	12/16/96
#Extraction for BNAs	EPA 3550	-		Extrn Date	12/13/96
Semi-Volatile Organics	EPA 8270				
Acenaphthene	83-32-9	ND	330	ug/kg	12/15/96
Acenaphthylene	208-96-8	ND	330	ug/kg	12/15/96
Anthracene	120-12-7	ND	330	ug/kg	12/15/96
Benzidine	92-87-5	ND	1600	ug/kg	12/15/96
Benzoic Acid	65-85-0	ND	1600	ug/kg	12/15/96
Benzo(a)anthracene	56-55-3	ND	330	ug/kg	12/15/96
Benzo(b)fluoranthene	205-99-2	ND	330	ug/kg	12/15/96
Benzo(k)fluoranthene	207-08-9	ND	330	ug/kg	12/15/96
Benzo(g,h,i)perylene	191-24-2	ND	330	ug/kg	12/15/96
Benzo(a)pyrene	50-32-8	ND	330	ug/kg	12/15/96
Benzyl Alcohol	100-51-6	ND	660	ug/kg	12/15/96
Bis(2-chloroethoxy)methane	111-91-1	ND	330	ug/kg	12/15/96
Bis(2-choroethyl) Ether	111-44-4	ND	330	ug/kg	12/15/96
Bis(2-chloroisopropyl) Ether	108-60-1	ND	330	ug/kg	12/15/96
Bis(2-ethylhexyl) Phthalate	117-81-7	ND	330	ug/kg	12/15/96
4-Bromophenyl Phenyl Ether	101-55-3	ND	330	ug/kg	12/15/96
Butylbenzyl Phthalate	85-68-7	ND	330	ug/kg	12/15/96
4-Chloroaniline	106-47-8	ND	660	ug/kg	12/15/96
2-Choronaphthalene	91-58-7	ND	330	ug/kg	12/15/96
4-Chlorophenyl Phenyl Ether	7005-72-3	ND	330	ug/kg	12/15/96
Chrysene	218-01-9	ND	330	ug/kg	12/15/96
Dibenzo(a,h)anthracene	53-70-3	ND	330	ug/kg	12/15/96
Dibenzofuran	132-64-9	ND	330	ug/kg	12/15/96

## GEOSYNTEC CONSULTANTS

SAMPLE ID: GS-2/2.5-3.5  
 AEN LAB NO: 9612090-11  
 AEN WORK ORDER: 9612090  
 CLIENT PROJ. ID: CCWD-BAY POINT

DATE SAMPLED: 12/06/96  
 DATE RECEIVED: 12/06/96  
 REPORT DATE: 12/27/96

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
Di-n-butyl Phthalate	84-74-2	ND	330	ug/kg	12/15/96
1,2-Dichlorobenzene	95-50-1	ND	330	ug/kg	12/15/96
1,3-Dichlorobenzene	541-73-1	ND	330	ug/kg	12/15/96
1,4-Dichlorobenzene	106-46-7	ND	330	ug/kg	12/15/96
3,3'-Dichlorobenzidine	91-94-1	ND	660	ug/kg	12/15/96
Diethyl Phthalate	84-66-2	ND	330	ug/kg	12/15/96
Dimethyl Phthalate	131-11-3	ND	330	ug/kg	12/15/96
2,4-Dinitrotoluene	121-14-2	ND	330	ug/kg	12/15/96
2,6-Dinitrotoluene	606-20-2	ND	330	ug/kg	12/15/96
Di-n-octyl Phthalate	117-84-0	ND	330	ug/kg	12/15/96
Fluoranthene	206-44-0	ND	330	ug/kg	12/15/96
Fluorene	86-73-7	ND	330	ug/kg	12/15/96
Hexachlorobenzene	118-74-1	ND	330	ug/kg	12/15/96
Hexachlorobutadiene	87-68-3	ND	330	ug/kg	12/15/96
Hexachlorocyclopentadiene	77-47-4	ND	330	ug/kg	12/15/96
Hexachloroethane	67-72-1	ND	330	ug/kg	12/15/96
Indeno(1,2,3-cd)pyrene	193-39-5	ND	330	ug/kg	12/15/96
Isophorone	78-59-1	ND	330	ug/kg	12/15/96
2-Methylnaphthalene	91-57-6	ND	330	ug/kg	12/15/96
Naphthalene	91-20-3	ND	330	ug/kg	12/15/96
2-Nitroaniline	88-74-4	ND	1600	ug/kg	12/15/96
3-Nitroaniline	99-09-2	ND	1600	ug/kg	12/15/96
4-Nitroaniline	100-01-6	ND	1600	ug/kg	12/15/96
Nitrobenzene	98-95-3	ND	330	ug/kg	12/15/96
N-Nitrosodiphenylamine	86-30-6	ND	330	ug/kg	12/15/96
N-Nitrosodi-n-propylamine	621-64-7	ND	330	ug/kg	12/15/96
Phenanthrene	85-01-8	ND	330	ug/kg	12/15/96
Pyrene	129-00-0	ND	330	ug/kg	12/15/96
1,2,4-Trichlorobenzene	120-82-1	ND	330	ug/kg	12/15/96
4-Chloro-3-methylphenol	59-50-7	ND	330	ug/kg	12/15/96
2-Chlorophenol	95-57-8	ND	330	ug/kg	12/15/96
2,4-Dichlorophenol	120-83-2	ND	330	ug/kg	12/15/96
2,4-Dimethylphenol	105-67-9	ND	330	ug/kg	12/15/96
4,6-Dinitro-2-methylphenol	534-52-1	ND	1600	ug/kg	12/15/96
2,4-Dinitrophenol	51-28-5	ND	1600	ug/kg	12/15/96
2-Methylphenol	95-48-7	ND	330	ug/kg	12/15/96
4-Methylphenol	106-44-5	ND	330	ug/kg	12/15/96
2-Nitrophenol	88-75-5	ND	330	ug/kg	12/15/96
4-Nitrophenol	100-02-7	ND	1600	ug/kg	12/15/96
Pentachlorophenol	87-86-5	ND	1600	ug/kg	12/15/96
Phenol	108-95-2	ND	330	ug/kg	12/15/96
2,4,5-Trichlorophenol	95-95-4	ND	330	ug/kg	12/15/96
2,4,6-Trichlorophenol	88-06-2	ND	330	ug/kg	12/15/96



**APPENDIX F**

**KLEINFELDER SOIL STOCKPILE SAMPLING RESULTS**



**TABLE I**  
**Results of Chemical Analysis of Composite Samples**

Analytes/ Parameters	Total Concentration Composite' Sample 1 (#15702) [mg/kg]	Total Concentration Composite Sample 2 (#15701) [mg/kg]	TTLC Regulated Level [mg/kg]	STLC Concentration Composite Sample 1 (#15702) [mg/kg]	STLC Concentration Composite Sample 2 (#15701) [mg/kg]	TCLP Concentration Composite Sample 1 (#15702) [mg/kg]	TCLP Concentration Composite Sample 2 (#15701) [mg/kg]	STLC Regulated Level [mg/kg]
TPH-D (EPA 8015M)	ND	ND	*	*	*	*	*	*
TPH-LO (EPA 8015M)	ND	ND	*	*	*	*	*	*
UEH (EPA 8015M)	254	266	*	*	*	*	*	*
Volatile Organics (EPA 8010)	ND	ND	*	*	*	*	*	*
Antimony	ND	ND	500	0.769	ND	ND	ND	15
Arsenic	26.3	ND	500	1.38	ND	ND	ND	5
Barium	94.5	83.3	10,000	ND	1.4	ND	ND	100
Beryllium	ND	ND	75	ND	ND	ND	ND	0.75
Cadmium	ND	ND	100	0.0790	ND	0.0115	0.0128	1
Chromium	17.5	19.3	2,500	0.0169	0.118	ND	ND	5
Cobalt	ND	ND	8,000	0.435	0.476	ND	ND	80
Copper	24.2	25.6	2,500	0.730	0.656	0.0126	0.0430	25
Lead	8000	6040	1,000	326	151	22.9	34.1	14.5
Molybdenum	ND	ND	3,500	ND	ND	ND	ND	350
Nickel	21.2	17.0	2,000	0.595	0.594	0.0506	0.0834	20
Selenium	81.0	520	100	2.38	ND	0.109	ND	1
Silver	8.27	4.71	500	ND	ND	ND	ND	5
Thallium	ND	ND	700	ND	ND	ND	ND	7
Vanadium	28.4	32.3	2,400	0.444	0.322	ND	ND	24
Zinc	60.8	84.1	5,000	1.98	2.43	0.0189	0.5225	250
Mercury	203	51.7	~20	0.100	0.0212	ND	ND	0.2

Notes:  
 ND = None detected at or above the laboratory reporting limits as shown on the attached laboratory reports.  
 mg/kg = milligrams per kilogram  
 mg/l = milligrams per liter

UEH = Unidentified Extractable Hydrocarbons  
 TTLC = Total Threshold Limit Concentrations (Title 22 Regulated Levels)  
 STLC = Soluble Threshold Limit Concentration (Title 22 Regulated Levels)  
 \* = Not applicable to TTLC and STLC Regulated Levels



**APPENDIX G**

**ANALYTICAL DATA FROM PRELIMINARY ASSESSMENT SAMPLING**



# **CLP - METALS**

**56923**

Applied P & Ch Laboratory  
Metal Analysis Results

Client Name: Tetra Tech EM Inc. Project No: G0069-267A0 Collection Date: 02/10/1999  
 Project ID: NWS Concord SDG Number: 991776 Collected by: RL/CF  
 Lab Sample ID: 99-1776-1 Received Date: 02/11/1999  
 Sample ID: 267A0CSB001 Sample Matrix: Soil Moisture %: 9.9  
 Sample Type: Field Sample

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Aluminum	7429-90-5	mg/kg	11.1	14700	P			99M1221L	02/15/99	02/16/99	1	CLP-Metal
Antimony	7440-36-0	mg/kg	1.3	21.6	P			99M1221L	02/15/99	02/16/99	1	CLP-Metal
Arsenic	7440-38-2	mg/kg	2.2	55.3	P			99M1221L	02/15/99	02/16/99	1	CLP-Metal
Barium	7440-39-3	mg/kg	44.4	168	P			99M1221L	02/15/99	02/16/99	1	CLP-Metal
Beryllium	7440-41-7	mg/kg	0.89	<0.024	U	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Cadmium	7440-43-9	mg/kg	1.1	2.7	P			99M1221L	02/15/99	02/16/99	1	CLP-Metal
Calcium	7440-70-2	mg/kg	1110	26100	P			99M1221L	02/15/99	02/16/99	1	CLP-Metal
Chromium	7440-47-3	mg/kg	2.2	36.3	P			99M1221L	02/15/99	02/16/99	1	CLP-Metal
Cobalt	7440-48-4	mg/kg	11.1	10.4	B	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Copper	7440-50-8	mg/kg	5.5	61.4	P			99M1221L	02/15/99	02/16/99	1	CLP-Metal
Iron	7439-89-6	mg/kg	22.2	21400	P			99M1221L	02/15/99	02/16/99	1	CLP-Metal
Lead	7439-92-1	mg/kg	0.67	11400	P			99M1221L	02/15/99	02/16/99	1	CLP-Metal
Magnesium	7439-95-4	mg/kg	1110	4690	P			99M1221L	02/15/99	02/16/99	1	CLP-Metal
Manganese	7439-96-5	mg/kg	3.3	407	P			99M1221L	02/15/99	02/16/99	1	CLP-Metal
Mercury	7439-97-6	mg/kg	0.61	54.8	CV			99M1224N	02/15/99	02/15/99	10	CLP-Metal
Molybdenum	7439-98-7	mg/kg	1.1	0.17	B	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Nickel	7440-02-0	mg/kg	8.9	32.1	P			99M1221L	02/15/99	02/16/99	1	CLP-Metal
Potassium	7440-09-7	mg/kg	1110	986	B	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Selenium	7782-49-2	mg/kg	1.1	875	P			99M1221L	02/15/99	02/16/99	1	CLP-Metal
Silver	7440-22-4	mg/kg	2.2	10.4	P			99M1221L	02/15/99	02/16/99	1	CLP-Metal
Sodium	7440-23-5	mg/kg	1110	619	B	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Thallium	7440-28-0	mg/kg	0.44	<0.29	U	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Vanadium	7440-62-2	mg/kg	11.1	52.5	P			99M1221L	02/15/99	02/16/99	1	CLP-Metal
Zinc	7440-66-6	mg/kg	4.4	106	P			99M1221L	02/15/99	02/16/99	1	CLP-Metal

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL

B - Less than RL (PQL, EQL or CRDL), but greater than IDL

Q Qualifier: N - Spike recovery out of control

\* - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control

E - Serial dilution difference out of control

M Qualifier: P - ICP

A - FLAA

F - GFAA

CV - Cold Vapor

4989F

**Applied P & Ch Laboratory**  
**Metal Analysis Results**

Client Name:	Tetra Tech EM Inc.	Project No:	G0069-267A0	Collection Date:	02/10/1999
Project ID:	NWS Concord	SDG Number:	991776	Collected by:	RL/CF
Sample ID:	267A0CSB002	Lab Sample ID:	99-1776-2	Received Date:	02/11/1999
Sample Type:	Field Sample	Sample Matrix	Soil	Moisture %:	10.8

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Aluminum	7429-90-5	mg/kg	11.2	13700		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Antimony	7440-36-0	mg/kg	1.3	<0.45	U	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Arsenic	7440-38-2	mg/kg	2.2	5.4		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Barium	7440-39-3	mg/kg	44.8	151		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Beryllium	7440-41-7	mg/kg	0.90	<0.025	U	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Cadmium	7440-43-9	mg/kg	1.1	0.43	B	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Calcium	7440-70-2	mg/kg	1120	2080		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Chromium	7440-47-3	mg/kg	2.2	28.1		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Cobalt	7440-48-4	mg/kg	11.2	20.6		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Copper	7440-50-8	mg/kg	5.6	17.8		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Iron	7439-89-6	mg/kg	22.4	15400		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Lead	7439-92-1	mg/kg	0.67	39.5		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Magnesium	7439-95-4	mg/kg	1120	1930		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Manganese	7439-96-5	mg/kg	3.4	896		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Mercury	7439-97-6	mg/kg	0.11	<0.062	U	CV		99M1224N	02/15/99	02/15/99	1	CLP-Metal
Molybdenum	7439-98-7	mg/kg	1.1	<0.11	U	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Nickel	7440-02-0	mg/kg	9.0	21.4		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Potassium	7440-09-7	mg/kg	1120	799	B	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Selenium	7782-49-2	mg/kg	1.1	3.3		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Silver	7440-22-4	mg/kg	2.2	<0.058	U	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Sodium	7440-23-5	mg/kg	1120	<52.0	U	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Thallium	7440-28-0	mg/kg	0.45	<0.29	U	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Vanadium	7440-62-2	mg/kg	11.2	43.2		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Zinc	7440-66-6	mg/kg	4.5	59.2		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control

\* - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control

E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA

CV - Cold Vapor

49897

Applied P & Ch Laboratory  
Metal Analysis Results

Client Name:	Tetra Tech EM Inc.	Project No:	G0069-267A0	Collection Date:	02/10/1999
Project ID:	NWS Concord	SDG Number:	991776	Collected by:	RL/CF
Sample ID:	267A0CSB003	Lab Sample ID:	99-1776-3	Received Date:	02/11/1999
Sample Type:	Field Sample	Sample Matrix	Soil	Moisture %:	14.9

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Aluminum	7429-90-5	mg/kg	11.8	10900		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Antimony	7440-36-0	mg/kg	1.4	<0.47	U	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Arsenic	7440-38-2	mg/kg	2.4	4.8		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Barium	7440-39-3	mg/kg	47.0	117		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Beryllium	7440-41-7	mg/kg	0.94	<0.026	U	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Cadmium	7440-43-9	mg/kg	1.2	<0.049	U	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Calcium	7440-70-2	mg/kg	1180	2250		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Chromium	7440-47-3	mg/kg	2.4	27.5		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Cobalt	7440-48-4	mg/kg	11.8	16.7		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Copper	7440-50-8	mg/kg	5.9	11.0		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Iron	7439-89-6	mg/kg	23.5	14200		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Lead	7439-92-1	mg/kg	0.71	20.8		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Magnesium	7439-95-4	mg/kg	1180	1850		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Manganese	7439-96-5	mg/kg	3.5	622		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Mercury	7439-97-6	mg/kg	0.12	<0.065	U	CV		99M1224N	02/15/99	02/15/99	1	CLP-Metal
Molybdenum	7439-98-7	mg/kg	1.2	<0.12	U	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Nickel	7440-02-0	mg/kg	9.4	16.2		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Potassium	7440-09-7	mg/kg	1180	485	B	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Selenium	7782-49-2	mg/kg	1.2	1.2		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Silver	7440-22-4	mg/kg	2.4	<0.061	U	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Sodium	7440-23-5	mg/kg	1180	<54.6	U	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Thallium	7440-28-0	mg/kg	0.47	<0.31	U	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Vanadium	7440-62-2	mg/kg	11.8	46.0		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Zinc	7440-66-6	mg/kg	4.7	18.7		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL

B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control

\* - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control

E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA

CV - Cold Vapor

49898

Applied P & Ch Laboratory  
Metal Analysis Results

Client Name: Tetra Tech EM Inc.  
Project ID: NWS Concord  
Sample ID: 267A0CSB004  
Sample Type: Field Sample

Project No: G0069-267A0  
SDG Number: 991776  
Lab Sample ID: 99-1776-4  
Sample Matrix Soil

Collection Date: 02/10/1999  
Collected by: RL/CF  
Received Date: 02/11/1999  
Moisture %: 4.4

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Aluminum	7429-90-5	mg/kg	10.5	15400		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Antimony	7440-36-0	mg/kg	1.3	2.3		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Arsenic	7440-38-2	mg/kg	2.1	22.4		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Barium	7440-39-3	mg/kg	41.8	129		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Beryllium	7440-41-7	mg/kg	0.84	<0.023	U	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Cadmium	7440-43-9	mg/kg	1.0	1.2		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Calcium	7440-70-2	mg/kg	1050	8220		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Chromium	7440-47-3	mg/kg	2.1	36.9		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Cobalt	7440-48-4	mg/kg	10.5	9.7	B	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Copper	7440-50-8	mg/kg	5.2	38.1		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Iron	7439-89-6	mg/kg	20.9	21200		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Lead	7439-92-1	mg/kg	0.63	4300		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Magnesium	7439-95-4	mg/kg	1050	4470		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Manganese	7439-96-5	mg/kg	3.1	264		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Mercury	7439-97-6	mg/kg	0.10	2.8		CV		99M1224N	02/15/99	02/15/99	1	CLP-Metal
Molybdenum	7439-98-7	mg/kg	1.0	<0.10	U	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Nickel	7440-02-0	mg/kg	8.4	30.7		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Potassium	7440-09-7	mg/kg	1050	994	B	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Selenium	7782-49-2	mg/kg	1.0	215		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Silver	7440-22-4	mg/kg	2.1	1.6	B	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Sodium	7440-23-5	mg/kg	1050	392	B	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Thallium	7440-28-0	mg/kg	0.42	<0.27	U	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Vanadium	7440-62-2	mg/kg	10.5	52.4		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Zinc	7440-66-6	mg/kg	4.2	92.8		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL

B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control

\* - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control

E - Serial dilution difference out of control

M Qualifier: P - ICP            A - FLAA            F - GFAA

CV - Cold Vapor

49899

Applied P & Ch Laboratory  
Metal Analysis Results

Client Name: Tetra Tech EM Inc.

Project ID: NWS Concord

Sample ID: 267A0CSB005

Sample Type: Field Sample

Project No: G0069-267A0

SDG Number: 991776

Lab Sample ID: 99-1776-5

Sample Matrix Soil

Collection Date: 02/10/1999

Collected by: RL/CF

Received Date: 02/11/1999

Moisture %: 9.1

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Aluminum	7429-90-5	mg/kg	11.0	26900		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Antimony	7440-36-0	mg/kg	1.3	<0.44	U	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Arsenic	7440-38-2	mg/kg	2.2	4.0		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Barium	7440-39-3	mg/kg	44.0	15.1	B	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Beryllium	7440-41-7	mg/kg	0.88	<0.024	U	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Cadmium	7440-43-9	mg/kg	1.1	0.42	B	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Calcium	7440-70-2	mg/kg	1100	12800		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Chromium	7440-47-3	mg/kg	2.2	40.0		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Cobalt	7440-48-4	mg/kg	11.0	38.9		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Copper	7440-50-8	mg/kg	5.5	133		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Iron	7439-89-6	mg/kg	22.0	45000		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Lead	7439-92-1	mg/kg	0.66	18.1		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Magnesium	7439-95-4	mg/kg	1100	16100		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Manganese	7439-96-5	mg/kg	3.3	1360		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Mercury	7439-97-6	mg/kg	0.11	1.2		CV		99M1224N	02/15/99	02/15/99	1	CLP-Metal
Molybdenum	7439-98-7	mg/kg	1.1	<0.11	U	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Nickel	7440-02-0	mg/kg	8.8	31.4		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Potassium	7440-09-7	mg/kg	1100	907	B	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Selenium	7782-49-2	mg/kg	1.1	0.85	B	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Silver	7440-22-4	mg/kg	2.2	1.1	B	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Sodium	7440-23-5	mg/kg	1100	<51.0	U	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Thallium	7440-28-0	mg/kg	0.44	<0.29	U	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Vanadium	7440-62-2	mg/kg	11.0	118		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Zinc	7440-66-6	mg/kg	4.4	90.1		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL

B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control

\* - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control

E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA

CV - Cold Vapor

49900

Applied P & Ch Laboratory  
**Metal Analysis Results**

Client Name: Tetra Tech EM Inc.  
Project ID: NWS Concord  
  
Sample ID: 267A0CSB006  
Sample Type: Field Sample

Project No: G0069-267A0 Collection Date: 02/10/1999  
SDG Number: 991776 Collected by: RL/CF  
Lab Sample ID: 99-1776-6 Received Date: 02/11/1999  
Sample Matrix Soil Moisture %: 37.8

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Aluminum	7429-90-5	mg/kg	16.1	349		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Antimony	7440-36-0	mg/kg	1.9	2.5		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Arsenic	7440-38-2	mg/kg	3.2	<0.42	U	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Barium	7440-39-3	mg/kg	64.3	91.7		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Beryllium	7440-41-7	mg/kg	1.3	0.046	B	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Cadmium	7440-43-9	mg/kg	1.6	8.0		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Calcium	7440-70-2	mg/kg	16100	288000		P		99M1221L	02/15/99	02/16/99	10	CLP-Metal
Chromium	7440-47-3	mg/kg	3.2	28.4		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Cobalt	7440-48-4	mg/kg	16.1	0.48	B	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Copper	7440-50-8	mg/kg	8.0	4.0	B	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Iron	7439-89-6	mg/kg	32.1	190		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Lead	7439-92-1	mg/kg	0.96	114		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Magnesium	7439-95-4	mg/kg	1610	60.7	B	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Manganese	7439-96-5	mg/kg	4.8	2.0	B	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Mercury	7439-97-6	mg/kg	0.16	<0.088	U	CV		99M1224N	02/15/99	02/15/99	1	CLP-Metal
Molybdenum	7439-98-7	mg/kg	1.6	0.67	B	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Nickel	7440-02-0	mg/kg	12.9	2.2	B	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Potassium	7440-09-7	mg/kg	1610	139	B	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Selenium	7782-49-2	mg/kg	1.6	14.4		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Silver	7440-22-4	mg/kg	3.2	2.0	B	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Sodium	7440-23-5	mg/kg	1610	<74.6	U	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Thallium	7440-28-0	mg/kg	0.64	1.4		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Vanadium	7440-62-2	mg/kg	16.1	7.0	B	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Zinc	7440-66-6	mg/kg	6.4	20.7		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor  
 C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.  
 Q Qualifier: N - Spike recovery out of control \* - Duplicate analysis out of control  
                   W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control  
 M Qualifier: P - ICP           A - FLAA           F - GFAA           CV - Cold Vapor

49901

Applied P & Ch Laboratory  
Metal Analysis Results

Client Name: Tetra Tech EM Inc.  
Project ID: NWS Concord

Sample ID: 267A0CSB007  
Sample Type: Field Sample

Project No: G0069-267A0  
SDG Number: 991776  
Lab Sample ID: 99-1776-7  
Sample Matrix Soil  
Collection Date: 02/10/1999  
Collected by: RL/CF  
Received Date: 02/11/1999  
Moisture %: 14.5

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Aluminum	7429-90-5	mg/kg	11.7	20400		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Antimony	7440-36-0	mg/kg	1.4	<0.47	U	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Arsenic	7440-38-2	mg/kg	2.3	31.6		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Barium	7440-39-3	mg/kg	46.8	146		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Beryllium	7440-41-7	mg/kg	0.94	<0.026	U	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Cadmium	7440-43-9	mg/kg	1.2	8.4		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Calcium	7440-70-2	mg/kg	1170	29200		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Chromium	7440-47-3	mg/kg	2.3	37.9		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Cobalt	7440-48-4	mg/kg	11.7	10.5	B	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Copper	7440-50-8	mg/kg	5.8	42.5		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Iron	7439-89-6	mg/kg	23.4	21900		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Lead	7439-92-1	mg/kg	0.70	170		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Magnesium	7439-95-4	mg/kg	1170	3430		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Manganese	7439-96-5	mg/kg	3.5	322		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Mercury	7439-97-6	mg/kg	0.12	3.5		CV		99M1224N	02/15/99	02/15/99	1	CLP-Metal
Molybdenum	7439-98-7	mg/kg	1.2	0.41	B	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Nickel	7440-02-0	mg/kg	9.4	26.3		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Potassium	7440-09-7	mg/kg	1170	1520		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Selenium	7782-49-2	mg/kg	1.2	20.5		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Silver	7440-12-4	mg/kg	2.3	<0.061	U	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Sodium	7440-23-5	mg/kg	1170	265	B	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Thallium	7440-28-0	mg/kg	0.47	<0.30	U	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Vanadium	7440-62-2	mg/kg	11.7	56.0		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Zinc	7440-66-6	mg/kg	4.7	194		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL

B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control

\* - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control

E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA

CV - Cold Vapor

49902

Applied P & Ch Laboratory  
Metal Analysis Results

Client Name: Tetra Tech EM Inc. Project No: G0069-267A0 Collection Date: 02/10/1999  
 Project ID: NWS Concord SDG Number: 991776 Collected by: RL/CF  
 Sample ID: 267A0CSB008 Lab Sample ID: 99-1776-8 Received Date: 02/11/1999  
 Sample Type: Field Sample Sample Matrix Soil Moisture %: 17.4

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Aluminum	7429-90-5	mg/kg	12.1	29100		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Antimony	7440-36-0	mg/kg	1.5	0.85	B	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Arsenic	7440-38-2	mg/kg	2.4	6.2		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Barium	7440-39-3	mg/kg	48.4	199		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Beryllium	7440-41-7	mg/kg	0.97	0.34	B	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Cadmium	7440-43-9	mg/kg	1.2	0.22	B	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Calcium	7440-70-2	mg/kg	1210	3300		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Chromium	7440-47-3	mg/kg	2.4	48.1		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Cobalt	7440-48-4	mg/kg	12.1	10.4	B	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Copper	7440-50-8	mg/kg	6.1	14.0		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Iron	7439-89-6	mg/kg	24.2	29100		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Lead	7439-92-1	mg/kg	0.73	9.4		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Magnesium	7439-95-4	mg/kg	1210	4680		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Manganese	7439-96-5	mg/kg	3.6	493		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Mercury	7439-97-6	mg/kg	0.12	<0.067	U	CV		99M1224N	02/15/99	02/15/99	1	CLP-Metal
Molybdenum	7439-98-7	mg/kg	1.2	<0.12	U	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Nickel	7440-02-0	mg/kg	9.7	36.3		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Potassium	7440-09-7	mg/kg	1210	929	B	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Selenium	7782-49-2	mg/kg	1.2	<0.53	U	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Silver	7440-22-4	mg/kg	2.4	<0.063	U	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Sodium	7440-23-5	mg/kg	1210	308	B	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Thallium	7440-28-0	mg/kg	0.48	<0.31	U	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Vanadium	7440-62-2	mg/kg	12.1	65.6		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Zinc	7440-66-6	mg/kg	4.8	42.6		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL

B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control

\* - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control

E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA

CV - Cold Vapor

49903

Applied P & Ch Laboratory  
Metal Analysis Results

Client Name:	Tetra Tech EM Inc.	Project No:	G0069-267A0	Collection Date:	02/10/1999
Project ID:	NWS Concord	SDG Number:	991776	Collected by:	RL/CF
Sample ID:	267A0CSB009	Lab Sample ID:	99-1776-9	Received Date:	02/11/1999
Sample Type:	Field Sample	Sample Matrix	Soil	Moisture %:	25.8

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Aluminum	7429-90-5	mg/kg	13.5	22900		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Antimony	7440-36-0	mg/kg	1.6	1.5	B	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Arsenic	7440-38-2	mg/kg	2.7	28.6		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Barium	7440-39-3	mg/kg	53.9	206		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Beryllium	7440-41-7	mg/kg	1.1	<0.030	U	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Cadmium	7440-43-9	mg/kg	1.3	3.7		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Calcium	7440-70-2	mg/kg	1350	13300		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Chromium	7440-47-3	mg/kg	2.7	46.3		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Cobalt	7440-48-4	mg/kg	13.5	8.9	B	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Copper	7440-50-8	mg/kg	6.7	27.4		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Iron	7439-89-6	mg/kg	26.9	20100		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Lead	7439-92-1	mg/kg	0.81	895		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Magnesium	7439-95-4	mg/kg	1350	2290		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Manganese	7439-96-5	mg/kg	4.0	200		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Mercury	7439-97-6	mg/kg	2.6	113		CV		99M1224N	02/15/99	02/15/99	20	CLP-Metal
Molybdenum	7439-98-7	mg/kg	1.3	0.53	B	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Nickel	7440-02-0	mg/kg	10.8	27.8		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Potassium	7440-09-7	mg/kg	1350	1640		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Selenium	7782-49-2	mg/kg	1.3	44.7		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Silver	7440-22-4	mg/kg	2.7	0.20	B	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Sodium	7440-23-5	mg/kg	1350	<62.5	U	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Thallium	7440-28-0	mg/kg	0.54	<0.35	U	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Vanadium	7440-62-2	mg/kg	13.5	62.1		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Zinc	7440-66-6	mg/kg	5.4	131		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL

B - Less than RL (PQL, EQL or CRDL), but greater than IDL

Q Qualifier: N - Spike recovery out of control

\* - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control

E - Serial dilution difference out of control

M Qualifier: P - ICP A - FLAA F - GFAA

CV - Cold Vapor

49904

Applied P & Ch Laboratory  
Metal Analysis Results

Client Name: Tetra Tech EM Inc.  
Project ID: PO#992208

Project No: G0069-267A01 Collection Date: 02/12/1999  
SDG Number: 991825 Collected by: Lantz/Carlson  
Lab Sample ID: 99-1825-1 Received Date: 02/13/1999

Sample ID: 267AOCSB010  
Sample Type: Field Sample

Sample Matrix Soil Moisture %: 6.9

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Aluminum	7429-90-5	mg/kg	10.7	28600	P			99M1221L	02/15/99	02/16/99	1	CLP-Metal
Antimony	7440-36-0	mg/kg	1.3	<0.43	U	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Arsenic	7440-38-2	mg/kg	2.1	2.8		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Barium	7440-39-3	mg/kg	43.0	3.1	B	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Beryllium	7440-41-7	mg/kg	0.86	<0.024	U	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Cadmium	7440-43-9	mg/kg	1.1	<0.045	U	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Calcium	7440-70-2	mg/kg	1070	17900		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Chromium	7440-47-3	mg/kg	2.1	37.1		P	N	99M1221L	02/15/99	02/16/99	1	CLP-Metal
Cobalt	7440-48-4	mg/kg	10.7	27.6		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Copper	7440-50-8	mg/kg	5.4	156		P	N	99M1221L	02/15/99	02/16/99	1	CLP-Metal
Iron	7439-89-6	mg/kg	21.5	38700		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Lead	7439-92-1	mg/kg	0.64	1.9		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Magnesium	7439-95-4	mg/kg	1070	17300		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Manganese	7439-96-5	mg/kg	3.2	695		P	N	99M1221L	02/15/99	02/16/99	1	CLP-Metal
Mercury	7439-97-6	mg/kg	0.11	1.1		CV		99M1231N	02/16/99	02/16/99	1	CLP-Metal
Molybdenum	7439-98-7	mg/kg	1.1	<0.11	U	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Nickel	7440-02-0	mg/kg	8.6	28.9		P	N	99M1221L	02/15/99	02/16/99	1	CLP-Metal
Potassium	7440-09-7	mg/kg	1070	711	B	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Selenium	7782-49-2	mg/kg	1.1	<0.47	U	P	N	99M1221L	02/15/99	02/16/99	1	CLP-Metal
Silver	7440-22-4	mg/kg	2.1	0.071	B	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Sodium	7440-23-5	mg/kg	1070	<49.8	U	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Thallium	7440-28-0	mg/kg	0.43	<0.28	U	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Vanadium	7440-62-2	mg/kg	10.7	94.8		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Zinc	7440-66-6	mg/kg	4.3	52.2		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL

B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control

\* - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control

E - Serial dilution difference out of control

M Qualifier: P - ICP

A - FLAA

F - GFAA

CV - Cold Vapor

56924

Applied P & Ch Laboratory  
Metal Analysis Results

Client Name: Tetra Tech EM Inc.

Project ID: PO#992208

Project No: G0069-267A01 Collection Date: 02/12/1999

SDG Number: 991825 Collected by: Lantz/Carlson

Lab Sample ID: 99-1825-2 Received Date: 02/13/1999

Sample ID: 267AOCSB011

Sample Matrix Soil Moisture %: 12.1

Sample Type: Field Sample

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Aluminum	7429-90-5	mg/kg	11.4	15100	P			99M1221L	02/15/99	02/16/99	1	CLP-Metal
Antimony	7440-36-0	mg/kg	1.4	<0.45	U	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Arsenic	7440-38-2	mg/kg	2.3	5.4	P			99M1221L	02/15/99	02/16/99	1	CLP-Metal
Barium	7440-39-3	mg/kg	45.5	152	P			99M1221L	02/15/99	02/16/99	1	CLP-Metal
Beryllium	7440-41-7	mg/kg	0.91	<0.025	U	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Cadmium	7440-43-9	mg/kg	1.1	<0.048	U	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Calcium	7440-70-2	mg/kg	1140	2550	P			99M1221L	02/15/99	02/16/99	1	CLP-Metal
Chromium	7440-47-3	mg/kg	2.3	34.1	P	N		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Cobalt	7440-48-4	mg/kg	11.4	16.7	P			99M1221L	02/15/99	02/16/99	1	CLP-Metal
Copper	7440-50-8	mg/kg	5.7	16.6	P	N		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Iron	7439-89-6	mg/kg	22.7	19900	P			99M1221L	02/15/99	02/16/99	1	CLP-Metal
Lead	7439-92-1	mg/kg	0.68	8.0	P			99M1221L	02/15/99	02/16/99	1	CLP-Metal
Magnesium	7439-95-4	mg/kg	1140	2540	P			99M1221L	02/15/99	02/16/99	1	CLP-Metal
Manganese	7439-96-5	mg/kg	3.4	712	P	N		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Mercury	7439-97-6	mg/kg	0.11	<0.063	U	CV		99M1231N	02/16/99	02/16/99	1	CLP-Metal
Molybdenum	7439-98-7	mg/kg	1.1	<0.11	U	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Nickel	7440-02-0	mg/kg	9.1	28.2	P	N		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Potassium	7440-09-7	mg/kg	1140	955	B	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Selenium	7782-49-2	mg/kg	1.1	<0.50	U	P	N	99M1221L	02/15/99	02/16/99	1	CLP-Metal
Silver	7440-22-4	mg/kg	2.3	<0.059	U	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Sodium	7440-23-5	mg/kg	1140	<52.8	U	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Thallium	7440-28-0	mg/kg	0.45	<0.30	U	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Vanadium	7440-62-2	mg/kg	11.4	54.1	P			99M1221L	02/15/99	02/16/99	1	CLP-Metal
Zinc	7440-66-6	mg/kg	4.5	38.4	P			99M1221L	02/15/99	02/16/99	1	CLP-Metal

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL

B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control

W - Duplicate analysis out of control

E - Post digestion spike for GFAA out of control

F - Serial dilution difference out of control

M Qualifier: P - ICP

A - FLAA

F - GFAA

CV - Cold Vapor

56925

Applied P & Ch Laboratory  
Metal Analysis Results

Client Name: Tetra Tech EM Inc. Project No: G0069-267A01 Collection Date: 02/12/1999  
 Project ID: PO#992208 SDG Number: 991825 Collected by: Lantz/Carlson  
 Sample ID: 267AOCSB012 Lab Sample ID: 99-1825-3 Received Date: 03/13/1999  
 Sample Type: Field Sample Sample Matrix: Soil Moisture %: 13.3

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Aluminum	7429-90-5	mg/kg	11.5	17500	P			99M1221L	02/15/99	02/16/99	1	CLP-Metal
Antimony	7440-36-0	mg/kg	1.4	<0.46	U	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Arsenic	7440-38-2	mg/kg	2.3	5.7	P			99M1221L	02/15/99	02/16/99	1	CLP-Metal
Barium	7440-39-3	mg/kg	46.1	302	P			99M1221L	02/15/99	02/16/99	1	CLP-Metal
Beryllium	7440-41-7	mg/kg	0.92	0.085	B	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Cadmium	7440-43-9	mg/kg	1.2	<0.048	U	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Calcium	7440-70-2	mg/kg	1150	16900	P			99M1221L	02/15/99	02/16/99	1	CLP-Metal
Chromium	7440-47-3	mg/kg	2.3	27.1	P	N		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Cobalt	7440-48-4	mg/kg	11.5	12.4	P			99M1221L	02/15/99	02/16/99	1	CLP-Metal
Copper	7440-50-8	mg/kg	5.8	12.5	P	N		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Iron	7439-89-6	mg/kg	23.1	20400	P			99M1221L	02/15/99	02/16/99	1	CLP-Metal
Lead	7439-92-1	mg/kg	0.69	6.7	P			99M1221L	02/15/99	02/16/99	1	CLP-Metal
Magnesium	7439-95-4	mg/kg	1150	5700	P			99M1221L	02/15/99	02/16/99	1	CLP-Metal
Manganese	7439-96-5	mg/kg	3.5	734	P	N		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Mercury	7439-97-6	mg/kg	0.12	<0.063	U	CV		99M1231N	02/16/99	02/16/99	1	CLP-Metal
Molybdenum	7439-98-7	mg/kg	1.2	<0.12	U	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Nickel	7440-02-0	mg/kg	9.2	45.8	P	N		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Potassium	7440-09-7	mg/kg	F150	901	B	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Selenium	7782-49-2	mg/kg	1.2	<0.51	U	P	N	99M1221L	02/15/99	02/16/99	1	CLP-Metal
Silver	7440-22-4	mg/kg	2.3	<0.060	U	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Sodium	7440-23-5	mg/kg	1150	<53.5	U	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Thallium	7440-28-0	mg/kg	0.46	0.58	P			99M1221L	02/15/99	02/16/99	1	CLP-Metal
Vanadium	7440-62-2	mg/kg	11.5	46.5	P			99M1221L	02/15/99	02/16/99	1	CLP-Metal
Zinc	7440-66-6	mg/kg	4.6	37.1	P			99M1221L	02/15/99	02/16/99	1	CLP-Metal

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor  
 C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.  
 Q Qualifier: N - Spike recovery out of control \* - Duplicate analysis out of control  
 W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control  
 M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

56926

**Applied P & Ch Laboratory**  
**Metal Analysis Results**

Client Name: Tetra Tech EM Inc.  
 Project ID: PO#992208

Project No: G0069-267A01 Collection Date: 02/12/1999  
 SDG Number: 991825 Collected by: Lantz/Carlson  
 Lab Sample ID: 99-1825-4 Received Date: 02/13/1999  
 Sample Matrix Soil Moisture %: 22.3

Sample ID: 267AOCSB013  
 Sample Type: Field Sample

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Aluminum	7429-90-5	mg/kg	12.9	24700	P			99M1221L	02/15/99	02/16/99	1	CLP-Metal
Antimony	7440-36-0	mg/kg	1.5	<0.52	U	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Arsenic	7440-38-2	mg/kg	2.6	12.1		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Barium	7440-39-3	mg/kg	51.5	185		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Beryllium	7440-41-7	mg/kg	1.0	0.13	B	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Cadmium	7440-43-9	mg/kg	1.3	3.2		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Calcium	7440-70-2	mg/kg	1290	33900		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Chromium	7440-47-3	mg/kg	2.6	77.2		P	N	99M1221L	02/15/99	02/16/99	1	CLP-Metal
Cobalt	7440-48-4	mg/kg	12.9	8.3	B	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Copper	7440-50-8	mg/kg	6.4	29.9		P	N	99M1221L	02/15/99	02/16/99	1	CLP-Metal
Iron	7439-89-6	mg/kg	25.8	24100		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Lead	7439-92-1	mg/kg	0.77	19.0		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Magnesium	7439-95-4	mg/kg	1290	3840		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Manganese	7439-96-5	mg/kg	3.9	243		P	N	99M1221L	02/15/99	02/16/99	1	CLP-Metal
Mercury	7439-97-6	mg/kg	0.13	<0.071	U	CV		99M1231N	02/16/99	02/16/99	1	CLP-Meta
Molybdenum	7439-98-7	mg/kg	1.3	0.17	B	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Nickel	7440-02-0	mg/kg	10.3	21.9		P	N	99M1221L	02/15/99	02/16/99	1	CLP-Metal
Potassium	7440-09-7	mg/kg	1290	1840		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Selenium	7782-49-2	mg/kg	1.3	4.2		P	N	99M1221L	02/15/99	02/16/99	1	CLP-Metal
Silver	7440-22-4	mg/kg	2.6	<0.067	U	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Sodium	7440-23-5	mg/kg	1290	<59.7	U	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Thallium	7440-28-0	mg/kg	0.52	<0.33	U	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Vanadium	7440-62-2	mg/kg	12.9	125		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Zinc	7440-66-6	mg/kg	5.2	174		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL

Q Qualifier: N - Spike recovery out of control

W - Post digestion spike for GFAA out of control

M Qualifier: P - ICP

A - FLAA

F - GFAA

B - Less than RL (PQL, EQL or CRDL), but greater than IDL

- - Duplicate analysis out of control

E - Serial dilution difference out of control

CV - Cold Vapor

56927

Applied P & Ch Laboratory  
Metal Analysis Results

Client Name: Tetra Tech EM Inc.  
Project ID: PO#992208  
Sample ID: 267AOCSB014  
Sample Type: Field Sample

Project No: G0069-267A01 Collection Date: 02/12/1999  
SDG Number: 991825 Collected by: Lantz/Carlson  
Lab Sample ID: 99-1825-5 Received Date: 02/13/1999  
Sample Matrix Soil Moisture %: 36.4

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Aluminum	7429-90-5	mg/kg	15.7	1160	P			99M1221L	02/15/99	02/16/99	1	CLP-Metal
Antimony	7440-36-0	mg/kg	1.9	3.2	P			99M1221L	02/15/99	02/16/99	1	CLP-Metal
Arsenic	7440-38-2	mg/kg	3.1	11.8	P			99M1221L	02/15/99	02/16/99	1	CLP-Metal
Barium	7440-39-3	mg/kg	62.9	113	P			99M1221L	02/15/99	02/16/99	1	CLP-Metal
Beryllium	7440-41-7	mg/kg	1.3	<0.035	U	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Cadmium	7440-43-9	mg/kg	1.6	3.7	P			99M1221L	02/15/99	02/16/99	1	CLP-Metal
Calcium	7440-70-2	mg/kg	15700	313000	P			99M1221L	02/15/99	02/16/99	10	CLP-Metal
Chromium	7440-47-3	mg/kg	3.1	78.0	P	N		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Cobalt	7440-48-4	mg/kg	15.7	<0.14	U	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Copper	7440-50-8	mg/kg	7.9	4.0	B	P	N	99M1221L	02/15/99	02/16/99	1	CLP-Metal
Iron	7439-89-6	mg/kg	31.4	603	P			99M1221L	02/15/99	02/16/99	1	CLP-Metal
Lead	7439-92-1	mg/kg	0.94	47.2	P			99M1221L	02/15/99	02/16/99	1	CLP-Metal
Magnesium	7439-95-4	mg/kg	1570	43.3	B	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Manganese	7439-96-5	mg/kg	4.7	<0.12	U	P	N	99M1221L	02/15/99	02/16/99	1	CLP-Metal
Mercury	7439-97-6	mg/kg	0.16	0.10	B	CV		99M1231N	02/16/99	02/16/99	1	CLP-Metal
Molybdenum	7439-98-7	mg/kg	1.6	0.56	B	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Nickel	7440-02-0	mg/kg	12.6	2.6	B	P	N	99M1221L	02/15/99	02/16/99	1	CLP-Metal
Potassium	7440-09-7	mg/kg	1570	217	B	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Selenium	7782-49-2	mg/kg	1.6	2.6	P	N		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Silver	7440-22-4	mg/kg	3.1	1.4	B	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Sodium	7440-23-5	mg/kg	1570	<72.9	U	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Thallium	7440-28-0	mg/kg	0.63	1.2	P			99M1221L	02/15/99	02/16/99	1	CLP-Metal
Vanadium	7440-62-2	mg/kg	15.7	23.8	P			99M1221L	02/15/99	02/16/99	1	CLP-Metal
Zinc	7440-66-6	mg/kg	6.3	51.2	P			99M1221L	02/15/99	02/16/99	1	CLP-Metal

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL

B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control

\* - Duplicate analysis out of control

W - Post digestion spike for GFQA out of control

E - Serial dilution difference out of control

M Qualifier: P - ICP

A - FLAA

F - GFQA

CV - Cold Vapor

56928

Applied P & Ch Laboratory  
Metal Analysis Results

Client Name: Tetra Tech EM Inc.  
Project ID: PO#992208

Project No: G0069-267A01 Collection Date: 02/12/1999  
SDG Number: 991825 Collected by: Lantz/Carlson  
Lab Sample ID: 99-1825-6 Received Date: 02/13/1999  
Sample Matrix Soil Moisture %: 20.3

Sample ID: 267AOCSB015  
Sample Type: Field Sample

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Aluminum	7429-90-3	mg/kg	12.5	16400		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Antimony	7440-36-0	mg/kg	1.5	2.4		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Arsenic	7440-38-2	mg/kg	2.5	148		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Barium	7440-39-3	mg/kg	50.2	163		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Beryllium	7440-41-7	mg/kg	1.0	<0.028	U	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Cadmium	7440-43-9	mg/kg	1.3	11.3		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Calcium	7440-70-2	mg/kg	1250	43800		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Chromium	7440-47-3	mg/kg	2.5	86.2		P	N	99M1221L	02/15/99	02/16/99	1	CLP-Metal
Cobalt	7440-48-4	mg/kg	12.5	10.8	B	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Copper	7440-50-8	mg/kg	6.3	88.7		P	N	99M1221L	02/15/99	02/16/99	1	CLP-Metal
Iron	7439-89-6	mg/kg	25.1	15300		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Lead	7439-92-1	mg/kg	0.75	29.7		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Magnesium	7439-95-4	mg/kg	1250	988	B	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Manganese	7439-96-5	mg/kg	3.8	407		P	N	99M1221L	02/15/99	02/16/99	1	CLP-Metal
Mercury	7439-97-6	mg/kg	0.13	<0.069	U	CV		99M1231N	02/16/99	02/16/99	1	CLP-Metal
Molybdenum	7439-98-7	mg/kg	1.3	1.5		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Nickel	7440-02-0	mg/kg	10.0	18.3		P	N	99M1221L	02/15/99	02/16/99	1	CLP-Metal
Potassium	7440-09-7	mg/kg	1250	1920		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Selenium	7782-49-2	mg/kg	1.3	9.3		P	N	99M1221L	02/15/99	02/16/99	1	CLP-Metal
Silver	7440-22-4	mg/kg	2.5	<0.065	U	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Sodium	7440-23-5	mg/kg	1250	361	B	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Thallium	7440-28-0	mg/kg	0.50	<0.33	U	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Vanadium	7440-62-2	mg/kg	12.5	86.3		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Zinc	7440-66-6	mg/kg	5.0	92.0		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor  
C Qualifier: U - Not Detected or less than IDL      B - Less than RL (PQL, EQL or CRDL), but greater than IDL.  
Q Qualifier: N - Spike recovery out of control      \* - Duplicate analysis out of control  
W - Post digestion spike for GFAA out of control      E - Serial dilution difference out of control  
M Qualifier: P - ICP      A - FLAA      F - GFAA      CV - Cold Vapor

**Applied P & Ch Laboratory**  
**Metal Analysis Results**

Client Name: Tetra Tech EM Inc.

Project ID: PO#992208

Project No: G0069-267A01

Collection Date: 02/12/1999

SDG Number: 991825

Collected by: Lantz/Carlson

Lab Sample ID: 99-1825-7

Received Date: 02/13/1999

Sample ID: 267AOCSB016

Sample Matrix Soil

Moisture %: 18.9

Sample Type: Field Sample

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Aluminum	7429-90-5	mg/kg	12.3	33900		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Antimony	7440-36-0	mg/kg	1.5	0.74	B	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Arsenic	7440-38-2	mg/kg	2.5	8.7		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Barium	7440-39-3	mg/kg	49.3	213		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Beryllium	7440-41-7	mg/kg	0.99	0.033	B	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Cadmium	7440-43-9	mg/kg	1.2	0.075	B	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Calcium	7440-70-2	mg/kg	1230	4290		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Chromium	7440-47-3	mg/kg	2.5	55.4		P	N	99M1221L	02/15/99	02/16/99	1	CLP-Metal
Cobalt	7440-48-4	mg/kg	12.3	14.5		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Copper	7440-50-8	mg/kg	6.2	14.1		P	N	99M1221L	02/15/99	02/16/99	1	CLP-Metal
Iron	7439-89-6	mg/kg	24.7	32000		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Lead	7439-92-1	mg/kg	0.74	8.4		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Magnesium	7439-95-4	mg/kg	1230	5220		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Manganese	7439-96-5	mg/kg	3.7	554		P	N	99M1221L	02/15/99	02/16/99	1	CLP-Metal
Mercury	7439-97-6	mg/kg	0.12	<0.068	U	CV		99M1231N	02/16/99	02/16/99	1	CLP-Metal
Molybdenum	7439-98-7	mg/kg	1.2	<0.12	U	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Nickel	7440-02-0	mg/kg	9.9	56.9		P	N	99M1221L	02/15/99	02/16/99	1	CLP-Metal
Potassium	7440-09-7	mg/kg	1230	1130	B	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Selenium	7782-49-2	mg/kg	1.2	<0.54	U	P	N	99M1221L	02/15/99	02/16/99	1	CLP-Metal
Silver	7440-22-4	mg/kg	2.5	<0.064	U	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Sodium	7440-23-5	mg/kg	1230	<57.2	U	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Thallium	7440-28-0	mg/kg	0.49	<0.32	U	P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Vanadium	7440-62-2	mg/kg	12.3	73.3		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal
Zinc	7440-66-6	mg/kg	4.9	51.3		P		99M1221L	02/15/99	02/16/99	1	CLP-Metal

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor

C Qualifier: U - Not Detected or less than IDL

B - Less than RL (PQL, EQL or CRDL), but greater than IDL.

Q Qualifier: N - Spike recovery out of control

\* - Duplicate analysis out of control

W - Post digestion spike for GFAA out of control

E - Serial dilution difference out of control

M Qualifier: P - ICP

A - FLAA

F - GFAA

CV - Cold Vapor

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Applied P & Ch Laboratory  
Metal Analysis Results

Client Name: Tetra Tech EM Inc.  
Project ID: PO#992208

Project No: G0069-267A01 Collection Date: 02/12/1999  
SDG Number: 991825 Collected by: Lantz/Carlson  
Lab Sample ID: 99-1825-8 Received Date: 02/13/1999  
Sample Matrix Water Moisture %: -

Sample ID: 267AOCSW017  
Sample Type: Field Sample

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
Aluminum	7429-90-5	µg/L	50	17.8	B	P		99M1207L	02/12/99	02/15/99	1	CLP-Metal
Antimony	7440-36-0	µg/L	8	<2.0	U	P		99M1207L	02/12/99	02/15/99	1	CLP-Metal
Arsenic	7440-38-2	µg/L	10	1.5	B	P		99M1207L	02/12/99	02/15/99	1	CLP-Metal
Barium	7440-39-3	µg/L	200	<0.87	U	P		99M1207L	02/12/99	02/15/99	1	CLP-Metal
Beryllium	7440-41-7	µg/L	4.0	<0.11	U	P		99M1207L	02/12/99	02/15/99	1	CLP-Metal
Cadmium	7440-43-9	µg/L	1	<0.21	U	P		99M1207L	02/12/99	02/15/99	1	CLP-Metal
Calcium	7440-70-2	µg/L	5000	94.9	B	P	E	99M1207L	02/12/99	02/15/99	1	CLP-Metal
Chromium	7440-47-3	µg/L	10	<0.53	U	P		99M1207L	02/12/99	02/15/99	1	CLP-Metal
Cobalt	7440-48-4	µg/L	50	<0.44	U	P		99M1207L	02/12/99	02/15/99	1	CLP-Metal
Copper	7440-50-8	µg/L	4	1.8	B	P		99M1207L	02/12/99	02/15/99	1	CLP-Metal
Iron	7439-89-6	µg/L	100	4.6	B	P	-	99M1207L	02/12/99	02/15/99	1	CLP-Metal
Lead	7439-92-1	µg/L	3	<0.81	U	P		99M1207L	02/12/99	02/15/99	1	CLP-Metal
Magnesium	7439-95-4	µg/L	5000	35.7	B	P		99M1207L	02/12/99	02/15/99	1	CLP-Metal
Manganese	7439-96-5	µg/L	15	<0.37	U	P		99M1207L	02/12/99	02/15/99	1	CLP-Metal
Mercury	7439-97-6	µg/L	0.2	0.32		CV		99M1232N	02/16/99	02/16/99	1	CLP-Meta
Molybdenum	7439-98-7	µg/L	5.0	<0.51	U	P	E	99M1207L	02/12/99	02/15/99	1	CLP-Metal
Nickel	7440-02-0	µg/L	8	<0.47	U	P		99M1207L	02/12/99	02/15/99	1	CLP-Metal
Potassium	7440-09-7	µg/L	5000	70.1	B	P	E	99M1207L	02/12/99	02/15/99	1	CLP-Metal
Selenium	7782-49-2	µg/L	5	<2.2	U	P		99M1207L	02/12/99	02/15/99	1	CLP-Metal
Silver	7440-22-4	µg/L	2	<0.26	U	P		99M1207L	02/12/99	02/15/99	1	CLP-Metal
Sodium	7440-23-5	µg/L	5000	<232	U	P		99M1207L	02/12/99	02/15/99	1	CLP-Metal
Thallium	7440-28-0	µg/L	2	2.5		P		99M1207L	02/12/99	02/15/99	1	CLP-Metal
Vanadium	7440-62-2	µg/L	50	<0.32	U	P		99M1207L	02/12/99	02/15/99	1	CLP-Metal
Zinc	7440-66-6	µg/L	20	1.4	B	P		99M1207L	02/12/99	02/15/99	1	CLP-Metal

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor  
 C Qualifier: U - Not Detected or less than IDL      B - Less than RL (PQL, EQL or CRDL), but greater than IDL.  
 Q Qualifier: N - Spike recovery out of control      \* - Duplicate analysis out of control  
                   W - Post digestion spike for GFAA out of control      E - Serial dilution difference out of control  
 M Qualifier: P - ICP      A - FLAA      F - GFAA      CV - Cold Vapor

Applied P & Ch Laboratory

13780 Magnolia Ave. Chino CA 91710

Tel: (909) 590-1828 Fax: (909) 590-1498

Submitted to:

Tetra Tech EM Inc.

Attention: Susan Gallagher

135 Main Street, Ste 1800

San Francisco CA 94105

Tel: (415)543-4880 Fax: (415)543-5480

**APCL Analytical Report**

Service ID #: 801-992325

Received: 03/06/99

Collected by: RL/JC

Extracted: 03/12/99

Collected on: 03/05/99

Tested: 03/09-17/99

Reported: 03/18/99

Sample Description: Soil from NWS Concord

Project Description: G0069-267A01

**Analysis of Soil Samples**

Component Analyzed	Method	Unit	CRDL (PQL)	Analysis Result	
				267AOCSB018 99-02325-1	
MOISTURE	ASTM-D2216	%Moisture	0.5	17.2	
PH	9045	pH unit	0.1	6.61	
CLP METALS-ROUTINE					
ALUMINUM	CLP-Metal	mg/kg	10.0	18,300	
ANTIMONY	CLP-Metal	mg/kg	1.2	0.83J	
ARSENIC	CLP-Metal	mg/kg	2.0	12.6	
BARIUM	CLP-Metal	mg/kg	40.0	149	
BERYLLIUM	CLP-Metal	mg/kg	0.80	0.13J	
CADMIUM	CLP-Metal	mg/kg	1.0	2.3	
CALCIUM	CLP-Metal	mg/kg	1000	31,300	
CHROMIUM	CLP-Metal	mg/kg	2.0	39.6	
COBALT	CLP-Metal	mg/kg	10.0	13.2	
COPPER	CLP-Metal	mg/kg	5.0	15.1	
IRON	CLP-Metal	mg/kg	20.0	19,400	
LEAD	CLP-Metal	mg/kg	0.60	9.8	
MAGNESIUM	CLP-Metal	mg/kg	1000	4,850	
MANGANESE	CLP-Metal	mg/kg	3.0	1,000	
MERCURY	CLP-Metal	mg/kg	0.10	0.094J	
MOLYBDENUM	CLP-Metal	mg/kg	1.0	< 1.2	
NICKEL	CLP-Metal	mg/kg	8.0	44.5	
POTASSIUM	CLP-Metal	mg/kg	1000	1,110J	
SELENIUM	CLP-Metal	mg/kg	1.0	1.6	
SILVER	CLP-Metal	mg/kg	2.0	< 2.4	
SODIUM	CLP-Metal	mg/kg	1000	711J	
THALLIUM	CLP-Metal	mg/kg	0.40	< 0.48	
VANADIUM	CLP-Metal	mg/kg	10.0	47.1	
ZINC	CLP-Metal	mg/kg	4.0	55.8	

**CLP-VOA**

**49708**

**Applied P & Ch Laboratory**  
**VOLATILE ORGANICS ANALYSIS DATA SHEET for Method CLP-VOA**

Client Name:	Tetra Tech EM Inc.	Project No:	G0069-267A0	Collection Date:	02/10/1999
Project ID:	NWS Concord	SDG Number:	991776	Collected by:	RL/CF
Sample ID:	<b>267A0CSB001</b>	Lab Sample ID:	99-1776-1	Received Date:	02/11/1999
Sample Type:	Field Sample	Sample Matrix	Soil	Moisture %:	9.9
Anal. Method:	CLP-VOA	Prep. Method:	5030	Instrument ID:	GC/MS: Q
Batch No:	99G1508	Prep. Date:	02/16/99	Anal. Date:	02/16/99
Data File Name:	1776-01	Prep. No:	-	Anal. Time:	02:27
Methanol Vol.	-	Sample Amount:	5 g	Dilution Factor:	1
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acetone	67-64-1	µg/kg	11	95	B
2	Benzene	71-43-2	µg/kg	11	<11	U
3	Bromodichloromethane	75-27-4	µg/kg	11	<11	U
4	Bromoform	75-25-2	µg/kg	11	<11	U
5	Bromomethane	74-83-9	µg/kg	11	<11	U
6	2-Butanone	78-93-3	µg/kg	11	<11	U
7	Carbon disulfide	75-15-0	µg/kg	11	<11	U
8	Carbon tetrachloride	56-23-5	µg/kg	11	<11	U
9	Chlorobenzene	108-90-7	µg/kg	11	<11	U
10	Dibromochloromethane	124-48-1	µg/kg	11	<11	U
11	Chloroethane	75-00-3	µg/kg	11	<11	U
12	Chloroform	67-66-3	µg/kg	11	<11	U
13	Chloromethane	74-87-3	µg/kg	11	<11	U
14	1,1-Dichloroethane	75-34-3	µg/kg	11	<11	U
15	1,2-Dichloroethane	107-06-2	µg/kg	11	<11	U
16	1,1-Dichloroethene	75-35-4	µg/kg	11	<11	U
17	1,2-Dichloroethene (Total)	540-59-0	µg/kg	11	<11	U
18	1,2-Dichloropropane	78-87-5	µg/kg	11	<11	U
19	cis-1,3-Dichloropropene	10061-01-5	µg/kg	11	<11	U
20	trans-1,3-Dichloropropene	10061-02-6	µg/kg	11	<11	U
21	Ethylbenzene	100-41-4	µg/kg	11	<11	U
22	2-Hexanone	591-78-6	µg/kg	11	<11	U
23	4-Methyl-2-pentanone	108-10-1	µg/kg	11	<11	U
24	Methylene chloride	75-09-2	µg/kg	11	2	J
25	Styrene	100-42-5	µg/kg	11	<11	U
26	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	11	<11	U
27	Tetrachloroethene	127-18-4	µg/kg	11	<11	U
28	Toluene	108-88-3	µg/kg	11	<11	U
29	1,1,1-Trichloroethane	71-55-6	µg/kg	11	<11	U
30	1,1,2-Trichloroethane	79-00-5	µg/kg	11	<11	U
31	Trichloroethene	79-01-6	µg/kg	11	<11	U
32	Vinyl chloride	75-01-4	µg/kg	11	<11	U
33	Xylene (total)	1330-20-7	µg/kg	11	<11	U

TIC (Tentative Identified Components)		RT (min)		
1	UNKNOWN	µg/kg	7.89	J

Surrogates	Control Limit, %	Surro. Rec.%
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49711

Continued

99-1776-1 CLP-VOA Datafile 1776-01

Surrogates		Control Limit, %	Surro. Rec.%
1	Toluene-d8	2037-26-5	84-138
2	4-Bromo-fluorobenzene (BFB)	460-00-4	59-113
3	1,2-Dichloroethane-d4	17060-07-0	70-121
# of out-of-control			105
			0
Internal Standard		Control Limit, %	IS Rec.%
1	Bromochloromethane	74-97-5	50-200
2	1,4-Difluorobenzene	540-36-3	50-200
3	Chlorobenzene-d5	3114-55-4	50-200
# of out-of-control			87
			0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL

J - Less than RL (PQL, EQL or CRDL), but greater  
than MDL, or an estimated result (e.g. for TIC)

E - Exceed calibration range

B - A positive value was found in the method blank

D - Diluted

49712

**Applied P & Ch Laboratory**  
**VOLATILE ORGANICS ANALYSIS DATA SHEET for Method CLP-VOA**

Client Name:	Tetra Tech EM Inc.	Project No:	G0069-267A0	Collection Date:	02/10/1999
Project ID:	NWS Concord	SDG Number:	991776	Collected by:	RL/CF
Sample ID:	<b>267A0CSB002</b>	Lab Sample ID:	99-1776-2	Received Date:	02/11/1999
Sample Type:	Field Sample	Sample Matrix	Soil	Moisture %:	10.8
Anal. Method:	CLP-VOA	Prep. Method:	5030	Instrument ID:	GC/MS: Q
Batch No:	99GI508	Prep. Date:	02/16/99	Anal. Date:	02/16/99
Data File Name:	1776-02	Prep. No:	-	Anal. Time:	03:01
Methanol Vol.	-	Sample Amount:	5 g	Dilution Factor:	1
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acetone	67-64-1	µg/kg	11	60	B
2	Benzene	71-43-2	µg/kg	11	<11	U
3	Bromodichloromethane	75-27-4	µg/kg	11	<11	U
4	Bromoform	75-25-2	µg/kg	11	<11	U
5	Bromomethane	74-83-9	µg/kg	11	<11	U
6	2-Butanone	78-93-3	µg/kg	11	<11	U
7	Carbon disulfide	75-15-0	µg/kg	11	<11	U
8	Carbon tetrachloride	56-23-5	µg/kg	11	<11	U
9	Chlorobenzene	108-90-7	µg/kg	11	<11	U
10	Dibromochloromethane	124-48-1	µg/kg	11	<11	U
11	Chloroethane	75-00-3	µg/kg	11	<11	U
12	Chloroform	67-66-3	µg/kg	11	<11	U
13	Chloromethane	74-87-3	µg/kg	11	<11	U
14	1,1-Dichloroethane	75-34-3	µg/kg	11	<11	U
15	1,2-Dichloroethane	107-06-2	µg/kg	11	<11	U
16	1,1-Dichloroethene	75-35-4	µg/kg	11	<11	U
17	1,2-Dichloroethene (Total)	540-59-0	µg/kg	11	<11	U
18	1,2-Dichloropropane	78-87-5	µg/kg	11	<11	U
19	cis-1,3-Dichloropropene	10061-01-5	µg/kg	11	<11	U
20	trans-1,3-Dichloropropene	10061-02-6	µg/kg	11	<11	U
21	Ethylbenzene	100-41-4	µg/kg	11	<11	U
22	2-Hexanone	591-78-6	µg/kg	11	<11	U
23	4-Methyl-2-pentanone	108-10-1	µg/kg	11	<11	U
24	Methylene chloride	75-09-2	µg/kg	11	1	J
25	Styrene	100-42-5	µg/kg	11	<11	U
26	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	11	<11	U
27	Tetrachloroethene	127-18-4	µg/kg	11	<11	U
28	Toluene	108-88-3	µg/kg	11	<11	U
29	1,1,1-Trichloroethane	71-55-6	µg/kg	11	<11	U
30	1,1,2-Trichloroethane	79-00-5	µg/kg	11	<11	U
31	Trichloroethene	79-01-6	µg/kg	11	<11	U
32	Vinyl chloride	75-01-4	µg/kg	11	<11	U
33	Xylene (total)	1330-20-7	µg/kg	11	<11	U

TIC (Tentative Identified Components)			RT (min)		
1	2-Propanol (iso-propanol)	67-63-0	µg/kg	6.24	7
Surrogates			Control Limit, %	Surro. Rec.%	49713

Continued

99-1776-2 CLP-VOA Datafile 1776-02

Surrogates		Control Limit, %	Surro. Rec.%
1	Toluene-d8	2037-26-5	84-138
2	4-Bromo-fluorobenzene (BFB)	460-00-4	59-113
3	1,2-Dichloroethane-d4	17060-07-0	70-121
# of out-of-control			0
Internal Standard		Control Limit, %	IS Rec.%
1	Bromo-chloromethane	74-97-5	50-200
2	1,4-Difluorobenzene	540-36-3	50-200
3	Chlorobenzene-d5	3114-55-4	50-200
# of out-of-control			0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL

J - Less than RL (PQL, EQL or CRDL), but greater  
than MDL, or an estimated result (e.g. for TIC)

E - Exceed calibration range

B - A positive value was found in the method blank

D - Diluted

49714

**Applied P & Ch Laboratory**  
**VOLATILE ORGANICS ANALYSIS DATA SHEET for Method CLP-VOA**

Client Name:	Tetra Tech EM Inc.	Project No:	G0069-267A0	Collection Date:	02/10/1999
Project ID:	NWS Concord	SDG Number:	991776	Collected by:	RL/CF
Sample ID:	<b>267A0CSB003</b>	Lab Sample ID:	99-1776-3	Received Date:	02/11/1999
Sample Type:	Field Sample	Sample Matrix	Soil	Moisture %:	14.9
Anal. Method:	CLP-VOA	Prep. Method:	5030	Instrument ID:	GC/MS: Q
Batch No:	99G1508	Prep. Date:	02/16/99	Anal. Date:	02/16/99
Data File Name:	1776-03	Prep. No:	-	Anal. Time:	03:35
Methanol Vol.	-	Sample Amount:	5 g	Dilution Factor:	1
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acetone	67-64-1	µg/kg	12	240	B
2	Benzene	71-43-2	µg/kg	12	<12	U
3	Bromodichloromethane	75-27-4	µg/kg	12	<12	U
4	Bromoform	75-25-2	µg/kg	12	<12	U
5	Bromomethane	74-83-9	µg/kg	12	<12	U
6	2-Butanone	78-93-3	µg/kg	12	<12	U
7	Carbon disulfide	75-15-0	µg/kg	12	<12	U
8	Carbon tetrachloride	56-23-5	µg/kg	12	<12	U
9	Chlorobenzene	108-90-7	µg/kg	12	<12	U
10	Dibromochloromethane	124-48-1	µg/kg	12	<12	U
11	Chloroethane	75-00-3	µg/kg	12	<12	U
12	Chloroform	67-66-3	µg/kg	12	<12	U
13	Chloromethane	74-87-3	µg/kg	12	<12	U
14	1,1-Dichloroethane	75-34-3	µg/kg	12	<12	U
15	1,2-Dichloroethane	107-06-2	µg/kg	12	<12	U
16	1,1-Dichloroethene	75-35-4	µg/kg	12	<12	U
17	1,2-Dichloroethene (Total)	540-59-0	µg/kg	12	<12	U
18	1,2-Dichloropropane	78-87-5	µg/kg	12	<12	U
19	cis-1,3-Dichloropropene	10061-01-5	µg/kg	12	<12	U
20	trans-1,3-Dichloropropene	10061-02-6	µg/kg	12	<12	U
21	Ethylbenzene	100-41-4	µg/kg	12	<12	U
22	2-Hexanone	591-78-6	µg/kg	12	<12	U
23	4-Methyl-2-pentanone	108-10-1	µg/kg	12	<12	U
24	Methylene chloride	75-09-2	µg/kg	12	1	J
25	Styrene	100-42-5	µg/kg	12	<12	U
26	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	12	<12	U
27	Tetrachloroethene	127-18-4	µg/kg	12	<12	U
28	Toluene	108-88-3	µg/kg	12	<12	U
29	1,1,1-Trichloroethane	71-55-6	µg/kg	12	<12	U
30	1,1,2-Trichloroethane	79-00-5	µg/kg	12	<12	U
31	Trichloroethene	79-01-6	µg/kg	12	<12	U
32	Vinyl chloride	75-01-4	µg/kg	12	<12	U
33	Xylene (total)	1330-20-7	µg/kg	12	<12	U

TIC (Tentative Identified Components)		RT (min)		
1	UNKNOWN	µg/kg	6.23	39
Surrogates		Control Limit, %	Surro. Rec.%	

49715

Continued

99-1776-3 CLP-VOA Datafile 1776-03

<b>Surrogates</b>		<b>Control Limit, %</b>	<b>Surro. Rec.%</b>
1	Toluene-d8	2037-26-5	84-138
2	4-Bromo-fluorobenzene (BFB)	460-00-4	59-113
3	1,2-Dichloroethane-d4	17060-07-0	70-121
# of out-of-control			109
			0
<b>Internal Standard</b>		<b>Control Limit, %</b>	<b>IS Rec.%</b>
1	Bromo-chloromethane	74-97-5	50-200
2	1,4-Difluorobenzene	540-36-3	50-200
3	Chlorobenzene-d5	3114-55-4	50-200
# of out-of-control			85
			0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL

J - Less than RL (PQL, EQL or CRDL), but greater  
than MDL, or an estimated result (e.g. for TIC)

E - Exceed calibration range

B - A positive value was found in the method blank

D - Diluted

49716

**Applied P & Ch Laboratory**  
**VOLATILE ORGANICS ANALYSIS DATA SHEET for Method CLP-VOA**

Client Name:	Tetra Tech EM Inc.	Project No:	G0069-267A0	Collection Date:	02/10/1999
Project ID:	NWS Concord	SDG Number:	991776	Collected by:	RL/CF
Sample ID:	<b>267A0CSB006</b>	Lab Sample ID:	99-1776-6	Received Date:	02/11/1999
Sample Type:	Field Sample	Sample Matrix	Soil	Moisture %:	37.8
Anal. Method:	CLP-VOA	Prep. Method:	5030	Instrument ID:	GC/MS: Q
Batch No:	99G1508	Prep. Date:	02/16/99	Anal. Date:	02/16/99
Data File Name:	1776-06	Prep. No:	-	Anal. Time:	04:09
Methanol Vol.	-	Sample Amount:	5 g	Dilution Factor:	1
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acetone	67-64-1	µg/kg	16	240	B
2	Benzene	71-43-2	µg/kg	16	<16	U
3	Bromodichloromethane	75-27-4	µg/kg	16	<16	U
4	Bromoform	75-25-2	µg/kg	16	<16	U
5	Bromomethane	74-83-9	µg/kg	16	<16	U
6	2-Butanone	78-93-3	µg/kg	16	<16	U
7	Carbon disulfide	75-15-0	µg/kg	16	<16	U
8	Carbon tetrachloride	56-23-5	µg/kg	16	<16	U
9	Chlorobenzene	108-90-7	µg/kg	16	<16	U
10	Dibromochloromethane	124-48-1	µg/kg	16	<16	U
11	Chloroethane	75-00-3	µg/kg	16	<16	U
12	Chloroform	67-66-3	µg/kg	16	<16	U
13	Chloromethane	74-87-3	µg/kg	16	<16	U
14	1,1-Dichloroethane	75-34-3	µg/kg	16	<16	U
15	1,2-Dichloroethane	107-06-2	µg/kg	16	<16	U
16	1,1-Dichloroethene	75-35-4	µg/kg	16	<16	U
17	1,2-Dichloroethene (Total)	540-59-0	µg/kg	16	<16	U
18	1,2-Dichloropropane	78-87-5	µg/kg	16	<16	U
19	cis-1,3-Dichloropropene	10061-01-5	µg/kg	16	<16	U
20	trans-1,3-Dichloropropene	10061-02-6	µg/kg	16	<16	U
21	Ethylbenzene	100-41-4	µg/kg	16	<16	U
22	2-Hexanone	591-78-6	µg/kg	16	<16	U
23	4-Methyl-2-pentanone	108-10-1	µg/kg	16	<16	U
24	Methylene chloride	75-09-2	µg/kg	16	3	J
25	Styrene	100-42-5	µg/kg	16	<16	U
26	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	16	<16	U
27	Tetrachloroethene	127-18-4	µg/kg	16	<16	U
28	Toluene	108-88-3	µg/kg	16	<16	U
29	1,1,1-Trichloroethane	71-55-6	µg/kg	16	<16	U
30	1,1,2-Trichloroethane	79-00-5	µg/kg	16	<16	U
31	Trichloroethene	79-01-6	µg/kg	16	<16	U
32	Vinyl chloride	75-01-4	µg/kg	16	<16	U
33	Xylene (total)	1330-20-7	µg/kg	16	<16	U

TIC (Tentative Identified Components)		RT (min)				
1	2-Propanol (iso-propanol)	67-63-0	µg/kg	6.24	15	JN

Surrogates	Control Limit, %	Surro. Rec.%
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49717

Continued

99-1776-6 CLP-VOA Datafile 1776-06

Surrogates		Control Limit, %	Surro. Rec.%
1	Toluene-d8	2037-26-5	84-138
2	4-Bromo-fluorobenzene (BFB)	460-00-4	59-113
3	1,2-Dichloroethane-d4	17060-07-0	70-121
# of out-of-control			114
			0
Internal Standard		Control Limit, %	IS Rec.%
1	Bromoform	74-97-5	50-200
2	1,4-Difluorobenzene	540-36-3	50-200
3	Chlorobenzene-d5	3114-55-4	50-200
# of out-of-control			73
			0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL

J - Less than RL (PQL, EQL or CRDL), but greater  
than MDL, or an estimated result (e.g. for TIC)

E - Exceed calibration range

B - A positive value was found in the method blank

D - Diluted

49718

**Applied P & Ch Laboratory**  
**VOLATILE ORGANICS ANALYSIS DATA SHEET for Method CLP-VOA**

Client Name:	Tetra Tech EM Inc.	Project No:	G0069-267A0	Collection Date:	02/10/1999
Project ID:	NWS Concord	SDG Number:	991776	Collected by:	RL/CF
Sample ID:	<b>267A0CSB007</b>	Lab Sample ID:	99-1776-7	Received Date:	02/11/1999
Sample Type:	Field Sample	Sample Matrix	Soil	Moisture %:	14.5
Anal. Method:	CLP-VOA	Prep. Method:	5030	Instrument ID:	GC/MS: Q
Batch No:	99G1508	Prep. Date:	02/16/99	Anal. Date:	02/16/99
Data File Name:	1776-07	Prep. No:	-	Anal. Time:	04:42
Methanol Vol.	-	Sample Amount:	5 g	Dilution Factor:	1
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acetone	67-64-1	µg/kg	12	16	B
2	Benzene	71-43-2	µg/kg	12	< 12	U
3	Bromodichloromethane	75-27-4	µg/kg	12	< 12	U
4	Bromoform	75-25-2	µg/kg	12	< 12	U
5	Bromomethane	74-83-9	µg/kg	12	< 12	U
6	2-Butanone	78-93-3	µg/kg	12	< 12	U
7	Carbon disulfide	75-15-0	µg/kg	12	< 12	U
8	Carbon tetrachloride	56-23-5	µg/kg	12	< 12	U
9	Chlorobenzene	108-90-7	µg/kg	12	< 12	U
10	Dibromochloromethane	124-48-1	µg/kg	12	< 12	U
11	Chloroethane	75-00-3	µg/kg	12	< 12	U
12	Chloroform	67-66-3	µg/kg	12	< 12	U
13	Chloromethane	74-87-3	µg/kg	12	< 12	U
14	1,1-Dichloroethane	75-34-3	µg/kg	12	< 12	U
15	1,2-Dichloroethane	107-06-2	µg/kg	12	< 12	U
16	1,1-Dichloroethene	75-35-4	µg/kg	12	< 12	U
17	1,2-Dichloroethene (Total)	540-59-0	µg/kg	12	< 12	U
18	1,2-Dichloropropane	78-87-5	µg/kg	12	< 12	U
19	cis-1,3-Dichloropropene	10061-01-5	µg/kg	12	< 12	U
20	trans-1,3-Dichloropropene	10061-02-6	µg/kg	12	< 12	U
21	Ethylbenzene	100-41-4	µg/kg	12	< 12	U
22	2-Hexanone	591-78-6	µg/kg	12	< 12	U
23	4-Methyl-2-pentanone	108-10-1	µg/kg	12	< 12	U
24	Methylene chloride	75-09-2	µg/kg	12	1	J
25	Styrene	100-42-5	µg/kg	12	< 12	U
26	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	12	< 12	U
27	Tetrachloroethene	127-18-4	µg/kg	12	< 12	U
28	Toluene	108-88-3	µg/kg	12	1	J
29	1,1,1-Trichloroethane	71-55-6	µg/kg	12	< 12	U
30	1,1,2-Trichloroethane	79-00-5	µg/kg	12	< 12	U
31	Trichloroethene	79-01-6	µg/kg	12	< 12	U
32	Vinyl chloride	75-01-4	µg/kg	12	< 12	U
33	Xylene (total)	1330-20-7	µg/kg	12	< 12	U

TIC (Tentative Identified Components)			RT (min)		
1	2-Propanol (iso-propanol)	67-63-0	µg/kg	6.24	6
Surrogates			Control Limit, %	Surro. Rec.%	
					49719

Continued

99-1776-7 CLP-VOA Datafile 1776-07

Surrogates		Control Limit, %	Surro. Rec.%
1	Toluene-d8	2037-26-5	84-138
2	4-Bromo-fluorobenzene (BFB)	460-00-4	59-113
3	1,2-Dichloroethane-d4	17060-07-0	70-121
# of out-of-control			107
			0
Internal Standard		Control Limit, %	IS Rec.%
1	Bromochloromethane	74-97-5	50-200
2	1,4-Difluorobenzene	540-36-3	50-200
3	Chlorobenzene-d5	3114-55-4	50-200
# of out-of-control			76
			0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL

J - Less than RL (PQL, EQL or CRDL), but greater  
than MDL, or an estimated result (e.g. for TIC)

E - Exceed calibration range

B - A positive value was found in the method blank

D - Diluted

49720

**Applied P & Ch Laboratory**  
**VOLATILE ORGANICS ANALYSIS DATA SHEET for Method CLP-VOA**

Client Name:	Tetra Tech EM Inc.	Project No:	G0069-267A0	Collection Date:	02/10/1999
Project ID:	NWS Concord	SDG Number:	991776	Collected by:	RL/CF
Sample ID:	<b>267A0CSB008</b>	Lab Sample ID:	99-1776-8	Received Date:	02/11/1999
Sample Type:	Field Sample	Sample Matrix	Soil	Moisture %:	17.4
Anal. Method:	CLP-VOA	Prep. Method:	5030	Instrument ID:	GC/MS: Q
Batch No:	99G1508	Prep. Date:	02/16/99	Anal. Date:	02/16/99
Data File Name:	1776-08	Prep. No:	-	Anal. Time:	05:16
Methanol Vol.	-	Sample Amount:	5 g	Dilution Factor:	1
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acetone	67-64-1	µg/kg	12	78	B
2	Benzene	71-43-2	µg/kg	12	<12	U
3	Bromodichloromethane	75-27-4	µg/kg	12	<12	U
4	Bromoform	75-25-2	µg/kg	12	<12	U
5	Bromomethane	74-83-9	µg/kg	12	<12	U
6	2-Butanone	78-93-3	µg/kg	12	<12	U
7	Carbon disulfide	75-15-0	µg/kg	12	<12	U
8	Carbon tetrachloride	56-23-5	µg/kg	12	<12	U
9	Chlorobenzene	108-90-7	µg/kg	12	<12	U
10	Dibromochloromethane	124-48-1	µg/kg	12	<12	U
11	Chloroethane	75-00-3	µg/kg	12	<12	U
12	Chloroform	67-66-3	µg/kg	12	<12	U
13	Chloromethane	74-87-3	µg/kg	12	<12	U
14	1,1-Dichloroethane	75-34-3	µg/kg	12	<12	U
15	1,2-Dichloroethane	107-06-2	µg/kg	12	<12	U
16	1,1-Dichloroethene	75-35-4	µg/kg	12	<12	U
17	1,2-Dichloroethene (Total)	540-59-0	µg/kg	12	<12	U
18	1,2-Dichloropropane	78-87-5	µg/kg	12	<12	U
19	cis-1,3-Dichloropropene	10061-01-5	µg/kg	12	<12	U
20	trans-1,3-Dichloropropene	10061-02-6	µg/kg	12	<12	U
21	Ethylbenzene	100-41-4	µg/kg	12	<12	U
22	2-Hexanone	591-78-6	µg/kg	12	<12	U
23	4-Methyl-2-pentanone	108-10-1	µg/kg	12	<12	U
24	Methylene chloride	75-09-2	µg/kg	12	1	J
25	Styrene	100-42-5	µg/kg	12	<12	U
26	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	12	<12	U
27	Tetrachloroethene	127-18-4	µg/kg	12	<12	U
28	Toluene	108-88-3	µg/kg	12	<12	U
29	1,1,1-Trichloroethane	71-55-6	µg/kg	12	<12	U
30	1,1,2-Trichloroethane	79-00-5	µg/kg	12	<12	U
31	Trichloroethene	79-01-6	µg/kg	12	<12	U
32	Vinyl chloride	75-01-4	µg/kg	12	<12	U
33	Xylene (total)	1330-20-7	µg/kg	12	<12	U

TIC (Tentative Identified Components)			RT (min)		
1	2-Propanol (iso-propanol)	67-63-0	µg/kg	6.23	21
Surrogates			Control Limit, %	Surro. Rec.%	

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<b>Surrogates</b>		<b>Control Limit, %</b>	<b>Surro. Rec.%</b>
1	Toluene-d8	2037-26-5	84-138
2	4-Bromo-fluorobenzene (BFB)	460-00-4	59-113
3	1,2-Dichloroethane-d4	17060-07-0	70-121
# of out-of-control			108
			0

<b>Internal Standard</b>		<b>Control Limit, %</b>	<b>IS Rec.%</b>
1	Bromoform	74-97-5	50-200
2	1,4-Difluorobenzene	540-36-3	50-200
3	Chlorobenzene-d5	3114-55-4	50-200
# of out-of-control			77
			0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL

E - Exceed calibration range

J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)

B - A positive value was found in the method blank

D - Diluted

49722

Applied P & Ch Laboratory  
VOLATILE ORGANICS ANALYSIS DATA SHEET for Method CLP-VOC

Client Name:	Tetra Tech EM Inc.	Project No:	G0069-267A01	Collection Date:	02/12/1999
Project ID:	PO#992208	SDG Number:	991825	Collected by:	Lantz/Carlson
Sample ID:	<b>267AOCSB013</b>	Lab Sample ID:	99-1825-4	Received Date:	02/13/1999
Sample Type:	Field Sample	Sample Matrix	Soil	Moisture %:	22.3
Anal. Method:	CLP-VOC	Prep. Method:	5030	Instrument ID:	GC/MS: Q
Batch No:	99G1469	Prep. Date:	02/15/99	Anal. Date:	02/15/99
Data File Name:	1825-04	Prep. No:	-	Anal. Time:	21:23
Methanol Vol.	-	Sample Amount:	5 g	Dilution Factor:	1
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acetone	67-64-1	µg/kg	13	11	JB
2	Benzene	71-43-2	µg/kg	13	<13	U
3	Bromodichloromethane	75-27-4	µg/kg	13	<13	U
4	Bromoform	75-25-2	µg/kg	13	<13	U
5	Bromomethane	74-83-9	µg/kg	13	<13	U
6	2-Butanone (MEK)	78-93-3	µg/kg	13	<13	U
7	Carbon disulfide	75-15-0	µg/kg	13	<13	U
8	Carbon tetrachloride	56-23-5	µg/kg	13	<13	U
9	Chlorobenzene	108-90-7	µg/kg	13	<13	U
10	Chlorodibromomethane	124-48-1	µg/kg	13	<13	U
11	Chloroethane	75-00-3	µg/kg	13	<13	U
12	Chloroform	67-66-3	µg/kg	13	<13	U
13	Chloromethane	74-87-3	µg/kg	13	<13	U
14	1,1-Dichloroethane	75-34-3	µg/kg	13	<13	U
15	1,2-Dichloroethane	107-06-2	µg/kg	13	<13	U
16	1,1-Dichloroethene	75-35-4	µg/kg	13	<13	U
17	1,2-Dichloroethene (Total)	540-59-0	µg/kg	13	<13	U
18	1,2-Dichloropropane	78-87-5	µg/kg	13	<13	U
19	cis-1,3-Dichloropropene	10061-01-5	µg/kg	13	<13	U
20	trans-1,3-Dichloropropene	10061-02-6	µg/kg	13	<13	U
21	Ethylbenzene	100-41-4	µg/kg	13	<13	U
22	2-Hexanone	591-78-6	µg/kg	13	<13	U
23	4-Methyl-2-pentanone (MIBK)	108-10-1	µg/kg	13	<13	U
24	Methylene chloride	75-09-2	µg/kg	13	1	J
25	Styrene	100-42-5	µg/kg	13	<13	U
26	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	13	<13	U
27	Tetrachloroethene	127-18-4	µg/kg	13	<13	U
28	Toluene	108-88-3	µg/kg	13	<13	U
29	1,1,1-Trichloroethane	71-55-6	µg/kg	13	<13	U
30	1,1,2-Trichloroethane	79-00-5	µg/kg	13	<13	U
31	Trichloroethene	79-01-6	µg/kg	13	<13	U
32	Vinyl chloride	75-01-4	µg/kg	13	<13	U
33	Xylenes (total)	1330-20-7	µg/kg	13	<13	U

TIC (Tentative Identified Components): Not Found

Surrogates		Control Limit, %	Surro. Rec.%
1	Toluene-d8	2037-26-5	84-138
2	4-Bromo-fluorobenzene (BFB)	460-00-4	59-113

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<b>Surrogates</b>		<b>Control Limit, %</b>	<b>Surro. Rec.%</b>
3	1,2-Dichloroethane-d4	17060-07-0	70-121
# of out-of-control			88
			0
<b>Internal Standard</b>		<b>Control Limit, %</b>	<b>IS Rec.%</b>
1	Bromochloromethane	74-97-5	50-200
2	1,4-Difluorobenzene	540-36-3	50-200
3	Chlorobenzene-d5	3114-55-4	50-200
# of out-of-control			125
			119
			116
			0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL

J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)

E - Exceed calibration range

B - A positive value was found in the method blank

D - Diluted

56714

Applied P & Ch Laboratory  
VOLATILE ORGANICS ANALYSIS DATA SHEET for Method CLP-VOC

Client Name:	Tetra Tech EM Inc.	Project No:	G0069-267A01	Collection Date:	02/12/1999
Project ID:	PO#992208	SDG Number:	991825	Collected by:	Lantz/Carlson
Sample ID:	<b>267AOCSB014</b>	Lab Sample ID:	99-1825-5	Received Date:	02/13/1999
Sample Type:	Field Sample	Sample Matrix	Soil	Moisture %:	36.4
Anal. Method:	CLP-VOC	Prep. Method:	5030	Instrument ID:	GC/MS: Q
Batch No:	99G1469	Prep. Date:	02/15/99	Anal. Date:	02/15/99
Data File Name:	1825-05	Prep. No:	-	Anal. Time:	21:57
Methanol Vol.	-	Sample Amount:	5 g	Dilution Factor:	1
Test Level:	Low	Sparge Size:	5 mL	Heated Purge: (Y/N)	Y

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acetone	67-64-1	µg/kg	16	9	JB
2	Benzene	71-43-2	µg/kg	16	<16	U
3	Bromodichloromethane	75-27-4	µg/kg	16	<16	U
4	Bromoform	75-25-2	µg/kg	16	<16	U
5	Bromomethane	74-83-9	µg/kg	16	<16	U
6	2-Butanone (MEK)	78-93-3	µg/kg	16	<16	U
7	Carbon disulfide	75-15-0	µg/kg	16	<16	U
8	Carbon tetrachloride	56-23-5	µg/kg	16	<16	U
9	Chlorobenzene	108-90-7	µg/kg	16	<16	U
10	Chlorodibromomethane	124-48-1	µg/kg	16	<16	U
11	Chloroethane	75-00-3	µg/kg	16	<16	U
12	Chloroform	67-66-3	µg/kg	16	<16	U
13	Chloromethane	74-87-3	µg/kg	16	<16	U
14	1,1-Dichloroethane	75-34-3	µg/kg	16	<16	U
15	1,2-Dichloroethane	107-06-2	µg/kg	16	<16	U
16	1,1-Dichloroethene	75-35-4	µg/kg	16	<16	U
17	1,2-Dichloroethene (Total)	540-59-0	µg/kg	16	<16	U
18	1,2-Dichloropropane	78-87-5	µg/kg	16	<16	U
19	cis-1,3-Dichloropropene	10061-01-5	µg/kg	16	<16	U
20	trans-1,3-Dichloropropene	10061-02-6	µg/kg	16	<16	U
21	Ethylbenzene	100-41-4	µg/kg	16	<16	U
22	2-Hexanone	591-78-6	µg/kg	16	<16	U
23	4-Methyl-2-pentanone (MIBK)	108-10-1	µg/kg	16	<16	U
24	Methylene chloride	75-09-2	µg/kg	16	2	J
25	Styrene	100-42-5	µg/kg	16	<16	U
26	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	16	<16	U
27	Tetrachloroethene	127-18-4	µg/kg	16	<16	U
28	Toluene	108-88-3	µg/kg	16	5	J
29	1,1,1-Trichloroethane	71-55-6	µg/kg	16	<16	U
30	1,1,2-Trichloroethane	79-00-5	µg/kg	16	<16	U
31	Trichloroethene	79-01-6	µg/kg	16	<16	U
32	Vinyl chloride	75-01-4	µg/kg	16	<16	U
33	Xylenes (total)	1330-20-7	µg/kg	16	<16	U

TIC (Tentative Identified Components): Not Found

Surrogates		Control Limit, %	Surro. Rec.%
1	Toluene-d8	2037-26-5	84-138
2	4-Bromo-fluorobenzene (BFB)	460-00-4	59-113

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Surrogates			Control Limit, %	Surro. Rec.%
3	1,2-Dichloroethane-d4	17060-07-0	70-121	87
# of out-of-control				0
Internal Standard			Control Limit, %	IS Rec.%
1	Bromochloromethane	74-97-5	50-200	125
2	1,4-Difluorobenzene	540-36-3	50-200	124
3	Chlorobenzene-d5	3114-55-4	50-200	120
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL

J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)

E - Exceed calibration range

B - A positive value was found in the method blank

D - Diluted

56716

**Applied P & Ch Laboratory**  
**VOLATILE ORGANICS ANALYSIS DATA SHEET for Method CLP-VOC**

Client Name:	Tetra Tech EM Inc.	Project No:	G0069-267A01	Collection Date:	02/12/1999
Project ID:	PO#992208	SDG Number:	991825	Collected by:	Lantz/Carlson
Sample ID:	<b>267AOCSW017</b>	Lab Sample ID:	99-1825-8	Received Date:	02/13/1999
Sample Type:	Field Sample	Sample Matrix	Water	Moisture %:	-
Anal. Method:	CLP-VOC	Prep. Method:	5030	Instrument ID:	GC/MS: G
Batch No:	99G1517	Prep. Date:	02/17/99	Anal. Date:	02/17/99
Data File Name:	1825-08	Prep. No:	-	Anal. Time:	02:40
Methanol Vol.	-	Sample Amount:	25 mL	Dilution Factor:	1
Test Level:	Low	Sparge Size:	25 mL	Heated Purge: (Y/N)	N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acetone	67-64-1	µg/L	10	12	
2	Benzene	71-43-2	µg/L	10	<10	U
3	Bromodichloromethane	75-27-4	µg/L	10	<10	U
4	Bromoform	75-25-2	µg/L	10	<10	U
5	Bromomethane	74-83-9	µg/L	10	<10	U
6	2-Butanone (MEK)	78-93-3	µg/L	10	0.8	J
7	Carbon disulfide	75-15-0	µg/L	10	<10	U
8	Carbon tetrachloride	56-23-5	µg/L	10	<10	U
9	Chlorobenzene	108-90-7	µg/L	10	<10	U
10	Chlorodibromomethane	124-48-1	µg/L	10	<10	U
11	Chloroethane	75-00-3	µg/L	10	<10	U
12	Chloroform	67-66-3	µg/L	10	3	J
13	Chloromethane	74-87-3	µg/L	10	<10	U
14	1,1-Dichloroethane	75-34-3	µg/L	10	<10	U
15	1,2-Dichloroethane	107-06-2	µg/L	10	<10	U
16	1,1-Dichloroethene	75-35-4	µg/L	10	<10	U
17	1,2-Dichloroethene (Total)	540-59-0	µg/L	10	6	J
18	1,2-Dichloropropane	78-87-5	µg/L	10	<10	U
19	cis-1,3-Dichloropropene	10061-01-5	µg/L	10	<10	U
20	trans-1,3-Dichloropropene	10061-02-6	µg/L	10	<10	U
21	Ethylbenzene	100-41-4	µg/L	10	<10	U
22	2-Hexanone	591-78-6	µg/L	10	<10	U
23	4-Methyl-2-pentanone (MIBK)	108-10-1	µg/L	10	<10	U
24	Methylene chloride	75-09-2	µg/L	10	0.4	J
25	Styrene	100-42-5	µg/L	10	<10	U
26	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	10	<10	U
27	Tetrachloroethene	127-18-4	µg/L	10	<10	U
28	Toluene	108-88-3	µg/L	10	<10	U
29	1,1,1-Trichloroethane	71-55-6	µg/L	10	<10	U
30	1,1,2-Trichloroethane	79-00-5	µg/L	10	<10	U
31	Trichloroethene	79-01-6	µg/L	10	<10	U
32	Vinyl chloride	75-01-4	µg/L	10	<10	U
33	Xylenes (total)	1330-20-7	µg/L	10	<10	U
<b>TIC (Tentative Identified Components)</b>				<b>RT (min)</b>		
1	UNKNOWN		µg/L	3.79	4	J
2	UNKNOWN		µg/L	15.48	2	J
3	UNKNOWN		µg/L	20.76	1	
4	UNKNOWN		µg/L	20.88	2	

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
5	Cyclotetrasiloxane, octamethyl-	556-67-2	µg/L	21.05	3	JN
<b>Surrogates</b>						
1	Toluene-d8	2037-26-5		88-110	100	
2	4-Bromo-fluorobenzene (BFB)	460-00-4		86-115	105	
3	1,2-Dichloroethane-d4	17060-07-0		76-114	102	
# of out-of-control						
<b>Internal Standard</b>						
1	Bromochloromethane	74-97-5		50-200	88	
2	1,4-Difluorobenzene	540-36-3		50-200	85	
3	Chlorobenzene-d5	3114-55-4		50-200	90	
# of out-of-control						

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL

E - Exceed calibration range

J - Less than RL (PQL, EQL or CRDL), but greater  
than MDL, or an estimated result (e.g. for TIC)

B - A positive value was found in the method blank  
D - Diluted

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Applied P & Ch Laboratory

13760 Magnolia Ave. Chino CA 91710

Tel: (809) 590-1828 Fax: (809) 590-1498

**APCL Analytical Report**

Component Analyzed	Method	Unit	CRDL (PQL)	Analysis Result
				267AOCSB018
<b>CLP: VOC BY GC/MS</b>				
Dilution Factor				1
ACETONE	CLP-VOC	µg/kg	10	13
BENZENE	CLP-VOC	µg/kg	10	<12
BROMODICHLOROMETHANE	CLP-VOC	µg/kg	10	<12
BROMOFORM	CLP-VOC	µg/kg	10	<12
BROMOMETHANE	CLP-VOC	µg/kg	10	<12
2-BUTANONE (MEK)	CLP-VOC	µg/kg	10	<12
CARBON DISULFIDE	CLP-VOC	µg/kg	10	<12
CARBON TETRACHLORIDE	CLP-VOC	µg/kg	10	<12
CHLOROBENZENE	CLP-VOC	µg/kg	10	<12
CHLORODIBROMOMETHANE	CLP-VOC	µg/kg	10	<12
CHLOROETHANE	CLP-VOC	µg/kg	10	<12
CHLOROFORM	CLP-VOC	µg/kg	10	<12
CHLOROMETHANE	CLP-VOC	µg/kg	10	<12
1,1-DICHLOROETHANE	CLP-VOC	µg/kg	10	<12
1,2-DICHLOROETHANE	CLP-VOC	µg/kg	10	<12
1,1-DICHLOROETHENE	CLP-VOC	µg/kg	10	<12
1,2-DICHLOROETHENE (TOTAL)	CLP-VOC	µg/kg	10	<12
1,2-DICHLOROPROPANE	CLP-VOC	µg/kg	10	<12
CIS-1,3-DICHLOROPROPENE	CLP-VOC	µg/kg	10	<12
TRANS-1,3-DICHLOROPROPENE	CLP-VOC	µg/kg	10	<12
ETHYLBENZENE	CLP-VOC	µg/kg	10	<12
2-HEXANONE	CLP-VOC	µg/kg	10	<12
4-METHYL-2-PENTANONE (MIBK)	CLP-VOC	µg/kg	10	<12
METHYLENE CHLORIDE	CLP-VOC	µg/kg	10	13
STYRENE	CLP-VOC	µg/kg	10	<12
1,1,2,2-TETRACHLOROETHANE	CLP-VOC	µg/kg	10	<12
TETRACHLOROETHENE	CLP-VOC	µg/kg	10	<12
TOLUENE	CLP-VOC	µg/kg	10	<12
1,1,1-TRICHLOROETHANE	CLP-VOC	µg/kg	10	<12
1,1,2-TRICHLOROETHANE	CLP-VOC	µg/kg	10	<12
TRICHLOROETHENE	CLP-VOC	µg/kg	10	<12
VINYL-CHLORIDE	CLP-VOC	µg/kg	10	<12
XYLENES (TOTAL)	CLP-VOC	µg/kg	10	<12

**CLP-SVOC**

**56745**

Applied P & Ch Laboratory  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET for Method CLP-SVOC

Client Name:	Tetra Tech EM Inc.	Project No:	G0069-267A0	Collection Date:	02/10/1999
Project ID:	NWS Concord	SDG Number:	991776	Collected by:	RL/CF
Sample ID:	267A0CSB001	Lab Sample ID:	99-1776-1	Received Date:	02/11/1999
Sample Type:	Field Sample	Sample Matrix	Soil	Moisture %:	9.9
Anal. Method:	CLP-SVOC	Prep. Method:	3550	Instrument ID:	GC/MS: Z
Batch No:	99G1472	Prep. Date:	02/12/99	Anal. Date:	02/17/99
Data File Name:	1776-01	Prep. No:	1 of 1	Anal. Time:	02:16
Extract Vol.	4.0 mL	Sample Amount:	30.0 g	Dilution Factor:	4

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	1500	< 1500	U
2	Acenaphthylene	208-96-8	µg/kg	1500	< 1500	U
3	Anthracene	120-12-7	µg/kg	1500	< 1500	U
4	Benzo(a)anthracene	56-55-3	µg/kg	1500	< 1500	U
5	Benzo(a)pyrene	50-32-8	µg/kg	1500	< 1500	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	1500	< 1500	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	1500	< 1500	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	1500	< 1500	U
9	Bis(2-chloroethoxy)methane	111-91-1	µg/kg	1500	< 1500	U
10	Bis(2-chloroethyl)ether	111-44-4	µg/kg	1500	< 1500	U
11	2,2'-oxybis(1-chloropropane)	108-60-1	µg/kg	1500	< 1500	U
12	Bis(2-ethylhexyl)phthalate	117-81-7	µg/kg	580	170	J
13	4-Bromophenyl-phenylether	101-55-3	µg/kg	1500	< 1500	U
14	ButylBenzylPhthalate	85-68-7	µg/kg	1500	< 1500	U
15	Carbazole	86-74-8	µg/kg	1500	< 1500	U
16	4-Chloro-3-methylphenol	59-50-7	µg/kg	1500	< 1500	U
17	4-Chloroaniline	106-47-8	µg/kg	1500	< 1500	U
18	2-Chloronaphthalene	91-58-7	µg/kg	1500	< 1500	U
19	2-Chlorophenol	95-57-8	µg/kg	1500	< 1500	U
20	4-Chlorophenyl-phenylether	7005-72-3	µg/kg	1500	< 1500	U
21	Chrysene	218-01-9	µg/kg	1500	< 1500	U
22	Di-n-butylphthalate	84-74-2	µg/kg	1500	< 1500	U
23	Di-n-octylphthalate	117-84-0	µg/kg	1500	< 1500	U
24	Dibenz(a,h)anthracene	53-70-3	µg/kg	1500	< 1500	U
25	Dibenzofuran	132-64-9	µg/kg	1500	< 1500	U
26	1,2-Dichlorobenzene	95-50-1	µg/kg	710	< 710	U
27	1,3-Dichlorobenzene	541-73-1	µg/kg	710	< 710	U
28	1,4-Dichlorobenzene	106-46-7	µg/kg	710	< 710	U
29	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1500	< 1500	U
30	2,4-Dichlorophenol	120-83-2	µg/kg	1500	< 1500	U
31	Diethylphthalate	84-66-2	µg/kg	1500	< 1500	U
32	Dimethylphthalate	131-11-3	µg/kg	1500	< 1500	U
33	2,4-Dimethylphenol	105-67-9	µg/kg	1500	< 1500	U
34	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	3700	< 3700	U
35	2,4-Dinitrophenol	51-28-5	µg/kg	3700	< 3700	U
36	2,4-Dinitrotoluene	121-14-2	µg/kg	1500	< 1500	U
37	2,6-Dinitrotoluene	606-20-2	µg/kg	1500	< 1500	U
38	Fluoranthene	206-44-0	µg/kg	1500	< 1500	U
39	Fluorene	86-73-7	µg/kg	1500	< 1500	U
40	Hexachlorobenzene	118-74-1	µg/kg	1500	< 1500	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorobutadiene	87-68-3	µg/kg	1500	<1500	U
42	Hexachlorocyclopentadiene	77-47-4	µg/kg	1500	<1500	U
43	Hexachloroethane	67-72-1	µg/kg	1500	<1500	U
44	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	1500	<1500	U
45	Isophorone	78-59-1	µg/kg	1500	<1500	U
46	2-Methylnaphthalene	91-57-6	µg/kg	1500	<1500	U
47	2-Methylphenol	95-48-7	µg/kg	1500	<1500	U
48	4-Methylphenol	106-44-5	µg/kg	1500	<1500	U
49	Naphthalene	91-20-3	µg/kg	1500	<1500	U
50	2-Nitroaniline	88-74-4	µg/kg	3700	<3700	U
51	3-Nitroaniline	99-09-2	µg/kg	3700	<3700	U
52	4-Nitroaniline	100-01-6	µg/kg	3700	<3700	U
53	Nitrobenzene	98-95-3	µg/kg	1500	<1500	U
54	2-Nitrophenol	88-75-5	µg/kg	1500	<1500	U
55	4-Nitrophenol	100-02-7	µg/kg	3700	<3700	U
56	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	1500	<1500	U
57	N-Nitrosodiphenylamine (1)	86-30-6	µg/kg	1500	<1500	U
58	Pentachlorophenol	87-86-5	µg/kg	3700	<3700	U
59	Phenanthrene	85-01-8	µg/kg	1500	<3700	U
60	Phenol	108-95-2	µg/kg	1500	<1500	U
61	Pyrene	129-00-0	µg/kg	1500	<1500	U
62	1,2,4-Trichlorobenzene	120-82-1	µg/kg	1500	<1500	U
63	2,4,5-Trichlorophenol	95-95-4	µg/kg	3700	<3700	U
64	2,4,6-Trichlorophenol	88-06-2	µg/kg	1500	<1500	U

## TIC (Tentative Identified Components)

RT (min)

1	UNKNOWN		µg/kg	24.59	520	J
2	UNKNOWN		µg/kg	24.80	880	J
3	5.alpha.,8.alpha.,14.beta.-Chol	55123-81-4	µg/kg	25.29	810	JN
4	UNKNOWN		µg/kg	25.67	860	J
5	Octadecane, C <sub>18</sub>	593-45-3	µg/kg	26.69	1400	JN
6	UNKNOWN		µg/kg	27.02	1000	J

## Surrogates

Control Limit, %

Surro. Rec.%

1	Nitrobenzene-d <sub>5</sub>	4165-60-0	23-120	56
2	2-Fluorobiphenyl	321-60-8	30-115	65
3	Terphenyl-d <sub>14</sub>	1718-51-0	18-137	132
4	Phenol-d <sub>5</sub>	4165-62-2	24-113	66
5	2-Fluorophenol	367-12-4	25-121	55
6	2,4,6-Tribromophenol	118-79-6	19-122	80
7	2-Chlorophenol-d <sub>4</sub>		20-130	60
8	1,2-Dichlorobenzene-d <sub>4</sub>	2199-69-1	20-130	52
# of out-of-control				
				0

## Internal Standard

Control Limit, %

IS Rec.%

1	1,4-Dichlorobenzene-d <sub>4</sub>	3855-82-1	50-200	120
2	Naphthalene-d <sub>8</sub>	1146-65-2	50-200	125
3	Acenaphthene-d <sub>10</sub>	15067-26-2	50-200	128
4	Phenanthrene-d <sub>10</sub>	1517-22-2	50-200	128
5	Chrysene-d <sub>12</sub>	1719-03-5	50-200	110

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Continued

99-1776-1 CLP-SVOC Datafile 1776-01

Internal Standard		Control Limit, %	IS Rec.%
6	Perylene-d12	50-200	60
# of out-of-control			0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL

J - Less than RL (PQL, EQL or CRDL), but greater  
than MDL, or an estimated result (e.g. for TIC)

E - Exceed calibration range

B - A positive value was found in the method blank

D - Diluted

49741

**Applied P & Ch Laboratory**  
**SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET for Method CLP-SVOC**

Client Name:	Tetra Tech EM Inc.	Project No.:	G0069-267A0	Collection Date:	02/10/1999
Project ID:	NWS Concord	SDG Number:	991776	Collected by:	RL/CF
Sample ID:	267A0CSB002	Lab Sample ID:	99-1776-2	Received Date:	02/11/1999
Sample Type:	Field Sample	Sample Matrix:	Soil	Moisture %:	10.8
Anal. Method:	CLP-SVOC	Prep. Method:	3550	Instrument ID:	GC/MS: Z
Batch No:	99G1472	Prep. Date:	02/12/99	Anal. Date:	02/17/99
Data File Name:	1776-02	Prep. No:	1 of 1	Anal. Time:	00:20
Extract Vol.	4.0 mL	Sample Amount:	30.0 g	Dilution Factor:	1

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	370	<370	U
2	Acenaphthylene	208-96-8	µg/kg	370	<370	U
3	Anthracene	120-12-7	µg/kg	370	<370	U
4	Benzo(a)anthracene	56-55-3	µg/kg	370	<370	U
5	Benzo(a)pyrene	50-32-8	µg/kg	370	<370	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	370	<370	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	370	<370	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	370	<370	U
9	Bis(2-chloroethoxy)methane	111-91-1	µg/kg	370	<370	U
10	Bis(2-chloroethyl)ether	111-44-4	µg/kg	370	<370	U
11	2,2'-oxybis(1-chloropropane)	108-60-1	µg/kg	370	<370	U
12	Bis(2-ethylhexyl)phthalate	117-81-7	µg/kg	150	<150	U
13	4-Bromophenyl-phenylether	101-55-3	µg/kg	370	<370	U
14	ButylBenzylPhthalate	85-68-7	µg/kg	370	<370	U
15	Carbazole	86-74-8	µg/kg	370	<370	U
16	4-Chloro-3-methylphenol	59-50-7	µg/kg	370	<370	U
17	4-Chloroaniline	106-47-8	µg/kg	370	<370	U
18	2-Chloronaphthalene	91-58-7	µg/kg	370	<370	U
19	2-Chlorophenol	95-57-8	µg/kg	370	<370	U
20	4-Chlorophenyl-phenylether	7005-72-3	µg/kg	370	<370	U
21	Chrysene	218-01-9	µg/kg	370	<370	U
22	Di-n-butylphthalate	84-74-2	µg/kg	370	<370	U
23	Di-n-octylphthalate	117-84-0	µg/kg	370	<370	U
24	Dibenz(a,h)anthracene	53-70-3	µg/kg	370	<370	U
25	Dibenzofuran	132-64-9	µg/kg	370	<370	U
26	1,2-Dichlorobenzene	95-50-1	µg/kg	180	<180	U
27	1,3-Dichlorobenzene	541-73-1	µg/kg	180	<180	U
28	1,4-Dichlorobenzene	106-46-7	µg/kg	180	<180	U
29	3,3'-Dichlorobenzidine	91-94-1	µg/kg	370	<370	U
30	2,4-Dichlorophenol	120-83-2	µg/kg	370	<370	U
31	Diethylphthalate	84-66-2	µg/kg	370	<370	U
32	Dimethylphthalate	131-11-3	µg/kg	370	<370	U
33	2,4-Dimethylphenol	105-67-9	µg/kg	370	<370	U
34	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	930	<930	U
35	2,4-Dinitrophenol	51-28-5	µg/kg	930	<930	U
36	2,4-Dinitrotoluene	121-14-2	µg/kg	370	<370	U
37	2,6-Dinitrotoluene	606-20-2	µg/kg	370	<370	U
38	Fluoranthene	206-44-0	µg/kg	370	<370	U
39	Fluorene	86-73-7	µg/kg	370	<370	U
40	Hexachlorobenzene	118-74-1	µg/kg	370	<370	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorobutadiene	87-68-3	µg/kg	370	<370	U
42	Hexachlorocyclopentadiene	77-47-4	µg/kg	370	<370	U
43	Hexachloroethane	67-72-1	µg/kg	370	<370	U
44	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	370	<370	U
45	Isophorone	78-59-1	µg/kg	370	<370	U
46	2-Methylnaphthalene	91-57-6	µg/kg	370	<370	U
47	2-Methylphenol	95-48-7	µg/kg	370	<370	U
48	4-Methylphenol	106-44-5	µg/kg	370	<370	U
49	Naphthalene	91-20-3	µg/kg	370	<370	U
50	2-Nitroaniline	88-74-4	µg/kg	930	<930	U
51	3-Nitroaniline	99-09-2	µg/kg	930	<930	U
52	4-Nitroaniline	100-01-6	µg/kg	930	<930	U
53	Nitrobenzene	98-95-3	µg/kg	370	<370	U
54	2-Nitrophenol	88-75-5	µg/kg	370	<370	U
55	4-Nitrophenol	100-02-7	µg/kg	930	<930	U
56	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	370	<370	U
57	N-Nitrosodiphenylamine (1)	86-30-6	µg/kg	370	<370	U
58	Pentachlorophenol	87-86-5	µg/kg	930	<930	U
59	Phenanthrene	85-01-8	µg/kg	370	<370	U
60	Phenol	108-95-2	µg/kg	370	<370	U
61	Pyrene	129-00-0	µg/kg	370	<370	U
62	1,2,4-Trichlorobenzene	120-82-1	µg/kg	370	<370	U
63	2,4,5-Trichlorophenol	95-95-4	µg/kg	930	<930	U
64	2,4,6-Trichlorophenol	88-06-2	µg/kg	370	<370	U

## TIC (Tentative Identified Components)

I	UNKNOWN	µg/kg	RT (min)	
			6.69	190 J

## Surrogates

		Control Limit, %	Surro. Rec.%
1	Nitrobenzene-d5	4165-60-0	23-120
2	2-Fluorobiphenyl	321-60-8	30-115
3	Terphenyl-d14	1718-51-0	18-137
4	Phenol-d5	4165-62-2	24-113
5	2-Fluorophenol	367-12-4	25-121
6	2,4,6-Tribromophenol	118-79-6	19-122
7	2-Chlorophenol-d4		20-130
8	1,2-Dichlorobenzene-d4	2199-69-1	20-130
# of out-of-control			0

## Internal Standard

		Control Limit, %	IS Rec.%
1	1,4-Dichlorobenzene-d4	3855-82-1	50-200
2	Naphthalene-d8	1146-65-2	50-200
3	Acenaphthene-d10	15067-26-2	50-200
4	Phenanthrene-d10	1517-22-2	50-200
5	Chrysene-d12	1719-03-5	50-200
6	Perylene-d12	1520-96-3	50-200
# of out-of-control			0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL

J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)

E - Exceed calibration range

B - A positive value was found in the method blank

D - Diluted

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**Applied P & Ch Laboratory**  
**SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET for Method CLP-SVOC**

Client Name:	Tetra Tech EM Inc.	Project No:	G0069-267A0	Collection Date:	02/10/1999
Project ID:	NWS Concord	SDG Number:	991776	Collected by:	RL/CF
Sample ID:	267A0CSB003	Lab Sample ID:	99-1776-3	Received Date:	02/11/1999
Sample Type:	Field Sample	Sample Matrix	Soil	Moisture %:	14.9
Anal. Method:	CLP-SVOC	Prep. Method:	3550	Instrument ID:	GC/MS: Z
Batch No:	99G1472	Prep. Date:	02/12/99	Anal. Date:	02/16/99
Data File Name:	1776-03	Prep. No:	1 of 1	Anal. Time:	21:08
Extract Vol.	4.0 mL	Sample Amount:	30.0 g	Dilution Factor:	1

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	390	<390	U
2	Acenaphthylene	208-96-8	µg/kg	390	<390	U
3	Anthracene	120-12-7	µg/kg	390	<390	U
4	Benzo(a)anthracene	56-55-3	µg/kg	390	<390	U
5	Benzo(a)pyrene	50-32-8	µg/kg	390	<390	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	390	<390	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	390	<390	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	390	<390	U
9	Bis(2-chloroethoxy)methane	111-91-1	µg/kg	390	<390	U
10	Bis(2-chloroethyl)ether	111-44-4	µg/kg	390	<390	U
11	2,2'-oxybis(1-chloropropane)	108-60-1	µg/kg	390	<390	U
12	Bis(2-ethylhexyl)phthalate	117-81-7	µg/kg	150	<150	U
13	4-Bromophenyl-phenylether	101-55-3	µg/kg	390	<390	U
14	ButylBenzylPhthalate	85-68-7	µg/kg	390	<390	U
15	Carbazole	86-74-8	µg/kg	390	<390	U
16	4-Chloro-3-methylphenol	59-50-7	µg/kg	390	<390	U
17	4-Chloroaniline	106-47-8	µg/kg	390	<390	U
18	2-Chloronaphthalene	91-58-7	µg/kg	390	<390	U
19	2-Chlorophenol	95-57-8	µg/kg	390	<390	U
20	4-Chlorophenyl-phenylether	7005-72-3	µg/kg	390	<390	U
21	Chrysene	218-01-9	µg/kg	390	<390	U
22	Di-n-butylphthalate	84-74-2	µg/kg	390	<390	U
23	Di-n-octylphthalate	117-84-0	µg/kg	390	<390	U
24	Dibenz(a,h)anthracene	53-70-3	µg/kg	390	<390	U
25	Dibenzofuran	132-64-9	µg/kg	390	<390	U
26	1,2-Dichlorobenzene	95-50-1	µg/kg	190	<190	U
27	1,3-Dichlorobenzene	541-73-1	µg/kg	190	<190	U
28	1,4-Dichlorobenzene	106-46-7	µg/kg	190	<190	U
29	3,3'-Dichlorobenzidine	91-94-1	µg/kg	390	<390	U
30	2,4-Dichlorophenol	120-83-2	µg/kg	390	<390	U
31	Diethylphthalate	84-66-2	µg/kg	390	<390	U
32	Dimethylphthalate	131-11-3	µg/kg	390	<390	U
33	2,4-Dimethylphenol	105-67-9	µg/kg	390	<390	U
34	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	980	<980	U
35	2,4-Dinitrophenol	51-28-5	µg/kg	980	<980	U
36	2,4-Dinitrotoluene	121-14-2	µg/kg	390	<390	U
37	2,6-Dinitrotoluene	606-20-2	µg/kg	390	<390	U
38	Fluoranthene	206-44-0	µg/kg	390	<390	U
39	Fluorene	86-73-7	µg/kg	390	<390	U
40	Hexachlorobenzene	118-74-1	µg/kg	390	<390	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorobutadiene	87-68-3	µg/kg	390	<390	U
42	Hexachlorocyclopentadiene	77-47-4	µg/kg	390	<390	U
43	Hexachloroethane	67-72-1	µg/kg	390	<390	U
44	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	390	<390	U
45	Isophorone	78-59-1	µg/kg	390	<390	U
46	2-Methylnaphthalene	91-57-6	µg/kg	390	<390	U
47	2-Methylphenol	95-48-7	µg/kg	390	<390	U
48	4-Methylphenol	106-44-5	µg/kg	390	<390	U
49	Naphthalene	91-20-3	µg/kg	390	<390	U
50	2-Nitroaniline	88-74-4	µg/kg	980	<980	U
51	3-Nitroaniline	99-09-2	µg/kg	980	<980	U
52	4-Nitroaniline	100-01-6	µg/kg	980	<980	U
53	Nitrobenzene	98-95-3	µg/kg	390	<390	U
54	2-Nitrophenol	88-75-5	µg/kg	390	<390	U
55	4-Nitrophenol	100-02-7	µg/kg	980	<980	U
56	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	390	<390	U
57	N-Nitrosodiphenylamine (1)	86-30-6	µg/kg	390	<390	U
58	Pentachlorophenol	87-86-5	µg/kg	980	<980	U
59	Phenanthrene	85-01-8	µg/kg	390	<390	U
60	Phenol	108-95-2	µg/kg	390	<390	U
61	Pyrene	129-00-0	µg/kg	390	<390	U
62	1,2,4-Trichlorobenzene	120-82-1	µg/kg	390	<390	U
63	2,4,5-Trichlorophenol	95-95-4	µg/kg	980	<980	U
64	2,4,6-Trichlorophenol	88-06-2	µg/kg	390	<390	U
TIC (Tentative Identified Components)			RT (min)			
1	UNKNOWN		µg/kg	6.69	210	J
<b>Surrogates</b>						
				Control Limit, %	Surro. Rec.%	
1	Nitrobenzene-d5	4165-60-0		23-120	48	
2	2-Fluorobiphenyl	321-60-8		30-115	46	
3	Terphenyl-d14	1718-51-0		18-137	67	
4	Phenol-d5	4165-62-2		24-113	52	
5	2-Fluorophenol	367-12-4		25-121	47	
6	2,4,6-Tribromophenol	118-79-6		19-122	45	
7	2-Chlorophenol-d4			20-130	50	
8	1,2-Dichlorobenzene-d4	2199-69-1		20-130	33	
# of out-of-control					0	
<b>Internal Standard</b>						
				Control Limit, %	IS Rec.%	
1	1,4-Dichlorobenzene-d4	3855-82-1		50-200	145	
2	Naphthalene-d8	1146-65-2		50-200	155	
3	Acenaphthene-d10	15067-26-2		50-200	160	
4	Phenanthrene-d10	1517-22-2		50-200	168	
5	Chrysene-d12	1719-03-5		50-200	164	
6	Perylene-d12	1520-96-3		50-200	166	
# of out-of-control					0	

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL

E - Exceed calibration range

J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)

B - A positive value was found in the method blank

D - Diluted

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**Applied P & Ch Laboratory**  
**SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET for Method CLP-SVOC**

Client Name:	Tetra Tech EM Inc.	Project No:	G0069-267A0	Collection Date:	02/10/1999
Project ID:	NWS Concord	SDG Number:	991776	Collected by:	RL/CF
Sample ID:	267A0CSB004	Lab Sample ID:	99-1776-4	Received Date:	02/11/1999
Sample Type:	Field Sample	Sample Matrix	Soil	Moisture %:	4.4
Anal. Method:	CLP-SVOC	Prep. Method:	3550	Instrument ID:	GC/MS: Z
Batch No:	99G1472	Prep. Date:	02/12/99	Anal. Date:	02/17/99
Data File Name:	1776-04A	Prep. No:	1 of 1	Anal. Time:	19:18
Extract Vol.	16. mL	Sample Amount:	30.0 g	Dilution Factor:	40

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	14000	<14000	U
2	Acenaphthylene	208-96-8	µg/kg	14000	<14000	U
3	Anthracene	120-12-7	µg/kg	14000	<14000	U
4	Benzo(a)anthracene	56-55-3	µg/kg	14000	<14000	U
5	Benzo(a)pyrene	50-32-8	µg/kg	14000	<14000	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	14000	<14000	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	14000	<14000	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	14000	<14000	U
9	Bis(2-chloroethoxy)methane	111-91-1	µg/kg	14000	<14000	U
10	Bis(2-chloroethyl)ether	111-44-4	µg/kg	14000	<14000	U
11	2,2'-oxybis(1-chloropropane)	108-60-1	µg/kg	14000	<14000	U
12	Bis(2-ethylhexyl)phthalate	117-81-7	µg/kg	5400	<5400	U
13	4-Bromophenyl-phenylether	101-55-3	µg/kg	14000	<14000	U
14	ButylBenzylPhthalate	85-68-7	µg/kg	14000	<14000	U
15	Carbazole	86-74-8	µg/kg	14000	<14000	U
16	4-Chloro-3-methylphenol	59-50-7	µg/kg	14000	<14000	U
17	4-Chloroaniline	106-47-8	µg/kg	14000	<14000	U
18	2-Chloronaphthalene	91-58-7	µg/kg	14000	<14000	U
19	2-Chlorophenol	95-57-8	µg/kg	14000	<14000	U
20	4-Chlorophenyl-phenylether	7005-72-3	µg/kg	14000	<14000	U
21	Chrysene	218-01-9	µg/kg	14000	<14000	U
22	Di-n-butylphthalate	84-74-2	µg/kg	14000	<14000	U
23	Di-n-octylphthalate	117-84-0	µg/kg	14000	<14000	U
24	Dibenz(a,h)anthracene	53-70-3	µg/kg	14000	<14000	U
25	Dibenzofuran	132-64-9	µg/kg	14000	<14000	U
26	1,2-Dichlorobenzene	95-50-1	µg/kg	6700	<6700	U
27	1,3-Dichlorobenzene	541-73-1	µg/kg	6700	<6700	U
28	1,4-Dichlorobenzene	106-46-7	µg/kg	6700	<6700	U
29	3,3'-Dichlorobenzidine	91-94-1	µg/kg	14000	<14000	U
30	2,4-Dichlorophenol	120-83-2	µg/kg	14000	<14000	U
31	Diethylphthalate	84-66-2	µg/kg	14000	<14000	U
32	Dimethylphthalate	131-11-3	µg/kg	14000	<14000	U
33	2,4-Dimethylphenol	105-67-9	µg/kg	14000	<14000	U
34	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	35000	<35000	U
35	2,4-Dinitrophenol	51-28-5	µg/kg	35000	<35000	U
36	2,4-Dinitrotoluene	121-14-2	µg/kg	14000	<14000	U
37	2,6-Dinitrotoluene	606-20-2	µg/kg	14000	<14000	U
38	Fluoranthene	206-44-0	µg/kg	14000	<14000	U
39	Fluorene	86-73-7	µg/kg	14000	<14000	U
40	Hexachlorobenzene	118-74-1	µg/kg	14000	<14000	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorobutadiene	87-68-3	µg/kg	14000	<14000	U
42	Hexachlorocyclopentadiene	77-47-4	µg/kg	14000	<14000	U
43	Hexachloroethane	67-72-1	µg/kg	14000	<14000	U
44	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	14000	<14000	U
45	Isophorone	78-59-1	µg/kg	14000	<14000	U
46	2-Methylnaphthalene	91-57-6	µg/kg	14000	<14000	U
47	2-Methylphenol	95-48-7	µg/kg	14000	<14000	U
48	4-Methylphenol	106-44-5	µg/kg	14000	<14000	U
49	Naphthalene	91-20-3	µg/kg	14000	<14000	U
50	2-Nitroaniline	88-74-4	µg/kg	35000	<35000	U
51	3-Nitroaniline	99-09-2	µg/kg	35000	<35000	U
52	4-Nitroaniline	100-01-6	µg/kg	35000	<35000	U
53	Nitrobenzene	98-95-3	µg/kg	14000	<14000	U
54	2-Nitrophenol	88-75-5	µg/kg	14000	<14000	U
55	4-Nitrophenol	100-02-7	µg/kg	35000	<35000	U
56	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	14000	<14000	U
57	N-Nitrosodiphenylamine (1)	86-30-6	µg/kg	14000	<14000	U
58	Pentachlorophenol	87-86-5	µg/kg	35000	<35000	U
59	Phenanthrene	85-01-8	µg/kg	14000	<14000	U
60	Phenol	108-95-2	µg/kg	14000	<14000	U
61	Pyrene	129-00-0	µg/kg	14000	<14000	U
62	1,2,4-Trichlorobenzene	120-82-1	µg/kg	14000	<14000	U
63	2,4,5-Trichlorophenol	95-95-4	µg/kg	35000	<35000	U
64	2,4,6-Trichlorophenol	88-06-2	µg/kg	14000	<14000	U
<b>TIC (Tentative Identified Components)</b>				<b>RT (min)</b>		
1	UNKNOWN		µg/kg	25.16	5100	J
<b>Surrogates</b>				<b>Control Limit, %</b>	<b>Surro. Rec.%</b>	
1	Nitrobenzene-d5	4165-60-0		23-120	70	
2	2-Fluorobiphenyl	321-60-8		30-115	73	
3	Terphenyl-d14	1718-51-0		18-137	122	
4	Phenol-d5	4165-62-2		24-113	73	
5	2-Fluorophenol	367-12-4		25-121	65	
6	2,4,6-Tribromophenol	118-79-6		19-122	70	
7	2-Chlorophenol-d4			20-130	73	
8	1,2-Dichlorobenzene-d4	2199-69-1		20-130	109	
# of out-of-control					0	
<b>Internal Standard</b>				<b>Control Limit, %</b>	<b>IS Rec.%</b>	
1	t,4-Dichlorobenzene-d4	3855-82-1		50-200	135	
2	Naphthalene-d8	1146-65-2		50-200	143	
3	Acenaphthene-d10	15067-26-2		50-200	154	
4	Phenanthrene-d10	1517-22-2		50-200	154	
5	Chrysene-d12	1719-03-5		50-200	154	
6	Perylene-d12	1520-96-3		50-200	108	
# of out-of-control					0	

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL

J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)

E - Exceed calibration range

B - A positive value was found in the method blank

D - Diluted

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Applied P & Ch Laboratory  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET for Method CLP-SVOC

Client Name:	Tetra Tech EM Inc.	Project No:	G0069-267A0	Collection Date:	02/10/1999
Project ID:	NWS Concord	SDG Number:	991776	Collected by:	RL/CF
Sample ID:	<b>267A0CSB005</b>	Lab Sample ID:	99-1776-5	Received Date:	02/11/1999
Sample Type:	Field Sample	Sample Matrix	Soil	Moisture %:	9.1
Anal. Method:	CLP-SVOC	Prep. Method:	3550	Instrument ID:	GC/MS: Z
Batch No:	99G1472	Prep. Date:	02/12/99	Anal. Date:	02/17/99
Data File Name:	1776-05	Prep. No:	1 of 1	Anal. Time:	00:59
Extract Vol.	16. mL	Sample Amount:	30.0 g	Dilution Factor:	4

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	1500	<1500	U
2	Acenaphthylene	208-96-8	µg/kg	1500	<1500	U
3	Anthracene	120-12-7	µg/kg	1500	<1500	U
4	Benzo(a)anthracene	56-55-3	µg/kg	1500	<1500	U
5	Benzo(a)pyrene	50-32-8	µg/kg	1500	<1500	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	1500	<1500	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	1500	<1500	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	1500	<1500	U
9	Bis(2-chloroethoxy)methane	111-91-1	µg/kg	1500	<1500	U
10	Bis(2-chloroethyl)ether	111-44-4	µg/kg	1500	<1500	U
11	2,2'-oxybis(1-chloropropane)	108-60-1	µg/kg	1500	<1500	U
12	Bis(2-ethylhexyl)phthalate	117-81-7	µg/kg	570	<570	U
13	4-Bromophenyl-phenylether	101-55-3	µg/kg	1500	<1500	U
14	ButylBenzylPhthalate	85-68-7	µg/kg	1500	<1500	U
15	Carbazole	86-74-8	µg/kg	1500	<1500	U
16	4-Chloro-3-methylphenol	59-50-7	µg/kg	1500	<1500	U
17	4-Chloroaniline	106-47-8	µg/kg	1500	<1500	U
18	2-Chloronaphthalene	91-58-7	µg/kg	1500	<1500	U
19	2-Chlorophenol	95-57-8	µg/kg	1500	<1500	U
20	4-Chlorophenyl-phenylether	7005-72-3	µg/kg	1500	<1500	U
21	Chrysene	218-01-9	µg/kg	1500	<1500	U
22	Di-n-butylphthalate	84-74-2	µg/kg	1500	<1500	U
23	Di-n-octylphthalate	117-84-0	µg/kg	1500	<1500	U
24	Dibenz(a,h)anthracene	53-70-3	µg/kg	1500	<1500	U
25	Dibenzo furan	132-64-9	µg/kg	1500	<1500	U
26	1,2-Dichlorobenzene	95-50-1	µg/kg	700	<700	U
27	1,3-Dichlorobenzene	541-73-1	µg/kg	700	<700	U
28	1,4-Dichlorobenzene	106-46-7	µg/kg	700	<700	U
29	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1500	<1500	U
30	2,4-Dichlorophenol	120-83-2	µg/kg	1500	<1500	U
31	Diethylphthalate	84-66-2	µg/kg	1500	<1500	U
32	Dimethylphthalate	131-11-3	µg/kg	1500	<1500	U
33	2,4-Dimethylphenol	105-67-9	µg/kg	1500	<1500	U
34	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	3700	<3700	U
35	2,4-Dinitrophenol	51-28-5	µg/kg	3700	<3700	U
36	2,4-Dinitrotoluene	121-14-2	µg/kg	1500	<1500	U
37	2,6-Dinitrotoluene	606-20-2	µg/kg	1500	<1500	U
38	Fluoranthene	206-44-0	µg/kg	1500	<1500	U
39	Fluorene	86-73-7	µg/kg	1500	<1500	U
40	Hexachlorobenzene	118-74-1	µg/kg	1500	<1500	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorobutadiene	87-68-3	µg/kg	1500	< 1500	U
42	Hexachlorocyclopentadiene	77-47-4	µg/kg	1500	< 1500	U
43	Hexachloroethane	67-72-1	µg/kg	1500	< 1500	U
44	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	1500	< 1500	U
45	Isophorone	78-59-1	µg/kg	1500	< 1500	U
46	2-Methylnaphthalene	91-57-6	µg/kg	1500	< 1500	U
47	2-Methylphenol	95-48-7	µg/kg	1500	< 1500	U
48	4-Methylphenol	106-44-5	µg/kg	1500	< 1500	U
49	Naphthalene	91-20-3	µg/kg	1500	< 1500	U
50	2-Nitroaniline	88-74-4	µg/kg	3700	< 3700	U
51	3-Nitroaniline	99-09-2	µg/kg	3700	< 3700	U
52	4-Nitroaniline	100-01-6	µg/kg	3700	< 3700	U
53	Nitrobenzene	98-95-3	µg/kg	1500	< 1500	U
54	2-Nitrophenol	88-75-5	µg/kg	1500	< 1500	U
55	4-Nitrophenol	100-02-7	µg/kg	3700	< 3700	U
56	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	1500	< 1500	U
57	N-Nitrosodiphenylamine (1)	86-30-6	µg/kg	1500	< 1500	U
58	Pentachlorophenol	87-86-5	µg/kg	3700	< 3700	U
59	Phenanthrene	85-01-8	µg/kg	1500	< 1500	U
60	Phenol	108-95-2	µg/kg	1500	< 1500	U
61	Pyrene	129-00-0	µg/kg	1500	< 1500	U
62	1,2,4-Trichlorobenzene	120-82-1	µg/kg	1500	< 1500	U
63	2,4,5-Trichlorophenol	95-95-4	µg/kg	3700	< 3700	U
64	2,4,6-Trichlorophenol	88-06-2	µg/kg	1500	< 1500	U
<b>TIC (Tentative Identified Components)</b>				<b>RT (min)</b>		
1	UNKNOWN		µg/kg	23.46	370	J
2	UNKNOWN		µg/kg	23.96	380	J
3	UNKNOWN		µg/kg	24.03	570	J
4	UNKNOWN		µg/kg	24.68	640	J
5	UNKNOWN		µg/kg	25.44	1000	J
6	UNKNOWN		µg/kg	26.40	990	J
<b>Surrogates</b>				<b>Control Limit, %</b>	<b>Surro. Rec.%</b>	
1	Nitrobenzene-d5	4165-60-0		23-120	60	
2	2-Fluorobiphenyl	321-60-8		30-115	59	
3	Terphenyl-d14	1718-51-0		18-137	92	
4	Phenol-d5	4165-62-2		24-113	59	
5	2-Fluorophenol	367-12-4		25-121	49	
6	2,4,6-Tribromophenol	118-79-6		19-122	64	
7	2-Chlorophenol-d4			20-130	55	
8	1,2-Dichlorobenzene-d4	2199-69-1		20-130	49	
# of out-of-control					0	
<b>Internal Standard</b>				<b>Control Limit, %</b>	<b>IS Rec.%</b>	
1	1,1-Dichlorobenzene-d4	3855-82-1		50-200	116	
2	Naphthalene-d8	1146-65-2		50-200	122	
3	Acenaphthene-d10	15067-26-2		50-200	121	
4	Phenanthrene-d10	1517-22-2		50-200	120	
5	Chrysene-d12	1719-03-5		50-200	118	

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Applied P & Ch Laboratory  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET for Method CLP-SVOC

Client Name:	Tetra Tech EM Inc.	Project No.:	G0069-267A0	Collection Date:	02/10/1999
Project ID:	NWS Concord	SDG Number:	991776	Collected by:	RL/CF
Sample ID:	267A0CSB006	Lab Sample ID:	99-1776-6	Received Date:	02/11/1999
Sample Type:	Field Sample	Sample Matrix:	Soil	Moisture %:	37.8
Anal. Method:	CLP-SVOC	Prep. Method:	3550	Instrument ID:	GC/MS: Z
Batch No:	99G1472	Prep. Date:	02/12/99	Anal. Date:	02/16/99
Data File Name:	1776-06	Prep. No:	1 of 1	Anal. Time:	21:46
Extract Vol.	4.0 mL	Sample Amount:	30.0 g	Dilution Factor:	1

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	530	< 530	U
2	Acenaphthylene	208-96-8	µg/kg	530	< 530	U
3	Anthracene	120-12-7	µg/kg	530	< 530	U
4	Benzo(a)anthracene	56-55-3	µg/kg	530	< 530	U
5	Benzo(a)pyrene	50-32-8	µg/kg	530	< 530	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	530	< 530	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	530	< 530	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	530	< 530	U
9	Bis(2-chloroethoxy)methane	111-91-1	µg/kg	530	< 530	U
10	Bis(2-chloroethyl)ether	111-44-4	µg/kg	530	< 530	U
11	2,2'-oxybis(1-chloropropane)	108-60-1	µg/kg	530	< 530	U
12	Bis(2-ethylhexyl)phthalate	117-81-7	µg/kg	210	< 210	U
13	4-Bromophenyl-phenylether	101-55-3	µg/kg	530	< 530	U
14	ButylBenzylPhthalate	85-68-7	µg/kg	530	< 530	U
15	Carbazole	86-74-8	µg/kg	530	< 530	U
16	4-Chloro-3-methylphenol	59-50-7	µg/kg	530	< 530	U
17	4-Chloroaniline	106-47-8	µg/kg	530	< 530	U
18	2-Chloronaphthalene	91-58-7	µg/kg	530	< 530	U
19	2-Chlorophenol	95-57-8	µg/kg	530	< 530	U
20	4-Chlorophenyl-phenylether	7005-72-3	µg/kg	530	< 530	U
21	Chrysene	218-01-9	µg/kg	530	< 530	U
22	Di-n-butylphthalate	84-74-2	µg/kg	530	< 530	U
23	Di-n-octylphthalate	117-84-0	µg/kg	530	< 530	U
24	Dibenz(a,h)anthracene	53-70-3	µg/kg	530	< 530	U
25	Dibenzofuran	132-64-9	µg/kg	530	< 530	U
26	1,2-Dichlorobenzene	95-50-1	µg/kg	260	< 260	U
27	1,3-Dichlorobenzene	541-73-1	µg/kg	260	< 260	U
28	1,4-Dichlorobenzene	106-46-7	µg/kg	260	< 260	U
29	3,3'-Dichlorobenzidine	91-94-1	µg/kg	530	< 530	U
30	2,4-Dichlorophenol	120-83-2	µg/kg	530	< 530	U
31	Diethylphthalate	84-66-2	µg/kg	530	< 530	U
32	Dimethylphthalate	131-11-3	µg/kg	530	< 530	U
33	2,4-Dimethylphenol	105-67-9	µg/kg	530	< 530	U
34	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	1300	< 1300	U
35	2,4-Dinitrophenol	51-28-5	µg/kg	1300	< 1300	U
36	2,4-Dinitrotoluene	121-14-2	µg/kg	530	< 530	U
37	2,6-Dinitrotoluene	606-20-2	µg/kg	530	< 530	U
38	Fluoranthene	206-44-0	µg/kg	530	< 530	U
39	Fluorene	86-73-7	µg/kg	530	< 530	U
40	Hexachlorobenzene	118-74-1	µg/kg	530	< 530	U

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Continued

99-1776-6 CLP-SVOC Datafile 1776-06

#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorobutadiene	87-68-3	µg/kg	530	< 530	U
42	Hexachlorocyclopentadiene	77-47-4	µg/kg	530	< 530	U
43	Hexachloroethane	67-72-1	µg/kg	530	< 530	U
44	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	530	< 530	U
45	Isophorone	78-59-1	µg/kg	530	< 530	U
46	2-Methylnaphthalene	91-57-6	µg/kg	530	< 530	U
47	2-Methylphenol	95-48-7	µg/kg	530	< 530	U
48	4-Methylphenol	106-44-5	µg/kg	530	< 530	U
49	Naphthalene	91-20-3	µg/kg	530	< 530	U
50	2-Nitroaniline	88-74-4	µg/kg	1300	< 1300	U
51	3-Nitroaniline	99-09-2	µg/kg	1300	< 1300	U
52	4-Nitroaniline	100-01-6	µg/kg	1300	< 1300	U
53	Nitrobenzene	98-95-3	µg/kg	530	< 530	U
54	2-Nitrophenol	88-75-5	µg/kg	530	< 530	U
55	4-Nitrophenol	100-02-7	µg/kg	1300	< 1300	U
56	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	530	< 530	U
57	N-Nitrosodiphenylamine (1)	86-30-6	µg/kg	530	< 530	U
58	Pentachlorophenol	87-86-5	µg/kg	1300	< 1300	U
59	Phenanthrene	85-01-8	µg/kg	530	< 530	U
60	Phenol	108-95-2	µg/kg	530	< 530	U
61	Pyrene	129-00-0	µg/kg	530	< 530	U
62	1,2,4-Trichlorobenzene	120-82-1	µg/kg	530	< 530	U
63	2,4,5-Trichlorophenol	95-95-4	µg/kg	1300	< 1300	U
64	2,4,6-Trichlorophenol	88-06-2	µg/kg	530	< 530	U

TIC (Tentative Identified Components): Not Found

Surrogates		Control Limit, %	Surro. Rec.%
1	Nitrobenzene-d5	4165-60-0	23-120
2	2-Fluorobiphenyl	321-60-8	30-115
3	Terphenyl-d14	1718-51-0	18-137
4	Phenol-d5	4165-62-2	24-113
5	2-Fluorophenol	367-12-4	25-121
6	2,4,6-Tribromophenol	118-79-6	19-122
7	2-Chlorophenol-d4		20-130
8	1,2-Dichlorobenzene-d4	2199-69-1	20-130
# of out-of-control			0

Internal Standard		Control Limit, %	IS Rec.%
1	1,4-Dichlorobenzene-d4	3855-82-1	50-200
2	Naphthalene-d8	1146-65-2	50-200
3	Acenaphthene-d10	15067-26-2	50-200
4	Phenanthrene-d10	1517-22-2	50-200
5	Chrysene-d12	1719-03-5	50-200
6	Perylene-d12	1520-96-3	50-200
# of out-of-control			0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL

E - Exceed calibration range

J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)

B - A positive value was found in the method blank

D - Diluted

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**Applied P & Ch Laboratory**  
**SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET for Method CLP-SVOC**

Client Name:	Tetra Tech EM Inc.	Project No:	G0069-267A0	Collection Date:	02/10/1999
Project ID:	NWS Concord	SDG Number:	991776	Collected by:	RL/CF
Sample ID:	267A0CSB007	Lab Sample ID:	99-1776-7	Received Date:	02/11/1999
Sample Type:	Field Sample	Sample Matrix	Soil	Moisture %:	14.5
Anal. Method:	CLP-SVOC	Prep. Method:	3550	Instrument ID:	GC/MS: Z
Batch No:	99G1472	Prep. Date:	02/12/99	Anal. Date:	02/16/99
Data File Name:	1776-07	Prep. No:	1 of 1	Anal. Time:	23:42
Extract Vol.	4.0 mL	Sample Amount:	30.0 g	Dilution Factor:	1

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	390	<390	U
2	Acenaphthylene	208-96-8	µg/kg	390	<390	U
3	Anthracene	120-12-7	µg/kg	390	<390	U
4	Benzo(a)anthracene	56-55-3	µg/kg	390	<390	U
5	Benzo(a)pyrene	50-32-8	µg/kg	390	<390	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	390	<390	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	390	<390	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	390	<390	U
9	Bis(2-chloroethoxy)methane	111-91-1	µg/kg	390	<390	U
10	Bis(2-chloroethyl)ether	111-44-4	µg/kg	390	<390	U
11	2,2'-oxybis(1-chloropropane)	108-60-1	µg/kg	390	<390	U
12	Bis(2-ethylhexyl)phthalate	117-81-7	µg/kg	150	<150	U
13	4-Bromophenyl-phenylether	101-55-3	µg/kg	390	<390	U
14	ButylBenzylPhthalate	85-68-7	µg/kg	390	<390	U
15	Carbazole	86-74-8	µg/kg	390	<390	U
16	4-Chloro-3-methylphenol	59-50-7	µg/kg	390	<390	U
17	4-Chloroaniline	106-47-8	µg/kg	390	<390	U
18	2-Chloronaphthalene	91-58-7	µg/kg	390	<390	U
19	2-Chlorophenol	95-57-8	µg/kg	390	<390	U
20	4-Chlorophenyl-phenylether	7005-72-3	µg/kg	390	<390	U
21	Chrysene	218-01-9	µg/kg	390	<390	U
22	Di-n-butylphthalate	84-74-2	µg/kg	390	<390	U
23	Di-n-octylphthalate	117-84-0	µg/kg	390	<390	U
24	Dibenz(a,h)anthracene	53-70-3	µg/kg	390	<390	U
25	Dibenzofuran	132-64-9	µg/kg	390	<390	U
26	1,2-Dichlorobenzene	95-50-1	µg/kg	190	<190	U
27	1,3-Dichlorobenzene	541-73-1	µg/kg	190	<190	U
28	1,4-Dichlorobenzene	106-46-7	µg/kg	190	<190	U
29	3,3'-Dichlorobenzidine	91-94-1	µg/kg	390	<390	U
30	2,4-Dichlorophenol	120-83-2	µg/kg	390	<390	U
31	Diethylphthalate	84-66-2	µg/kg	390	<390	U
32	Dimethylphthalate	131-11-3	µg/kg	390	<390	U
33	2,4-Dimethylphenol	105-67-9	µg/kg	390	<390	U
34	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	970	<970	U
35	2,4-Dinitrophenol	51-28-5	µg/kg	970	<970	U
36	2,4-Dinitrotoluene	121-14-2	µg/kg	390	<390	U
37	2,6-Dinitrotoluene	606-20-2	µg/kg	390	<390	U
38	Fluoranthene	206-44-0	µg/kg	390	<390	U
39	Fluorene	86-73-7	µg/kg	390	<390	U
40	Hexachlorobenzene	118-74-1	µg/kg	390	<390	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorobutadiene	87-68-3	µg/kg	390	<390	U
42	Hexachlorocyclopentadiene	77-47-4	µg/kg	390	<390	U
43	Hexachloroethane	67-72-1	µg/kg	390	<390	U
44	Indeno[1,2,3-cd]pyrene	193-39-5	µg/kg	390	<390	U
45	Isophorone	78-59-1	µg/kg	390	<390	U
46	2-Methylnaphthalene	91-57-6	µg/kg	390	<390	U
47	2-Methylphenol	95-48-7	µg/kg	390	<390	U
48	4-Methylphenol	106-44-5	µg/kg	390	<390	U
49	Naphthalene	91-20-3	µg/kg	390	<390	U
50	2-Nitroaniline	88-74-4	µg/kg	970	<970	U
51	3-Nitroaniline	99-09-2	µg/kg	970	<970	U
52	4-Nitroaniline	100-01-6	µg/kg	970	<970	U
53	Nitrobenzene	98-95-3	µg/kg	390	<390	U
54	2-Nitrophenol	88-75-5	µg/kg	390	<390	U
55	4-Nitrophenol	100-02-7	µg/kg	970	<970	U
56	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	390	<390	U
57	N-Nitrosodiphenylamine (1)	86-30-6	µg/kg	390	<390	U
58	Pentachlorophenol	87-86-5	µg/kg	970	<970	U
59	Phenanthrene	85-01-8	µg/kg	390	<390	U
60	Phenol	108-95-2	µg/kg	390	<390	U
61	Pyrene	129-00-0	µg/kg	390	<390	U
62	1,2,4-Trichlorobenzene	120-82-1	µg/kg	390	<390	U
63	2,4,5-Trichlorophenol	95-95-4	µg/kg	970	<970	U
64	2,4,6-Trichlorophenol	88-06-2	µg/kg	390	<390	U

## TIC (Tentative Identified Components)

RT (min)

1	UNKNOWN		µg/kg	6.69	210	J
2	Tetratetracontane	7098-22-8	µg/kg	23.14	120	JN
3	UNKNOWN		µg/kg	24.79	130	J
4	5.alpha.,8.alpha.,14.beta.-Chol	55123-81-4	µg/kg	25.26	140	JN
5	UNKNOWN		µg/kg	25.65	190	J
6	Eicosane, C <sub>20</sub>	112-95-8	µg/kg	26.69	130	JN

## Surrogates

Control Limit, %

Surro. Rec.%

1	Nitrobenzene-d5	4165-60-0		23-120	46
2	2-Fluorobiphenyl	321-60-8		30-115	44
3	Terphenyl-d14	1718-51-0		18-137	66
4	Phenol-d5	4165-62-2		24-113	50
5	2-Fluorophenol	367-12-4		25-121	45
6	2,4,6-Tribromophenol	118-79-6		19-122	52
7	2-Chlorophenol-d4			20-130	48
8	1,2-Dichlorobenzene-d4	2199-69-1		20-130	47
# of out-of-control					
					0

## Internal Standard

Control Limit, %

IS Rec.%

1	1,4-Dichlorobenzene-d4	3855-82-1		50-200	136
2	Naphthalene-d8	1146-65-2		50-200	147
3	Acenaphthene-d10	15067-26-2		50-200	157
4	Phenanthrene-d10	1517-22-2		50-200	161
5	Chrysene-d12	1719-03-5		50-200	152

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Applied P & Ch Laboratory  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET for Method CLP-SVOC

Client Name:	Tetra Tech EM Inc.	Project No:	G0069-267A0	Collection Date:	02/10/1999
Project ID:	NWS Concord	SDG Number:	991776	Collected by:	RL/CF
Sample ID:	267A0CSB008	Lab Sample ID:	99-1776-8	Received Date:	02/11/1999
Sample Type:	Field Sample	Sample Matrix:	Soil	Moisture %:	17.4
Anal. Method:	CLP-SVOC	Prep. Method:	3550	Instrument ID:	GC/MS: Z
Batch No:	99G1472	Prep. Date:	02/12/99	Anal. Date:	02/16/99
Data File Name:	1776-08	Prep. No:	1 of 1	Anal. Time:	19:51
Extract Vol.	4.0 mL	Sample Amount:	30.0 g	Dilution Factor:	1

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	400	<400	U
2	Acenaphthylene	208-96-8	µg/kg	400	<400	U
3	Anthracene	120-12-7	µg/kg	400	<400	U
4	Benzo(a)anthracene	56-55-3	µg/kg	400	<400	U
5	Benzo(a)pyrene	50-32-8	µg/kg	400	<400	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	400	<400	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	400	<400	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	400	<400	U
9	Bis(2-chloroethoxy)methane	111-91-1	µg/kg	400	<400	U
10	Bis(2-chlorooethyl)ether	111-44-4	µg/kg	400	<400	U
11	2,2'-oxybis(1-chloropropane)	108-60-1	µg/kg	400	<400	U
12	Bis(2-ethylhexyl)phthalate	117-81-7	µg/kg	160	<160	U
13	4-Bromophenyl-phenylether	101-55-3	µg/kg	400	<400	U
14	ButylBenzylPhthalate	85-68-7	µg/kg	400	<400	U
15	Carbazole	86-74-8	µg/kg	400	<400	U
16	4-Chloro-3-methylphenol	59-50-7	µg/kg	400	<400	U
17	4-Chloroaniline	106-47-8	µg/kg	400	<400	U
18	2-Chloronaphthalene	91-58-7	µg/kg	400	<400	U
19	2-Chlorophenol	95-57-8	µg/kg	400	<400	U
20	4-Chlorophenyl-phenylether	7005-72-3	µg/kg	400	<400	U
21	Chrysene	218-01-9	µg/kg	400	<400	U
22	Di-n-butylphthalate	84-74-2	µg/kg	400	<400	U
23	Di-n-octylphthalate	117-84-0	µg/kg	400	<400	U
24	Dibenz(a,h)anthracene	53-70-3	µg/kg	400	<400	U
25	Dibenzofuran	132-64-9	µg/kg	400	<400	U
26	1,2-Dichlorobenzene	95-50-1	µg/kg	190	<190	U
27	1,3-Dichlorobenzene	541-73-1	µg/kg	190	<190	U
28	1,4-Dichlorobenzene	106-46-7	µg/kg	190	<190	U
29	3,3'-Dichlorobenzidine	91-94-1	µg/kg	400	<400	U
30	2,4-Dichlorophenol	120-83-2	µg/kg	400	<400	U
31	Diethylphthalate	84-66-2	µg/kg	400	<400	U
32	Dimethylphthalate	131-11-3	µg/kg	400	<400	U
33	2,4-Dimethylphenol	105-67-9	µg/kg	400	<400	U
34	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	1000	<1000	U
35	2,4-Dinitrophenol	51-28-5	µg/kg	1000	<1000	U
36	2,4-Dinitrotoluene	121-14-2	µg/kg	400	<400	U
37	2,6-Dinitrotoluene	606-20-2	µg/kg	400	<400	U
38	Fluoranthene	206-44-0	µg/kg	400	<400	U
39	Fluorene	86-73-7	µg/kg	400	<400	U
40	Hexachlorobenzene	118-74-1	µg/kg	400	<400	U

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Continued

99-1776-8 CLP-SVOC Datafile 1776-08

#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorobutadiene	87-68-3	µg/kg	400	< 400	U
42	Hexachlorocyclopentadiene	77-47-4	µg/kg	400	< 400	U
43	Hexachloroethane	67-72-1	µg/kg	400	< 400	U
44	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	400	< 400	U
45	Isophorone	78-59-1	µg/kg	400	< 400	U
46	2-Methylnaphthalene	91-57-6	µg/kg	400	< 400	U
47	2-Methylphenol	95-48-7	µg/kg	400	< 400	U
48	4-Methylphenol	106-44-5	µg/kg	400	< 400	U
49	Naphthalene	91-20-3	µg/kg	400	< 400	U
50	2-Nitroaniline	88-74-4	µg/kg	1000	< 1000	U
51	3-Nitroaniline	99-09-2	µg/kg	1000	< 1000	U
52	4-Nitroaniline	100-01-6	µg/kg	1000	< 1000	U
53	Nitrobenzene	98-95-3	µg/kg	400	< 400	U
54	2-Nitrophenol	88-75-5	µg/kg	400	< 400	U
55	4-Nitrophenol	100-02-7	µg/kg	1000	< 1000	U
56	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	400	< 400	U
57	N-Nitrosodiphenylamine (1)	86-30-6	µg/kg	400	< 400	U
58	Pentachlorophenol	87-86-5	µg/kg	1000	< 1000	U
59	Phenanthrene	85-01-8	µg/kg	400	< 400	U
60	Phenol	108-95-2	µg/kg	400	< 400	U
61	Pyrene	129-00-0	µg/kg	400	< 400	U
62	1,2,4-Trichlorobenzene	120-82-1	µg/kg	400	< 400	U
63	2,4,5-Trichlorophenol	95-95-4	µg/kg	1000	< 1000	U
64	2,4,6-Trichlorophenol	88-06-2	µg/kg	400	< 400	U
<b>TIC (Tentative Identified Components)</b>				<b>RT (min)</b>		
I	UNKNOWN		µg/kg	6.69	230	J
<b>Surrogates</b>						
1	Nitrobenzene-d5	4165-60-0		Control Limit, %	Surro. Rec.%	
2	2-Fluorobiphenyl	321-60-8		23-120	52	
3	Terphenyl-d14	1718-51-0		30-115	49	
4	Phenol-d5	4165-62-2		18-137	71	
5	2-Fluorophenol	4165-62-2		24-113	55	
6	2,4,6-Tribromophenol	367-12-4		25-121	49	
7	2-Chlorophenol-d4	118-79-6		19-122	48	
8	1,2-Dichlorobenzene-d4	2199-69-1		20-130	52	
# of out-of-control				20-130	51	
				0		
<b>Internal Standard</b>						
1	1,4-Dichlorobenzene-d4	3855-82-1		Control Limit, %	IS Rec.%	
2	Naphthalene-d8	1146-65-2		50-200	124	
3	Acenaphthene-d10	15067-26-2		50-200	129	
4	Phenanthrene-d10	1517-22-2		50-200	136	
5	Chrysene-d12	1719-03-5		50-200	138	
6	Perylene-d12	1520-96-3		50-200	134	
# of out-of-control				50-200	138	
				0		

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL

E - Exceed calibration range

J - Less than RL (PQL, EQL or CRDL), but greater  
than MDL, or an estimated result (e.g. for TIC)

B - A positive value was found in the method blank

D - Diluted

49757

**Applied P & Ch Laboratory**  
**SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET for Method CLP-SVOC**

Client Name:	Tetra Tech EM Inc.	Project No:	C0069-267A0	Collection Date:	02/10/1999
Project ID:	NWS Concord	SDG Number:	991776	Collected by:	RL/CF
Sample ID:	267A0CSB009	Lab Sample ID:	99-1776-9	Received Date:	02/11/1999
Sample Type:	Field Sample	Sample Matrix	Soil	Moisture %:	25.8
Anal. Method:	CLP-SVOC	Prep. Method:	3550	Instrument ID:	GC/MS: Z
Batch No:	99G1472	Prep. Date:	02/12/99	Anal. Date:	02/16/99
Data File Name:	1776-09	Prep. No:	1 of 1	Anal. Time:	22:25
Extract Vol.	4.0 mL	Sample Amount:	30.0 g	Dilution Factor:	1

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	440	< 440	U
2	Acenaphthylene	208-96-8	µg/kg	440	< 440	U
3	Anthracene	120-12-7	µg/kg	440	< 440	U
4	Benzo(a)anthracene	56-55-3	µg/kg	440	< 440	U
5	Benzo(a)pyrene	50-32-8	µg/kg	440	< 440	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	440	< 440	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	440	< 440	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	440	< 440	U
9	Bis(2-chloroethoxy)methane	111-91-1	µg/kg	440	< 440	U
10	Bis(2-chloroethyl)ether	111-44-4	µg/kg	440	< 440	U
11	2,2'-oxybis(1-chloropropane)	108-60-1	µg/kg	440	< 440	U
12	Bis(2-ethylhexyl)phthalate	117-81-7	µg/kg	180	< 180	U
13	4-Bromophenyl-phenylether	101-55-3	µg/kg	440	< 440	U
14	ButylBenzylPhthalate	85-68-7	µg/kg	440	< 440	U
15	Carbazole	86-74-8	µg/kg	440	< 440	U
16	4-Chloro-3-methylphenol	59-50-7	µg/kg	440	< 440	U
17	4-Chloroaniline	106-47-8	µg/kg	440	< 440	U
18	2-Chloronaphthalene	91-58-7	µg/kg	440	< 440	U
19	2-Chlorophenol	95-57-8	µg/kg	440	< 440	U
20	4-Chlorophenyl-phenylether	7005-72-3	µg/kg	440	< 440	U
21	Chrysene	218-01-9	µg/kg	440	< 440	U
22	Di-n-butylphthalate	84-74-2	µg/kg	440	< 440	U
23	Di-n-octylphthalate	117-84-0	µg/kg	440	< 440	U
24	Dibenz(a,h)anthracene	53-70-3	µg/kg	440	< 440	U
25	Dibenzofuran	132-64-9	µg/kg	440	< 440	U
26	1,2-Dichlorobenzene	95-50-1	µg/kg	220	< 220	U
27	1,3-Dichlorobenzene	541-73-1	µg/kg	220	< 220	U
28	1,4-Dichlorobenzene	106-46-7	µg/kg	220	< 220	U
29	3,3'-Dichlorobenzidine	91-94-1	µg/kg	440	< 440	U
30	2,4-Dichlorophenol	120-83-2	µg/kg	440	< 440	U
31	Diethylphthalate	84-66-2	µg/kg	440	< 440	U
32	Dimethylphthalate	131-11-3	µg/kg	440	< 440	U
33	2,4-Dimethylphenol	105-67-9	µg/kg	440	< 440	U
34	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	1100	< 1100	U
35	2,4-Dinitrophenol	51-28-5	µg/kg	1100	< 1100	U
36	2,4-Dinitrotoluene	121-14-2	µg/kg	440	< 440	U
37	2,6-Dinitrotoluene	606-20-2	µg/kg	440	< 440	U
38	Fluoranthene	206-44-0	µg/kg	440	< 440	U
39	Fluorene	86-73-7	µg/kg	440	< 440	U
40	Hexachlorobenzene	118-74-1	µg/kg	440	< 440	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorobutadiene	87-68-3	µg/kg	440	< 440	U
42	Hexachlorocyclopentadiene	77-47-4	µg/kg	440	< 440	U
43	Hexachloroethane	67-72-1	µg/kg	440	< 440	U
44	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	440	< 440	U
45	Isophorone	78-59-1	µg/kg	440	< 440	U
46	2-Methylnaphthalene	91-57-6	µg/kg	440	< 440	U
47	2-Methylphenol	95-48-7	µg/kg	440	< 440	U
48	4-Methylphenol	106-44-5	µg/kg	440	< 440	U
49	Naphthalene	91-20-3	µg/kg	440	< 440	U
50	2-Nitroaniline	88-74-4	µg/kg	1100	< 1100	U
51	3-Nitroaniline	99-09-2	µg/kg	1100	< 1100	U
52	4-Nitroaniline	100-01-6	µg/kg	1100	< 1100	U
53	Nitrobenzene	98-95-3	µg/kg	440	< 440	U
54	2-Nitrophenol	88-75-5	µg/kg	440	< 440	U
55	4-Nitrophenol	100-02-7	µg/kg	1100	< 1100	U
56	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	440	< 440	U
57	N-Nitrosodiphenylamine (1)	86-30-6	µg/kg	440	< 440	U
58	Pentachlorophenol	87-86-5	µg/kg	1100	< 1100	U
59	Phenanthrene	85-01-8	µg/kg	440	< 440	U
60	Phenol	108-95-2	µg/kg	440	< 440	U
61	Pyrene	129-00-0	µg/kg	440	< 440	U
62	1,2,4-Trichlorobenzene	120-82-1	µg/kg	440	< 440	U
63	2,4,5-Trichlorophenol	95-95-4	µg/kg	1100	< 1100	U
64	2,4,6-Trichlorophenol	88-06-2	µg/kg	440	< 440	U
<b>TIC (Tentative Identified Components)</b>				<b>RT (min)</b>		
1	UNKNOWN		µg/kg	6.69	250	J
<b>Surrogates</b>						
				<b>Control Limit, %</b>	<b>Surro. Rec.%</b>	
1	Nitrobenzene-d5	4165-60-0		23-120	51	
2	2-Fluorobiphenyl	321-60-8		30-115	51	
3	Terphenyl-d14	1718-51-0		18-137	74	
4	Phenol-d5	4165-62-2		24-113	56	
5	2-Fluorophenol	367-12-4		25-121	50	
6	2,4,6-Tribromophenol	118-79-6		19-122	56	
7	2-Chlorophenol-d4			20-130	53	
8	1,2-Dichlorobenzene-d4	2199-69-1		20-130	52	
# of out-of-control						
					0	
<b>Internal Standard</b>						
				<b>Control Limit, %</b>	<b>IS Rec.%</b>	
1	1,4-Dichlorobenzene-d4	3855-82-1		50-200	118	
2	Naphthalene-d8	1146-65-2		50-200	123	
3	Acenaphthene-d10	15067-26-2		50-200	119	
4	Phenanthrene-d10	1517-22-2		50-200	122	
5	Chrysene-d12	1719-03-5		50-200	118	
6	Perylene-d12	1520-96-3		50-200	124	
# of out-of-control						
					0	

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL

J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)

E - Exceed calibration range

B - A positive value was found in the method blank

D - Diluted

49759

Applied P & Ch Laboratory  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET for Method CLP-SVOC

Client Name: Tetra Tech EM Inc. Project No: G0069-267A01 Collection Date: 02/12/1999  
 Project ID: PO#992208 SDG Number: 991825 Collected by: Lantz/Carlson  
 Sample ID: 267AOCSB010 Lab Sample ID: 99-1825-1 Received Date: 02/13/1999  
 Sample Type: Field Sample Prep. Method: 3550 Instrument ID: GC/MS: Z  
 Anal. Method: CLP-SVOC Prep. Date: 02/16/99 Anal. Date: 02/18/99  
 Batch No: 99G1526 Prep. No: 1 of 1 Anal. Time: 18:59  
 Data File Name: 1825-01 Sample Amount: 30.0 g Dilution Factor: 4  
 Extract Vol. 4.0 mL

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	1400	<1400	U
2	Acenaphthylene	208-96-8	µg/kg	1400	<1400	U
3	Anthracene	120-12-7	µg/kg	1400	<1400	U
4	Benz(a)anthracene	56-55-3	µg/kg	1400	<1400	U
5	Benzo(a)pyrene	50-32-8	µg/kg	1400	<1400	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	1400	<1400	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	1400	<1400	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	1400	<1400	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	1400	<1400	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	1400	<1400	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	1400	<1400	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	1400	<1400	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	1400	<1400	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	1400	<1400	U
15	Carbazole	86-74-8	µg/kg	1400	<1400	U
16	4-Chloro-3-methylphenol	59-50-7	µg/kg	1400	<1400	U
17	4-Chloroaniline	106-47-8	µg/kg	1400	<1400	U
18	2-Chloronaphthalene	91-58-7	µg/kg	1400	<1400	U
19	2-Chlorophenol	95-57-8	µg/kg	1400	<1400	U
20	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	1400	<1400	U
21	Chrysene	218-01-9	µg/kg	1400	<1400	U
22	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	1400	<1400	U
23	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	1400	<1400	U
24	Dibenz(a,h)anthracene	53-70-3	µg/kg	1400	<1400	U
25	Dibenzofuran	132-64-9	µg/kg	1400	<1400	U
26	1,2-Dichlorobenzene	95-50-1	µg/kg	1400	<1400	U
27	1,3-Dichlorobenzene	541-73-1	µg/kg	1400	<1400	U
28	1,4-Dichlorobenzene	106-46-7	µg/kg	1400	<1400	U
29	3,3'-Dichlorobenzidine	91-94-1	µg/kg	1400	<1400	U
30	2,4-Dichlorophenol	120-83-2	µg/kg	1400	<1400	U
31	Diethyl phthalate (DEP)	84-66-2	µg/kg	1400	<1400	U
32	Dimethyl phthalate (DMP)	131-11-3	µg/kg	1400	<1400	U
33	2,4-Dimethylphenol	105-67-9	µg/kg	1400	<1400	U
34	4,6-Dinitro-2-methylphenol	531-52-1	µg/kg	3600	<3600	U
35	2,4-Dinitrophenol	51-28-5	µg/kg	3600	<3600	U
36	2,4-Dinitrotoluene	121-14-2	µg/kg	1400	<1400	U
37	2,6-Dinitrotoluene	606-20-2	µg/kg	1400	<1400	U
38	Fluoranthene	206-44-0	µg/kg	1400	<1400	U
39	Fluorene	86-73-7	µg/kg	1400	<1400	U
40	Hexachlorobenzene	118-74-1	µg/kg	1400	<1400	U

56750

#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorobutadiene	87-68-3	µg/kg	1400	<1400	U
42	Hexachlorocyclopentadiene	77-47-4	µg/kg	1400	<1400	U
43	Hexachloroethane	67-72-1	µg/kg	1400	<1400	U
44	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	1400	<1400	U
45	Isophorone	78-59-1	µg/kg	1400	<1400	U
46	2-Methylnaphthalene	91-57-6	µg/kg	1400	<1400	U
47	2-Methylphenol ( <i>o</i> -Cresol)	95-48-7	µg/kg	1400	<1400	U
48	4-Methylphenol ( <i>p</i> -cresol)	106-44-5	µg/kg	1400	<1400	U
49	Naphthalene	91-20-3	µg/kg	1400	<1400	U
50	2-Nitroaniline	88-74-4	µg/kg	3600	<3600	U
51	3-Nitroaniline	99-09-2	µg/kg	3600	<3600	U
52	4-Nitroaniline	100-01-6	µg/kg	3600	<3600	U
53	Nitrobenzene	98-95-3	µg/kg	1400	<1400	U
54	2-Nitrophenol	88-75-5	µg/kg	1400	<1400	U
55	4-Nitrophenol	100-02-7	µg/kg	3600	<3600	U
56	N-Nitroso-di- <i>n</i> -propylamine	621-64-7	µg/kg	1400	<1400	U
57	N-Nitrosodiphenylamine	86-30-6	µg/kg	1400	<1400	U
58	Pentachlorophenol (PCP)	87-86-5	µg/kg	3600	<3600	U
59	Phenanthrene	85-01-8	µg/kg	1400	<1400	U
60	Phenol	108-95-2	µg/kg	1400	<1400	U
61	Pyrene	129-00-0	µg/kg	1400	<1400	U
62	1,2,4-Trichlorobenzene	120-82-1	µg/kg	1400	<1400	U
63	2,4,5-Trichlorophenol	95-95-4	µg/kg	3600	<3600	U
64	2,4,6-Trichlorophenol	88-06-2	µg/kg	1400	<1400	U

**TIC (Tentative Identified Components): Not Found**

Surrogates		Control Limit, %	Surro. Rec.%
1	Nitrobenzene-d5	4165-60-0	23-120
2	2-Fluorobiphenyl	321-60-8	30-115
3	Terphenyl-d14	1718-51-0	18-137
4	Phenol-d5	4165-62-2	24-113
5	2-Fluorophenol	367-12-4	25-121
6	2,4,6-Tribromophenol	118-79-6	19-122
7	2-Chlorophenol-d4		20-130
8	1,2-Dichlorobenzene-d4	2199-69-1	20-130
# of out-of-control			1
Internal Standard		Control Limit, %	IS Rec.%
1	1,4-Dichlorobenzene-d4	3855-82-1	50-200
2	Naphthalene-d8	1146-65-2	50-200
3	Acenaphthene-d10	15067-26-2	50-200
4	Phenanthrene-d10	1517-22-2	50-200
5	Chrysene-d12	1719-03-5	50-200
6	Perylene-d12	1520-96-3	50-200
# of out-of-control			0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL

E - Exceed calibration range

I - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)

B - A positive value was found in the method blank

D - Diluted

56751

**Applied P & Ch Laboratory**  
**SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET for Method CLP-SVOC**

Client Name:	Tetra Tech EM Inc.	Project No:	G0069-267A01	Collection Date:	02/12/1999
Project ID:	PO#992208	SDG Number:	991825	Collected by:	Lantz/Carlson
Sample ID:	<b>267AOCSB011</b>	Lab Sample ID:	99-1825-2	Received Date:	02/13/1999
Sample Type:	Field Sample	Sample Matrix	Soil	Moisture %:	12.1
Anal. Method:	CLP-SVOC	Prep. Method:	3550	Instrument ID:	GC/MS: Z
Batch No:	99G1526	Prep. Date:	02/16/99	Anal. Date:	02/18/99
Data File Name:	1825-02	Prep. No:	1 of 1	Anal. Time:	15:04
Extract Vol.	4.0 mL	Sample Amount:	30.0 g	Dilution Factor:	1

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	380	<380	U
2	Acenaphthylene	208-96-8	µg/kg	380	<380	U
3	Anthracene	120-12-7	µg/kg	380	<380	U
4	Benz(a)anthracene	56-55-3	µg/kg	380	<380	U
5	Benzo(a)pyrene	50-32-8	µg/kg	380	<380	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	380	<380	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	380	<380	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	380	<380	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	380	<380	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	380	<380	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	380	<380	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	380	<380	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	380	<380	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	380	<380	U
15	Carbazole	86-74-8	µg/kg	380	<380	U
16	4-Chloro-3-methylphenol	59-50-7	µg/kg	380	<380	U
17	4-Chloroaniline	106-47-8	µg/kg	380	<380	U
18	2-Choronaphthalene	91-58-7	µg/kg	380	<380	U
19	2-Chlorophenol	95-57-8	µg/kg	380	<380	U
20	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	380	<380	U
21	Chrysene	218-01-9	µg/kg	380	<380	U
22	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	380	<380	U
23	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	380	<380	U
24	Dibenz(a,h)anthracene	53-70-3	µg/kg	380	<380	U
25	Dibenzofuran	132-64-9	µg/kg	380	<380	U
26	1,2-Dichlorobenzene	95-50-1	µg/kg	380	<380	U
27	1,3-Dichlorobenzene	541-73-1	µg/kg	380	<380	U
28	1,4-Dichlorobenzene	106-46-7	µg/kg	380	<380	U
29	3,3'-Dichlorobenzidine	91-94-1	µg/kg	380	<380	U
30	2,4-Dichlorophenol	120-83-2	µg/kg	380	<380	U
31	Diethyl phthalate (DEP)	84-66-2	µg/kg	380	<380	U
32	Dimethyl phthalate (DMP)	131-11-3	µg/kg	380	<380	U
33	2,4-Dimethylphenol	105-67-9	µg/kg	380	<380	U
34	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	940	<940	U
35	2,4-Dinitrophenol	51-28-5	µg/kg	940	<940	U
36	2,4-Dinitrotoluene	121-14-2	µg/kg	380	<380	U
37	2,6-Dinitrotoluene	606-20-2	µg/kg	380	<380	U
38	Fluoranthene	206-44-0	µg/kg	380	<380	U
39	Fluorene	86-73-7	µg/kg	380	<380	U
40	Hexachlorobenzene	118-74-1	µg/kg	380	<380	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorobutadiene	87-68-3	µg/kg	380	<380	U
42	Hexachlorocyclopentadiene	77-47-4	µg/kg	380	<380	U
43	Hexachloroethane	67-72-1	µg/kg	380	<380	U
44	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	380	<380	U
45	Isophorone	78-59-1	µg/kg	380	<380	U
46	2-Methylnaphthalene	91-57-6	µg/kg	380	<380	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	380	<380	U
48	4-Methylphenol (p-cresol)	106-44-5	µg/kg	380	<380	U
49	Naphthalene	91-20-3	µg/kg	380	<380	U
50	2-Nitroaniline	88-74-4	µg/kg	940	<940	U
51	3-Nitroaniline	99-09-2	µg/kg	940	<940	U
52	4-Nitroaniline	100-01-6	µg/kg	940	<940	U
53	Nitrobenzene	98-95-3	µg/kg	380	<380	U
54	2-Nitrophenol	88-75-5	µg/kg	380	<380	U
55	4-Nitrophenol	100-02-7	µg/kg	940	<940	U
56	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	380	<380	U
57	N-Nitrosodiphenylamine	86-30-6	µg/kg	380	<380	U
58	Pentachlorophenol (PCP)	87-86-5	µg/kg	940	<940	U
59	Phenanthere	85-01-8	µg/kg	380	<380	U
60	Phenol	108-95-2	µg/kg	380	<380	U
61	Pyrene	129-00-0	µg/kg	380	<380	U
62	1,2,4-Trichlorobenzene	120-82-1	µg/kg	380	<380	U
63	2,4,5-Trichlorophenol	95-95-4	µg/kg	940	<940	U
64	2,4,6-Trichlorophenol	88-06-2	µg/kg	380	<380	U
<b>TIC (Tentative Identified Components)</b>				<b>RT (min)</b>		
1	Toluene	108-88-3	µg/kg	4.49	140	JN
2	1,3-Dimethyl cyclopentanol	19550-46-0	µg/kg	6.04	170	JN
3	Cyclohexanol, 1-methyl-	590-67-0	µg/kg	7.12	120	JN
4	Acetophenone	98-86-2	µg/kg	10.25	490	JN
<b>Surrogates</b>				<b>Control Limit, %</b>	<b>Surro. Rec.%</b>	
1	Nitrobenzene-d5	4165-60-0		23-120	50	
2	2-Fluorobiphenyl	321-60-8		30-115	49	
3	Terphenyl-d14	1718-51-0		18-137	65	
4	Phenol-d5	4165-62-2		24-113	47	
5	2-Fluorophenol	367-12-4		25-121	33	
6	2,4,6-Tribromophenol	118-79-6		19-122	47	
7	2-Chlorophenol-d4			20-130	52	
8	1,2-Dichlorobenzene-d4	2199-69-1		20-130	52	
# of out-of-control					0	
<b>Internal Standard</b>				<b>Control Limit, %</b>	<b>IS Rec.%</b>	
1	1,4-Dichlorobenzene-d4	3855-82-1		50-200	133	
2	Naphthalene-d8	1146-65-2		50-200	136	
3	Acenaphthene-d10	15067-26-2		50-200	148	
4	Phenanthere-d10	1517-22-2		50-200	152	
5	Chrysene-d12	1719-03-5		50-200	139	
6	Perylene-d12	1520-96-3		50-200	148	
# of out-of-control					0	

56753

**Applied P & Ch Laboratory**  
**SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET for Method CLP-SVOC**

Client Name:	Tetra Tech EM Inc.	Project No:	G0069-267A01	Collection Date:	02/12/1999
Project ID:	PO#992208	SDG Number:	991825	Collected by:	Lantz/Carlson
Sample ID:	<b>267AOCSB012</b>	Lab Sample ID:	99-1825-3	Received Date:	02/13/1999
Sample Type:	Field Sample	Sample Matrix	Soil	Moisture %:	13.3
Anal. Method:	CLP-SVOC	Prep. Method:	3550	Instrument ID:	GC/MS: Z
Batch No:	99G1526	Prep. Date:	02/16/99	Anal. Date:	02/18/99
Data File Name:	1825-03	Prep. No:	1 of 1	Anal. Time:	18:20
Extract Vol.	4.0 mL	Sample Amount:	30.0 g	Dilution Factor:	1

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	380	<380	U
2	Acenaphthylene	208-96-8	µg/kg	380	<380	U
3	Anthracene	120-12-7	µg/kg	380	<380	U
4	Benz(a)anthracene	56-55-3	µg/kg	380	<380	U
5	Benzo(a)pyrene	50-32-8	µg/kg	380	<380	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	380	<380	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	380	<380	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	380	<380	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	380	<380	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	380	<380	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	380	<380	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	380	<380	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	380	<380	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	380	<380	U
15	Carbazole	86-74-8	µg/kg	380	<380	U
16	4-Chloro-3-methylphenol	59-50-7	µg/kg	380	<380	U
17	4-Chloroaniline	106-47-8	µg/kg	380	<380	U
18	2-Chloronaphthalene	91-58-7	µg/kg	380	<380	U
19	2-Chlorophenol	95-57-8	µg/kg	380	<380	U
20	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	380	<380	U
21	Chrysene	218-01-9	µg/kg	380	<380	U
22	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	380	<380	U
23	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	380	<380	U
24	Dibenz(a,h)anthracene	53-70-3	µg/kg	380	<380	U
25	Dibenzofuran	132-64-9	µg/kg	380	<380	U
26	1,2-Dichlorobenzene	95-50-1	µg/kg	380	<380	U
27	1,3-Dichlorobenzene	541-73-1	µg/kg	380	<380	U
28	1,4-Dichlorobenzene	106-46-7	µg/kg	380	<380	U
29	3,3'-Dichlorobenzidine	91-94-1	µg/kg	380	<380	U
30	2,4-Dichlorophenol	120-83-2	µg/kg	380	<380	U
31	Diethyl phthalate (DEP)	84-66-2	µg/kg	380	<380	U
32	Dimethyl phthalate (DMP)	131-11-3	µg/kg	380	<380	U
33	2,4-Dimethylphenol	105-67-9	µg/kg	380	<380	U
34	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	960	<960	U
35	2,4-Dinitrophenol	51-28-5	µg/kg	960	<960	U
36	2,4-Dinitrotoluene	121-14-2	µg/kg	380	<380	U
37	2,6-Dinitrotoluene	606-20-2	µg/kg	380	<380	U
38	Fluoranthene	206-44-0	µg/kg	380	<380	U
39	Fluorene	86-73-7	µg/kg	380	<380	U
40	Hexachlorobenzene	118-74-1	µg/kg	380	<380	U

#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorobutadiene	87-68-3	µg/kg	380	<380	U
42	Hexachlorocyclopentadiene	77-47-4	µg/kg	380	<380	U
43	Hexachloroethane	67-72-1	µg/kg	380	<380	U
44	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	380	<380	U
45	Isophorone	78-59-1	µg/kg	380	<380	U
46	2-Methylnaphthalene	91-57-6	µg/kg	380	<380	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	380	<380	U
48	4-Methylphenol (p-cresol)	106-44-5	µg/kg	380	<380	U
49	Naphthalene	91-20-3	µg/kg	380	<380	U
50	2-Nitroaniline	88-74-4	µg/kg	960	<960	U
51	3-Nitroaniline	99-09-2	µg/kg	960	<960	U
52	4-Nitroaniline	100-01-6	µg/kg	960	<960	U
53	Nitrobenzene	98-95-3	µg/kg	380	<380	U
54	2-Nitrophenol	88-75-5	µg/kg	380	<380	U
55	4-Nitrophenol	100-02-7	µg/kg	960	<960	U
56	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	380	<380	U
57	N-Nitrosodiphenylamine	86-30-6	µg/kg	380	<380	U
58	Pentachlorophenol (PCP)	87-86-5	µg/kg	960	<960	U
59	Phenanthrene	85-01-8	µg/kg	380	<380	U
60	Phenol	108-95-2	µg/kg	380	<380	U
61	Pyrene	129-00-0	µg/kg	380	<380	U
62	1,2,4-Trichlorobenzene	120-82-1	µg/kg	380	<380	U
63	2,4,5-Trichlorophenol	95-95-4	µg/kg	960	<960	U
64	2,4,6-Trichlorophenol	88-06-2	µg/kg	380	<380	U

**TIC (Tentative Identified Components): Not Found**

Surrogates		Control Limit, %	Surro. Rec.%
1	Nitrobenzene-d5	4165-60-0	23-120
2	2-Fluorobiphenyl	321-60-8	30-115
3	Terphenyl-d14	1718-51-0	18-137
4	Phenol-d5	4165-62-2	24-113
5	2-Fluorophenol	367-12-4	25-121
6	2,4,6-Tribromophenol	118-79-6	19-122
7	2-Chlorophenol-d4		20-130
8	1,2-Dichlorobenzene-d4	2199-69-1	20-130
# of out-of-control			1
Internal Standard		Control Limit, %	IS Rec.%
1	1,4-Dichlorobenzene-d4	3855-82-1	50-200
2	Naphthalene-d8	1146-65-2	50-200
3	Acenaphthene-d10	15067-26-2	50-200
4	Phenanthrene-d10	1517-22-2	50-200
5	Chrysene-d12	1719-03-5	50-200
6	Perylene-d12	1520-96-3	50-200
# of out-of-control			0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL

E - Exceed calibration range

J - Less than RL (PQL, EQL or CRDL), but greater  
than MDL, or an estimated result (e.g. for TIC)

B - A positive value was found in the method blank

D - Diluted

56756

**Applied P & Ch Laboratory**  
**SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET for Method CLP-SVOC**

Client Name:	Tetra Tech EM Inc.	Project No:	G0069-267A01	Collection Date:	02/12/1999
Project ID:	PO#992208	SDG Number:	991825	Collected by:	Lantz/Carlson
Sample ID:	<b>267AOCSB013</b>	Lab Sample ID:	99-1825-4	Received Date:	02/13/1999
Sample Type:	Field Sample	Sample Matrix	Soil	Moisture %:	22.3
Anal. Method:	CLP-SVOC	Prep. Method:	3550	Instrument ID:	GC/MS: Z
Batch No:	99G1526	Prep. Date:	02/16/99	Anal. Date:	02/18/99
Data File Name:	1825-04	Prep. No:	1 of 1	Anal. Time:	17:41
Extract Vol.	4.0 mL	Sample Amount:	30.0 g	Dilution Factor:	1

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	420	< 420	U
2	Acenaphthylene	208-96-8	µg/kg	420	< 420	U
3	Anthracene	120-12-7	µg/kg	420	< 420	U
4	Benz(a)anthracene	56-55-3	µg/kg	420	< 420	U
5	Benzo(a)pyrene	50-32-8	µg/kg	420	< 420	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	420	< 420	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	420	< 420	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	420	< 420	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	420	< 420	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	420	< 420	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	420	< 420	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	420	< 420	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	420	< 420	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	420	< 420	U
15	Carbazole	86-74-8	µg/kg	420	< 420	U
16	4-Chloro-3-methylphenol	59-50-7	µg/kg	420	< 420	U
17	4-Chloroaniline	106-47-8	µg/kg	420	< 420	U
18	2-Chloronaphthalene	91-58-7	µg/kg	420	< 420	U
19	2-Chlorophenol	95-57-8	µg/kg	420	< 420	U
20	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	420	< 420	U
21	Chrysene	218-01-9	µg/kg	420	< 420	U
22	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	420	< 420	U
23	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	420	< 420	U
24	Dibenz(a,h)anthracene	53-70-3	µg/kg	420	< 420	U
25	Dibenzofuran	132-64-9	µg/kg	420	< 420	U
26	1,2-Dichlorobenzene	95-50-1	µg/kg	420	< 420	U
27	1,3-Dichlorobenzene	541-73-1	µg/kg	420	< 420	U
28	1,4-Dichlorobenzene	106-46-7	µg/kg	420	< 420	U
29	3,3'-Dichlorobenzidine	91-94-1	µg/kg	420	< 420	U
30	2,4-Dichlorophenol	120-83-2	µg/kg	420	< 420	U
31	Diethyl phthalate (DEP)	84-66-2	µg/kg	420	< 420	U
32	Dimethyl phthalate (DMP)	131-11-3	µg/kg	420	< 420	U
33	2,4-Dimethylphenol	105-67-9	µg/kg	420	< 420	U
34	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	1100	< 1100	U
35	2,4-Dinitrophenol	51-28-5	µg/kg	1100	< 1100	U
36	2,4-Dinitrotoluene	121-14-2	µg/kg	420	< 420	U
37	2,6-Dinitrotoluene	606-20-2	µg/kg	420	< 420	U
38	Fluoranthene	206-44-0	µg/kg	420	< 420	U
39	Fluorene	86-73-7	µg/kg	420	< 420	U
40	Hexachlorobenzene	118-74-1	µg/kg	420	< 420	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorobutadiene	87-68-3	µg/kg	420	< 420	U
42	Hexachlorocyclopentadiene	77-47-4	µg/kg	420	< 420	U
43	Hexachloroethane	67-72-1	µg/kg	420	< 420	U
44	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	420	< 420	U
45	Isophorone	78-59-1	µg/kg	420	< 420	U
46	2-Methylnaphthalene	91-57-6	µg/kg	420	< 420	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	420	< 420	U
48	4-Methylphenol (p-cresol)	106-44-5	µg/kg	420	< 420	U
49	Naphthalene	91-20-3	µg/kg	420	< 420	U
50	2-Nitroaniline	88-74-4	µg/kg	1100	< 1100	U
51	3-Nitroaniline	99-09-2	µg/kg	1100	< 1100	U
52	4-Nitroaniline	100-01-6	µg/kg	1100	< 1100	U
53	Nitrobenzene	98-95-3	µg/kg	420	< 420	U
54	2-Nitrophenol	88-75-5	µg/kg	420	< 420	U
55	4-Nitrophenol	100-02-7	µg/kg	1100	< 1100	U
56	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	420	< 420	U
57	N-Nitrosodiphenylamine	86-30-6	µg/kg	420	< 420	U
58	Pentachlorophenol (PCP)	87-86-5	µg/kg	1100	< 1100	U
59	Phenanthrene	85-01-8	µg/kg	420	< 420	U
60	Phenol	108-95-2	µg/kg	420	< 420	U
61	Pyrene	129-00-0	µg/kg	420	< 420	U
62	1,2,4-Trichlorobenzene	120-82-1	µg/kg	420	< 420	U
63	2,4,5-Trichlorophenol	95-95-4	µg/kg	1100	< 1100	U
64	2,4,6-Trichlorophenol	88-06-2	µg/kg	420	< 420	U
<b>TIC (Tentative Identified Components)</b>				<b>RT (min)</b>		
1	Sulfur, mol. (S8)	10544-50-0	µg/kg	21.42	200	JN
2	Tetracosane, C <sub>24</sub>	646-31-1	µg/kg	25.16	200	JN
3	Hexatriacontane, C <sub>36</sub>	630-06-8	µg/kg	26.69	430	JN
<b>Surrogates</b>				<b>Control Limit, %</b>	<b>Surro. Rec.%</b>	
1	Nitrobenzene-d5	4165-60-0		23-120	55	
2	2-Fluorobiphenyl	321-60-8		30-115	53	
3	Terphenyl-d14	1718-51-0		18-137	67	
4	Phenol-d5	4165-62-2		24-113	52	
5	2-Fluorophenol	367-12-4		25-121	29	
6	2,4,6-Tribromophenol	118-79-6		19-122	56	
7	2-Chlorophenol-d4			20-130	56	
8	1,2-Dichlorobenzene-d4	2199-69-1		20-130	55	
# of out-of-control					0	
<b>Internal Standard</b>				<b>Control Limit, %</b>	<b>IS Rec.%</b>	
1	1,4-Dichlorobenzene-d4	3855-82-1		50-200	118	
2	Naphthalene-d8	1146-65-2		50-200	112	
3	Acenaphthene-d10	15067-26-2		50-200	118	
4	Phenanthrene-d10	1517-22-2		50-200	118	
5	Chrysene-d12	1719-03-5		50-200	110	
6	Perylene-d12	1520-96-3		50-200	120	
# of out-of-control					0	

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**Applied P & Ch Laboratory**  
**SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET for Method CLP-SVOC**

Client Name: Tetra Tech EM Inc. Project No: G0069-267A01 Collection Date: 02/12/1999  
 Project ID: PO#992208 SDG Number: 991825 Collected by: Lantz/Carlo  
 Sample ID: 267AOCSB014 Lab Sample ID: 99-1825-5 Received Date: 02/13/1999  
 Sample Type: Field Sample Sample Matrix: Soil Moisture %: 36.4  
 Anal. Method: CLP-SVOC Prep. Method: 3550 Instrument ID: GC/MS: Z  
 Batch No: 99G1526 Prep. Date: 02/16/99 Anal. Date: 02/18/99  
 Data File Name: 1825-05 Prep. No: 1 of 1 Anal. Time: 14:25  
 Extract Vol. 4.0 mL Sample Amount: 30.0 g Dilution Factor: 1

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	520	< 520	U
2	Acenaphthylene	208-96-8	µg/kg	520	< 520	U
3	Anthracene	120-12-7	µg/kg	520	< 520	U
4	Benz(a)anthracene	56-55-3	µg/kg	520	< 520	U
5	Benzo(a)pyrene	50-32-8	µg/kg	520	< 520	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	520	< 520	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	520	< 520	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	520	< 520	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	520	< 520	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	520	< 520	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	520	< 520	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	520	< 520	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	520	< 520	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	520	< 520	U
15	Carbazole	86-74-8	µg/kg	520	< 520	U
16	4-Chloro-3-methylphenol	59-50-7	µg/kg	520	< 520	U
17	4-Chloroaniline	106-47-8	µg/kg	520	< 520	U
18	2-Chloronaphthalene	91-58-7	µg/kg	520	< 520	U
19	2-Chlorophenol	95-57-8	µg/kg	520	< 520	U
20	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	520	< 520	U
21	Chrysene	218-01-9	µg/kg	520	< 520	U
22	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	520	< 520	U
23	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	520	< 520	U
24	Dibenz(a,h)anthracene	53-70-3	µg/kg	520	< 520	U
25	Dibenzofuran	132-64-9	µg/kg	520	< 520	U
26	1,2-Dichlorobenzene	95-50-1	µg/kg	520	< 520	U
27	1,3-Dichlorobenzene	541-73-1	µg/kg	520	< 520	U
28	1,4-Dichlorobenzene	106-46-7	µg/kg	520	< 520	U
29	3,3'-Dichlorobenzidine	91-94-1	µg/kg	520	< 520	U
30	2,4-Dichlorophenol	120-83-2	µg/kg	520	< 520	U
31	Diethyl phthalate (DEP)	84-66-2	µg/kg	520	< 520	U
32	Dimethyl phthalate (DMP)	131-11-3	µg/kg	520	< 520	U
33	2,4-Dimethylphenol	105-67-9	µg/kg	520	< 520	U
34	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	1300	< 1300	U
35	2,4-Dinitrophenol	51-28-5	µg/kg	1300	< 1300	U
36	2,4-Dinitrotoluene	121-14-2	µg/kg	520	< 520	U
37	2,6-Dinitrotoluene	606-20-2	µg/kg	520	< 520	U
38	Fluoranthene	206-44-0	µg/kg	520	< 520	U
39	Fluorene	86-73-7	µg/kg	520	< 520	U
40	Hexachlorobenzene	118-74-1	µg/kg	520	< 520	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorobutadiene	87-68-3	µg/kg	520	< 520	U
42	Hexachlorocyclopentadiene	77-47-4	µg/kg	520	< 520	U
43	Hexachloroethane	67-72-1	µg/kg	520	< 520	U
44	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	520	< 520	U
45	Isophorone	78-59-1	µg/kg	520	< 520	U
46	2-Methylnaphthalene	91-57-6	µg/kg	520	< 520	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	520	< 520	U
48	4-Methylphenol (p-cresol)	106-44-5	µg/kg	520	< 520	U
49	Naphthalene	91-20-3	µg/kg	520	< 520	U
50	2-Nitroaniline	88-74-4	µg/kg	1300	< 1300	U
51	3-Nitroaniline	99-09-2	µg/kg	1300	< 1300	U
52	4-Nitroaniline	100-01-6	µg/kg	1300	< 1300	U
53	Nitrobenzene	98-95-3	µg/kg	520	< 520	U
54	2-Nitrophenol	88-75-5	µg/kg	520	< 520	U
55	4-Nitrophenol	100-02-7	µg/kg	1300	< 1300	U
56	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	520	< 520	U
57	N-Nitrosodiphenylamine	86-30-6	µg/kg	520	< 520	U
58	Pentachlorophenol (PCP)	87-86-5	µg/kg	1300	< 1300	U
59	Phenanthrene	85-01-8	µg/kg	520	< 520	U
60	Phenol	108-95-2	µg/kg	520	< 520	U
61	Pyrene	129-00-0	µg/kg	520	< 520	U
62	1,2,4-Trichlorobenzene	120-82-1	µg/kg	520	< 520	U
63	2,4,5-Trichlorophenol	95-95-4	µg/kg	1300	< 1300	U
64	2,4,6-Trichlorophenol	88-06-2	µg/kg	520	< 520	U
<b>TIC (Tentatively Identified Components)</b>				<b>RT (min)</b>		
1	Diisobutyl phthalate (DIBP)	84-69-5	µg/kg	20.18	130	JN
<b>Surrogates</b>				<b>Control Limit, %</b>	<b>Surro. Rec.%</b>	
1	Nitrobenzene-d5	4165-60-0		23-120	43	
2	2-Fluorobiphenyl	321-60-8		30-115	42	
3	Terphenyl-d14	1718-51-0		18-137	61	
4	Phenol-d5	4165-62-2		24-113	41	
5	2-Fluorophenol	367-12-4		25-121	25	
6	2,4,6-Tribromophenol	118-79-6		19-122	43	
7	2-Chlorophenol-d4			20-130	43	
8	1,2-Dichlorobenzene-d4	2199-69-1		20-130	43	
# of out-of-control					0	
<b>Internal Standard</b>				<b>Control Limit, %</b>	<b>IS Rec.%</b>	
1	1,4-Dichlorobenzene-d4	3855-82-1		50-200	132	
2	Naphthalene-d8	1146-65-2		50-200	134	
3	Acenaphthene-d10	15067-26-2		50-200	141	
4	Phenanthrene-d10	1517-22-2		50-200	145	
5	Chrysene-d12	1719-03-5		50-200	130	
6	Perylene-d12	1520-96-3		50-200	142	
# of out-of-control					0	

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL

J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)

E - Exceed calibration range

B - A positive value was found in the method blank

D - Diluted

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**Applied P & Ch Laboratory**  
**SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET for Method CLP-SVOC**

Client Name:	Tetra Tech EM Inc.	Project No:	G0069-267A01	Collection Date:	02/12/1999
Project ID:	PO#992208	SDG Number:	991825	Collected by:	Lantz/Carlson
Sample ID:	<b>267AOCSB015</b>	Lab Sample ID:	99-1825-6	Received Date:	02/13/1999
Sample Type:	Field Sample	Sample Matrix	Soil	Moisture %:	20.3
Anal. Method:	CLP-SVOC	Prep. Method:	3550	Instrument ID:	GC/MS: Z
Batch No:	99G1526	Prep. Date:	02/16/99	Anal. Date:	02/18/99
Data File Name:	1825-06	Prep. No:	1 of 1	Anal. Time:	15:44
Extract Vol.	4.0 mL	Sample Amount:	30.0 g	Dilution Factor:	1

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	410	<410	U
2	Acenaphthylene	208-96-8	µg/kg	410	<410	U
3	Anthracene	120-12-7	µg/kg	410	<410	U
4	Benz(a)anthracene	56-55-3	µg/kg	410	<410	U
5	Benzo(a)pyrene	50-32-8	µg/kg	410	<410	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	410	<410	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	410	<410	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	410	<410	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	410	<410	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	410	<410	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	410	<410	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	410	<410	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	410	<410	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	410	<410	U
15	Carbazole	86-74-8	µg/kg	410	<410	U
16	4-Chloro-3-methylphenol	59-50-7	µg/kg	410	<410	U
17	4-Chloroaniline	106-47-8	µg/kg	410	<410	U
18	2-Chloronaphthalene	91-58-7	µg/kg	410	<410	U
19	2-Chlorophenol	95-57-8	µg/kg	410	<410	U
20	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	410	<410	U
21	Chrysene	218-01-9	µg/kg	410	<410	U
22	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	410	<410	U
23	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	410	<410	U
24	Dibenz(a,h)anthracene	53-70-3	µg/kg	410	<410	U
25	Dibenzofuran	132-64-9	µg/kg	410	<410	U
26	1,2-Dichlorobenzene	95-50-1	µg/kg	410	<410	U
27	1,3-Dichlorobenzene	541-73-1	µg/kg	410	<410	U
28	1,4-Dichlorobenzene	106-46-7	µg/kg	410	<410	U
29	3,3'-Dichlorobenzidine	91-94-1	µg/kg	410	<410	U
30	2,4-Dichlorophenol	120-83-2	µg/kg	410	<410	U
31	Diethyl phthalate (DEP)	84-66-2	µg/kg	410	<410	U
32	Dimethyl phthalate (DMP)	131-11-3	µg/kg	410	<410	U
33	2,4-Dimethylphenol	105-67-9	µg/kg	410	<410	U
34	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	1000	<1000	U
35	2,4-Dinitrophenol	51-28-5	µg/kg	1000	<1000	U
36	2,4-Dinitrotoluene	121-14-2	µg/kg	410	<410	U
37	2,6-Dinitrotoluene	606-20-2	µg/kg	410	<410	U
38	Fluoranthene	206-44-0	µg/kg	410	<410	U
39	Fluorene	86-73-7	µg/kg	410	<410	U
40	Hexachlorobenzene	118-74-1	µg/kg	410	<410	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorobutadiene	87-68-3	µg/kg	410	<410	U
42	Hexachlorocyclopentadiene	77-47-4	µg/kg	410	<410	U
43	Hexachloroethane	67-72-1	µg/kg	410	<410	U
44	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	410	<410	U
45	Isophorone	78-59-1	µg/kg	410	<410	U
46	2-Methylnaphthalene	91-57-6	µg/kg	410	<410	U
47	2-Methylphenol ( <i>o</i> -Cresol)	95-48-7	µg/kg	410	<410	U
48	4-Methylphenol ( <i>p</i> -cresol)	106-44-5	µg/kg	410	<410	U
49	Naphthalene	91-20-3	µg/kg	410	<410	U
50	2-Nitroaniline	88-74-4	µg/kg	1000	<1000	U
51	3-Nitroaniline	99-09-2	µg/kg	1000	<1000	U
52	4-Nitroaniline	100-01-6	µg/kg	1000	<1000	U
53	Nitrobenzene	98-95-3	µg/kg	410	<410	U
54	2-Nitrophenol	88-75-5	µg/kg	410	<410	U
55	4-Nitrophenol	100-02-7	µg/kg	1000	<1000	U
56	N-Nitroso-di- <i>n</i> -propylamine	621-64-7	µg/kg	410	<410	U
57	N-Nitrosodiphenylamine	86-30-6	µg/kg	410	<410	U
58	Pentachlorophenol (PCP)	87-86-5	µg/kg	1000	<1000	U
59	Phenanthrene	85-01-8	µg/kg	410	<410	U
60	Phenol	108-95-2	µg/kg	410	<410	U
61	Pyrene	129-00-0	µg/kg	410	<410	U
62	1,2,4-Trichlorobenzene	120-82-1	µg/kg	410	<410	U
63	2,4,5-Trichlorophenol	95-95-4	µg/kg	1000	<1000	U
64	2,4,6-Trichlorophenol	88-06-2	µg/kg	410	<410	U
<b>TIC (Tentative Identified Components)</b>				<b>RT (min)</b>		
1	1,2-Benzenedicarboxylic acid, <i>b</i>	85-69-8	µg/kg	20.17	140	JN
2	Dotriacontane, C <sub>32</sub>	544-85-4	µg/kg	25.16	190	JN
3	Hexatriacontane, C <sub>36</sub>	630-06-8	µg/kg	26.69	240	JN
<b>Surrogates</b>				<b>Control Limit, %</b>	<b>Surro. Rec.%</b>	
1	Nitrobenzene-d5	4165-60-0		23-120	43	
2	2-Fluorobiphenyl	321-60-8		30-115	44	
3	Terphenyl-d14	1718-51-0		18-137	59	
4	Phenol-d5	4165-62-2		24-113	41	
5	2-Fluorophenol	367-12-4		25-121	21	
6	2,4,6-Tribromophenol	118-79-6		19-122	51	
7	2-Chlorophenol-d4			20-130	44	
8	1,2-Dichlorobenzene-d4	2199-69-1		20-130	44	
# of out-of-control					1	
<b>Internal Standard</b>				<b>Control Limit, %</b>	<b>IS Rec.%</b>	
1	1,4-Dichlorobenzene-d4	3855-82-1		50-200	134	
2	Naphthalene-d8	1146-65-2		50-200	140	
3	Aceanaphthene-d10	15067-26-2		50-200	148	
4	Phenanthrene-d10	1517-22-2		50-200	151	
5	Chrysene-d12	1719-03-5		50-200	147	
6	Perylene-d12	1520-96-3		50-200	162	
# of out-of-control					0	

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**Applied P & Ch Laboratory**  
**SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET for Method CLP-SVOC**

Client Name:	Tetra Tech EM Inc.	Project No:	G0069-267A01	Collection Date:	02/12/1999
Project ID:	PO#992208	SDG Number:	991825	Collected by:	Lantz/Carlson
Sample ID:	<b>267AOCSB016</b>	Lab Sample ID:	99-1825-7	Received Date:	02/13/1999
Sample Type:	Field Sample	Sample Matrix	Soil	Moisture %:	18.9
Anal. Method:	CLP-SVOC	Prep. Method:	3550	Instrument ID:	GC/MS: Z
Batch No:	99G1526	Prep. Date:	02/16/99	Anal. Date:	02/18/99
Data File Name:	1825-07	Prep. No:	1 of 1	Anal. Time:	13:45
Extract Vol.	4.0 mL	Sample Amount:	30.0 g	Dilution Factor:	1

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/kg	410	<410	U
2	Acenaphthylene	208-96-8	µg/kg	410	<410	U
3	Anthracene	120-12-7	µg/kg	410	<410	U
4	Benz(a)anthracene	56-55-3	µg/kg	410	<410	U
5	Benzo(a)pyrene	50-32-8	µg/kg	410	<410	U
6	Benzo(b)fluoranthene	205-99-2	µg/kg	410	<410	U
7	Benzo(g,h,i)perylene	191-24-2	µg/kg	410	<410	U
8	Benzo(k)fluoranthene	207-08-9	µg/kg	410	<410	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/kg	410	<410	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/kg	410	<410	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/kg	410	<410	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/kg	410	<410	U
13	4-Bromophenyl phenyl ether	101-55-3	µg/kg	410	<410	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/kg	410	<410	U
15	Carbazole	86-74-8	µg/kg	410	<410	U
16	4-Chloro-3-methylphenol	59-50-7	µg/kg	410	<410	U
17	4-Chloroaniline	106-47-8	µg/kg	410	<410	U
18	2-Chloronaphthalene	91-58-7	µg/kg	410	<410	U
19	2-Chlorophenol	95-57-8	µg/kg	410	<410	U
20	4-Chlorophenyl phenyl ether	7005-72-3	µg/kg	410	<410	U
21	Chrysene	218-01-9	µg/kg	410	<410	U
22	Di-n-butyl phthalate (DBP)	84-74-2	µg/kg	410	<410	U
23	Di-n-octyl phthalate (DOP)	117-84-0	µg/kg	410	<410	U
24	Dibenz(a,h)anthracene	53-70-3	µg/kg	410	<410	U
25	Dibenzofuran	132-64-9	µg/kg	410	<410	U
26	1,2-Dichlorobenzene	95-50-1	µg/kg	410	<410	U
27	1,3-Dichlorobenzene	541-73-1	µg/kg	410	<410	U
28	1,4-Dichlorobenzene	106-46-7	µg/kg	410	<410	U
29	3,3'-Dichlorobenzidine	91-94-1	µg/kg	410	<410	U
30	2,4-Dichlorophenol	120-83-2	µg/kg	410	<410	U
31	Diethyl phthalate (DEP)	84-66-2	µg/kg	410	<410	U
32	Dimethyl phthalate (DMP)	131-11-3	µg/kg	410	<410	U
33	2,4-Dimethylphenol	105-67-9	µg/kg	410	<410	U
34	4,6-Dinitro-2-methylphenol	534-52-1	µg/kg	1000	<1000	U
35	2,4-Dinitrophenol	51-28-5	µg/kg	1000	<1000	U
36	2,4-Dinitrotoluene	121-14-2	µg/kg	410	<410	U
37	2,6-Dinitrotoluene	606-20-2	µg/kg	410	<410	U
38	Fluoranthene	206-44-0	µg/kg	410	<410	U
39	Fluorene	86-73-7	µg/kg	410	<410	U
40	Hexachlorobenzene	118-74-1	µg/kg	410	<410	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorobutadiene	87-68-3	µg/kg	410	< 410	U
42	Hexachlorocyclopentadiene	77-47-4	µg/kg	410	< 410	U
43	Hexachloroethane	67-72-1	µg/kg	410	< 410	U
44	Indeno(1,2,3-cd)pyrene	193-39-5	µg/kg	410	< 410	U
45	Isophorone	78-59-1	µg/kg	410	< 410	U
46	2-Methylnaphthalene	91-57-6	µg/kg	410	< 410	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/kg	410	< 410	U
48	4-Methylphenol (p-cresol)	106-44-5	µg/kg	410	< 410	U
49	Naphthalene	91-20-3	µg/kg	410	< 410	U
50	2-Nitroaniline	88-74-4	µg/kg	1000	< 1000	U
51	3-Nitroaniline	99-09-2	µg/kg	1000	< 1000	U
52	4-Nitroaniline	100-01-6	µg/kg	1000	< 1000	U
53	Nitrobenzene	98-95-3	µg/kg	410	< 410	U
54	2-Nitrophenol	88-75-5	µg/kg	410	< 410	U
55	4-Nitrophenol	100-02-7	µg/kg	1000	< 1000	U
56	N-Nitroso-di-n-propylamine	621-64-7	µg/kg	410	< 410	U
57	N-Nitrosodiphenylamine	86-30-6	µg/kg	410	< 410	U
58	Pentachlorophenol (PCP)	87-86-5	µg/kg	1000	< 1000	U
59	Phenanthrene	85-01-8	µg/kg	410	< 410	U
60	Phenol	108-95-2	µg/kg	410	< 410	U
61	Pyrene	129-00-0	µg/kg	410	< 410	U
62	1,2,4-Trichlorobenzene	120-82-1	µg/kg	410	< 410	U
63	2,4,5-Trichlorophenol	95-95-4	µg/kg	1000	< 1000	U
64	2,4,6-Trichlorophenol	88-06-2	µg/kg	410	< 410	U

**TIC (Tentative Identified Components): Not Found**

Surrogates		Control Limit, %	Surro. Rec.%
1	Nitrobenzene-d5	4165-60-0	23-120
2	2-Fluorobiphenyl	321-60-8	30-115
3	Terphenyl-d14	1718-51-0	18-137
4	Phenol-d5	4165-62-2	24-113
5	2-Fluorophenol	367-12-4	25-121
6	2,4,6-Tribromophenol	118-79-6	19-122
7	2-Chlorophenol-d4		20-130
8	1,2-Dichlorobenzene-d4	2199-69-1	20-130
# of out-of-control			0
Internal Standard		Control Limit, %	IS Rec.%
1	1,4-Dichlorobenzene-d4	3855-82-1	50-200
2	Naphthalene-d8	1146-65-2	50-200
3	Acenaphthene-d10	15067-26-2	50-200
4	Phenanthrene-d10	1517-22-2	50-200
5	Chrysene-d12	1719-03-5	50-200
6	Perylene-d12	1520-96-3	50-200
# of out-of-control			0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL

J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)

E - Exceed calibration range

B - A positive value was found in the method blank

D - Diluted

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**Applied P & Ch Laboratory**  
**SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET for Method CLP-SVOC**

Client Name:	Tetra Tech EM Inc.	Project No:	G0069-267A01	Collection Date:	02/12/1999
Project ID:	PO#992208	SDG Number:	991825	Collected by:	Lantz/Carlson
Sample ID:	<b>267AOCSW017</b>	Lab Sample ID:	99-1825-8	Received Date:	02/13/1999
Sample Type:	Field Sample	Sample Matrix	Water	Moisture %:	-
Anal. Method:	CLP-SVOC	Prep. Method:	3520	Instrument ID:	GC/MS: Z
Batch No:	99G1511	Prep. Date:	02/15/99	Anal. Date:	02/17/99
Data File Name:	1825-08	Prep. No:	1 of 1	Anal. Time:	14:44
Extract Vol.	1.0 mL	Sample Amount:	1000 mL	Dilution Factor:	1

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Acenaphthene	83-32-9	µg/L	10	<10	U
2	Acenaphthylene	208-96-8	µg/L	10	<10	U
3	Anthracene	120-12-7	µg/L	10	<10	U
4	Benz(a)anthracene	56-55-3	µg/L	10	<10	U
5	Benzo(a)pyrene	50-32-8	µg/L	10	<10	U
6	Benzo(b)fluoranthene	205-99-2	µg/L	10	<10	U
7	Benzo(g,h,i)perylene	191-24-2	µg/L	10	<10	U
8	Benzo(k)fluoranthene	207-08-9	µg/L	10	<10	U
9	Bis(2-chloroethoxy) methane	111-91-1	µg/L	10	<10	U
10	Bis(2-chloroethyl) ether	111-44-4	µg/L	10	<10	U
11	Bis(2-chloroisopropyl) ether	108-60-1	µg/L	10	<10	U
12	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	10	8	J
13	4-Bromophenyl phenyl ether	101-55-3	µg/L	10	<10	U
14	Butyl Benzyl Phthalate (BBP)	85-68-7	µg/L	10	<10	U
15	Carbazole	86-74-8	µg/L	10	<10	U
16	4-Chloro-3-methylphenol	59-50-7	µg/L	10	<10	U
17	4-Chloroaniline	106-47-8	µg/L	10	<10	U
18	2-Chloronaphthalene	91-58-7	µg/L	10	<10	U
19	2-Chlorophenol	95-57-8	µg/L	10	<10	U
20	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	10	<10	U
21	Chrysene	218-01-9	µg/L	10	<10	U
22	Di-n-butyl phthalate (DBP)	84-74-2	µg/L	10	<10	U
23	Di-n-octyl phthalate (DOP)	117-84-0	µg/L	10	<10	U
24	Dibenz(a,h)anthracene	53-70-3	µg/L	10	<10	U
25	Dibenzofuran	132-64-9	µg/L	10	<10	U
26	1,2-Dichlorobenzene	95-50-1	µg/L	10	<10	U
27	1,3-Dichlorobenzene	541-73-1	µg/L	10	<10	U
28	1,4-Dichlorobenzene	106-46-7	µg/L	10	<10	U
29	3,3'-Dichlorobenzidine	91-94-1	µg/L	10	<10	U
30	2,4-Dichlorophenol	120-83-2	µg/L	10	<10	U
31	Diethyl phthalate (DEP)	84-66-2	µg/L	10	<10	U
32	Dimethyl phthalate (DMP)	131-11-3	µg/L	10	<10	U
33	2,4-Dimethylphenol	105-67-9	µg/L	10	<10	U
34	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	25	<25	U
35	2,4-Dinitrophenol	51-28-5	µg/L	25	<25	U
36	2,4-Dinitrotoluene	121-14-2	µg/L	10	<10	U
37	2,6-Dinitrotoluene	606-20-2	µg/L	10	<10	U
38	Fluoranthene	206-44-0	µg/L	10	<10	U
39	Fluorene	86-73-7	µg/L	10	<10	U
40	Hexachlorobenzene	118-74-1	µg/L	10	<10	U

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#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	Hexachlorobutadiene	87-68-3	µg/L	10	<10	U
42	Hexachlorocyclopentadiene	77-47-4	µg/L	10	<10	U
43	Hexachloroethane	67-72-1	µg/L	10	<10	U
44	Indeno(1,2,3-cd)pyrene	193-39-5	µg/L	10	<10	U
45	Isophorone	78-59-1	µg/L	10	<10	U
46	2-Methylnaphthalene	91-57-6	µg/L	10	<10	U
47	2-Methylphenol (o-Cresol)	95-48-7	µg/L	10	<10	U
48	4-Methylphenol (p-cresol)	106-44-5	µg/L	10	<10	U
49	Naphthalene	91-20-3	µg/L	10	<10	U
50	2-Nitroaniline	88-74-4	µg/L	25	<25	U
51	3-Nitroaniline	99-09-2	µg/L	25	<25	U
52	4-Nitroaniline	100-01-6	µg/L	25	<25	U
53	Nitrobenzene	98-95-3	µg/L	10	<10	U
54	2-Nitrophenol	88-75-5	µg/L	10	<10	U
55	4-Nitrophenol	100-02-7	µg/L	25	<25	U
56	N-Nitroso-di-n-propylamine	621-64-7	µg/L	10	<10	U
57	N-Nitrosodiphenylamine	86-30-6	µg/L	10	<10	U
58	Pentachlorophenol (PCP)	87-86-5	µg/L	25	<25	U
59	Phanthrene	85-01-8	µg/L	10	<10	U
60	Phenol	108-95-2	µg/L	10	<10	U
61	Pyrene	129-00-0	µg/L	10	<10	U
62	1,2,4-Trichlorobenzene	120-82-1	µg/L	10	<10	U
63	2,4,5-Trichlorophenol	95-95-4	µg/L	25	<25	U
64	2,4,6-Trichlorophenol	88-06-2	µg/L	10	<10	U
<b>TIC (Tentative Identified Components)</b>				<b>RT (min)</b>		
1	o-Xylene	95-47-6	µg/L	6.50	4	JN
<b>Surrogates</b>				<b>Control Limit, %</b>	<b>Surro. Rec.%</b>	
1	Nitrobenzene-d5	4165-60-0		35-114	69	
2	2-Fluorobiphenyl	321-60-8		43-116	66	
3	Terphenyl-d14	1718-51-0		33-141	82	
4	Phenol-d5	4165-62-2		10-110	48	
5	2-Fluorophenol	367-12-4		21-110	33	
6	2,4,6-Tribromophenol	118-79-6		10-123	68	
7	2-Chlorophenol-d4			33-110	67	
8	t,2-Dichlorobenzene-d4	2199-69-1		16-110	63	
# of out-of-control					0	
<b>Internal Standard</b>				<b>Control Limit, %</b>	<b>IS Rec.%</b>	
1	1,4-Dichlorobenzene-d4	3855-82-1		50-200	127	
2	Naphthalene-d8	1146-65-2		50-200	126	
3	Acenaphthene-d10	15067-26-2		50-200	132	
4	Phanthrene-d10	1517-23-2		50-200	132	
5	Chrysene-d12	1719-03-5		50-200	130	
6	Perylene-d12	1520-96-3		50-200	134	
# of out-of control					0	

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL

I - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)

E - Exceed calibration range

B - A positive value was found in the method blank

D - Diluted

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Applied P & Ch Laboratory

13760 Magnolia Ave. Chino CA 91710

Tel: (909) 590-1828 Fax: (909) 590-1498

# APCL Analytical Report

Component Analyzed	Method	Unit	CRDL (PQL)	Analysis Result
				267AOCSB018 99-02325-1
<b>CLP: SEMI-VOC BY GC/MS</b>				
Dilution Factor				1
ACENAPHTHENE	CLP-SVOC	µg/kg	330	< 400
ACENAPHTHYLENE	CLP-SVOC	µg/kg	330	< 400
ANTHRACENE	CLP-SVOC	µg/kg	330	< 400
BENZ(A)ANTHRACENE	CLP-SVOC	µg/kg	330	< 400
BENZO(A)PYRENE	CLP-SVOC	µg/kg	330	< 400
BENZO(B)FLUORANTHENE	CLP-SVOC	µg/kg	330	< 400
BENZO(G,H,I)PERYLENE	CLP-SVOC	µg/kg	330	< 400
BENZO(K)FLUORANTHENE	CLP-SVOC	µg/kg	330	< 400
BIS(2-CHLOROETHOXY) METHANE	CLP-SVOC	µg/kg	330	< 400
BIS(2-CHLOROETHYL) ETHER	CLP-SVOC	µg/kg	330	< 400
BIS(2-CHLOROISOPROPYL) ETHER	CLP-SVOC	µg/kg	330	< 400
BIS(2-ETHYLHEXYL) PHTHALATE	CLP-SVOC	µg/kg	330	< 400
4-BROMOPHENYL PHENYL ETHER	CLP-SVOC	µg/kg	330	< 400
BUTYL BENZYL PHTHALATE (BBP)	CLP-SVOC	µg/kg	330	< 400
CARBAZOLE	CLP-SVOC	µg/kg	330	< 400
4-CHLORO-3-METHYLPHENOL	CLP-SVOC	µg/kg	330	< 400
4-CHLOROANILINE	CLP-SVOC	µg/kg	330	< 400
2-CHLORONAPHTHALENE	CLP-SVOC	µg/kg	330	< 400
2-CHLOROPHENOL	CLP-SVOC	µg/kg	330	< 400
4-CHLOROPHENYL PHENYL ETHER	CLP-SVOC	µg/kg	330	< 400
CHRYSENE	CLP-SVOC	µg/kg	330	< 400
DI-N-BUTYL PHTHALATE (DBP)	CLP-SVOC	µg/kg	330	< 400
DI-N-OCTYL PHTHALATE (DOP)	CLP-SVOC	µg/kg	330	< 400
DIBENZ(A,H)ANTHRACENE	CLP-SVOC	µg/kg	330	< 400
DIBENZOFURAN	CLP-SVOC	µg/kg	330	< 400
1,2-DICHLOROBENZENE	CLP-SVOC	µg/kg	330	< 400
1,3-DICHLOROBENZENE	CLP-SVOC	µg/kg	330	< 400
1,4-DICHLOROBENZENE	CLP-SVOC	µg/kg	330	< 400
3,3'-DICHLOROBENZIDINE	CLP-SVOC	µg/kg	330	< 400
2,4-DICHLOROPHENOL	CLP-SVOC	µg/kg	330	< 400
DIETHYL PHTHALATE (DEP)	CLP-SVOC	µg/kg	330	< 400
DIMETHYL PHTHALATE (DMP)	CLP-SVOC	µg/kg	330	< 400
2,4-DIMETHYLPHENOL	CLP-SVOC	µg/kg	330	< 400
4,6-DINITRO-2-METHYLPHENOL	CLP-SVOC	µg/kg	830	< 1000
2,4-DINITROPHENOL	CLP-SVOC	µg/kg	830	< 1000
2,4-DINITROTOLUENE	CLP-SVOC	µg/kg	330	< 400
2,6-DINITROTOLUENE	CLP-SVOC	µg/kg	330	< 400
FLUORANTHENE	CLP-SVOC	µg/kg	330	< 400
FLUORENE	CLP-SVOC	µg/kg	330	< 400

Applied P & Ch Laboratory

13760 Magnolia Ave. Chino CA 91710

Tel: (909) 590-1828 Fax: (909) 590-1498

**APCL Analytical Report**

Component Analyzed	Method	Unit	CRDL (PQL)	Analysis Result	
				267AOCSB018	99-02325-1
HEXACHLOROBENZENE	CLP-SVOC	µg/kg	330	< 400	
HEXACHLOROBUTADIENE	CLP-SVOC	µg/kg	330	< 400	
HEXACHLOROCYCLOPENTADIENE	CLP-SVOC	µg/kg	330	< 400	
HEXACHLOROETHANE	CLP-SVOC	µg/kg	330	< 400	
INDENO(1,2,3-CD)PYRENE	CLP-SVOC	µg/kg	330	< 400	
ISOPHORONE	CLP-SVOC	µg/kg	330	< 400	
2-METHYLNAPHTHALENE	CLP-SVOC	µg/kg	330	< 400	
2-METHYLPHENOL (O-CRESOL)	CLP-SVOC	µg/kg	330	< 400	
3/4-METHYLPHENOL (M/P-CRESOL)	CLP-SVOC	µg/kg	330	< 400	
NAPHTHALENE	CLP-SVOC	µg/kg	330	< 400	
2-NITROANILINE	CLP-SVOC	µg/kg	830	< 1000	
3-NITROANILINE	CLP-SVOC	µg/kg	830	< 1000	
4-NITROANILINE	CLP-SVOC	µg/kg	830	< 1000	
NITROBENZENE	CLP-SVOC	µg/kg	330	< 400	
2-NITROPHENOL	CLP-SVOC	µg/kg	330	< 400	
4-NITROPHENOL	CLP-SVOC	µg/kg	830	< 1000	
N-NITROSO-DI-N-PROPYLAMINE	CLP-SVOC	µg/kg	330	< 400	
N-NITROSODIPHENYLAMINE	CLP-SVOC	µg/kg	330	< 400	
PENTACHLOROPHENOL (PCP)	CLP-SVOC	µg/kg	830	< 1000	
PHENANTHRENE	CLP-SVOC	µg/kg	330	< 400	
PHENOL	CLP-SVOC	µg/kg	330	< 400	
PYRENE	CLP-SVOC	µg/kg	330	< 400	
1,2,4-TRICHLOROBENZENE	CLP-SVOC	µg/kg	330	< 400	
2,4,5-TRICHLOROPHENOL	CLP-SVOC	µg/kg	830	< 1000	
2,4,6-TRICHLOROPHENOL	CLP-SVOC	µg/kg	330	< 400	
<b>CLP: ORGANOCHLORINE PESTICIDES &amp; PCB</b>					1
Dilution Factor					
ALDRIN	CLP-Pest	µg/kg	1.7	< 2.1	
BETA-BHC	CLP-Pest	µg/kg	1.7	< 2.1	
ALPHA-BHC	CLP-Pest	µg/kg	1.7	< 2.1	
DELTA-BHC	CLP-Pest	µg/kg	1.7	< 2.1	
GAMMA-BHC (LINDANE)	CLP-Pest	µg/kg	1.7	< 2.1	
ALPHA-CHLORDANE	CLP-Pest	µg/kg	1.7	< 2.1	
GAMMA-CHLORDANE	CLP-Pest	µg/kg	1.7	< 2.1	
4,4'-DDD	CLP-Pest	µg/kg	3.3	< 4.0	
4,4'-DDE	CLP-Pest	µg/kg	3.3	< 4.0	
4,4'-DDT	CLP-Pest	µg/kg	3.3	< 4.0	
DIELDRIN	CLP-Pest	µg/kg	3.3	< 4.0	
ENDOSULFAN I	CLP-Pest	µg/kg	1.7	< 2.1	
ENDOSULFAN II	CLP-Pest	µg/kg	3.3	< 4.0	
ENDOSULFAN SULFATE	CLP-Pest	µg/kg	3.3	< 4.0	

# **CLP-PESTICIDES/PCB**

**56798**

Applied P & Ch Laboratory  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET for Method CLP-Pest

Client Name: Tetra Tech EM Inc. Project No: G0069-267A0 Collection Date: 02/10/1999  
 Project ID: NWS Concord SDG Number: 991776 Collected by: RL/CF  
 Sample ID: 267A0CSB001 Lab Sample ID: 99-1776-1 Received Date: 02/11/1999  
 Sample Type: Field Sample Sample Matrix: Soil Moisture %: 9.9  
 Anal. Method: CLP-Pest Prep. Method: 3550 Instrument ID: GC: S  
 Batch No: 99G1481 Prep. Date: 02/12/99 Anal. Date: 02/12/99  
 Data File Name: 1776.001 Prep. No: 1 of 1 Anal. Time: 20:28  
 Extract Vol.: 4.0 mL Sample Amount: 30.0 g Dilution Factor: 5

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aldrin	309-00-2	µg/kg	9.4	<9.4	U
2	beta-BHC	319-85-7	µg/kg	9.4	<9.4	U
3	alpha-BHC	319-84-6	µg/kg	9.4	<9.4	U
4	delta-BHC	319-86-8	µg/kg	9.4	<9.4	U
5	gamma-BHC (Lindane)	58-89-9	µg/kg	9.4	<9.4	U
6	alpha-Chlordane	5103-71-9	µg/kg	9.4	<9.4	U
7	gamma-Chlordane	5103-74-2	µg/kg	9.4	<9.4	U
8	4,4'-DDD	72-54-8	µg/kg	18	<18	U
9	4,4'-DDE	72-55-9	µg/kg	18	<18	U
10	4,4'-DDT	50-29-3	µg/kg	18	<18	U
11	Dieldrin	60-57-1	µg/kg	18	<18	U
12	Endosulfan I	959-98-8	µg/kg	9.4	<9.4	U
13	Endosulfan II	33213-65-9	µg/kg	18	<18	U
14	Endosulfan sulfate	1031-07-8	µg/kg	18	<18	U
15	Endrin	72-20-8	µg/kg	18	<18	U
16	Endrin aldehyde	7421-93-4	µg/kg	18	<18	U
17	Endrin ketone	53494-70-5	µg/kg	18	<18	U
18	Heptachlor	76-44-8	µg/kg	1.7	<1.7	U
19	Heptachlor epoxide	1024-57-3	µg/kg	1.7	<1.7	U
20	Methoxychlor	72-43-5	µg/kg	94	<94	U
21	Toxaphene	8001-35-2	µg/kg	470	<470	U
22	Aroclor-1016	12674-11-2	µg/kg	94	<94 (a)	U
23	Aroclor-1221	11104-28-2	µg/kg	89	<89	U
24	Aroclor-1232	11141-16-5	µg/kg	89	<89	U
25	Aroclor-1242	53469-21-9	µg/kg	89	<89	U
26	Aroclor-1248	12672-29-6	µg/kg	89	<89	U
27	Aroclor-1254	11097-69-1	µg/kg	89	<89	U
28	Aroclor-1260	11096-82-5	µg/kg	89	<89	U
<b>Surrogates</b>				<b>Control Limit, %</b>	<b>Surro. Rec.%</b>	
1	2,4,5,6-Tetrachloro-m-xylene	877-09-8		30-150	55	
2	Decachlorobiphenyl (DCB)	2051-24-3		30-150	78	
# of out-of-control					0	

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

(a) MDL reported.

Qualifier: U - Not Detected or less than MDL

L - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)

E - Exceed calibration range

B - A positive value was found in the method blank

D - Diluted

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Applied P & Ch Laboratory  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET for Method CLP-Pest

Client Name:	Tetra Tech EM Inc.	Project No:	G0069-267A0	Collection Date:	02/10/1999
Project ID:	NWS Concord	SDG Number:	991776	Collected by:	RL/CF
Sample ID:	<b>267A0CSB002</b>	Lab Sample ID:	99-1776-2	Received Date:	02/11/1999
Sample Type:	Field Sample	Sample Matrix	Soil	Moisture %:	10.8
Anal. Method:	CLP-Pest	Prep. Method:	3550	Instrument ID:	GC: S
Batch No:	99G1481	Prep. Date:	02/12/99	Anal. Date:	02/12/99
Data File Name:	1776.002	Prep. No:	1 of 1	Anal. Time:	21:18
Extract Vol.	4.0 mL	Sample Amount:	30.0 g	Dilution Factor:	1

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aldrin	309-00-2	µg/kg	1.9	<1.9	U
2	beta-BHC	319-85-7	µg/kg	1.9	<1.9	U
3	alpha-BHC	319-84-6	µg/kg	1.9	<1.9	U
4	delta-BHC	319-86-8	µg/kg	1.9	<1.9	U
5	gamma-BHC (Lindane)	58-89-9	µg/kg	1.9	<1.9	U
6	alpha-Chlordane	5103-71-9	µg/kg	1.9	<1.9	U
7	gamma-Chlordane	5103-74-2	µg/kg	1.9	<1.9	U
8	4,4'-DDD	72-54-8	µg/kg	3.7	<3.7	U
9	4,4'-DDE	72-55-9	µg/kg	3.7	<3.7	U
10	4,4'-DDT	50-29-3	µg/kg	3.7	<3.7	U
11	Dieldrin	60-57-1	µg/kg	3.7	<3.7	U
12	Endosulfan I	959-98-8	µg/kg	1.9	<1.9	U
13	Endosulfan II	33213-65-9	µg/kg	3.7	<3.7	U
14	Endosulfan sulfate	1031-07-8	µg/kg	3.7	<3.7	U
15	Endrin	72-20-8	µg/kg	3.7	<3.7	U
16	Endrin aldehyde	7421-93-4	µg/kg	3.7	<3.7	U
17	Endrin ketone	53494-70-5	µg/kg	3.7	<3.7	U
18	Heptachlor	76-44-8	µg/kg	0.34	<0.34	U
19	Heptachlor epoxide	1024-57-3	µg/kg	0.34	<0.34	U
20	Methoxychlor	72-43-5	µg/kg	19	<19	U
21	Toxaphene	8001-35-2	µg/kg	95	<95	U
22	Aroclor-1016	12674-11-2	µg/kg	19	<19	U
23	Aroclor-1221	11104-28-2	µg/kg	18	<18	U
24	Aroclor-1232	11141-16-5	µg/kg	18	<18	U
25	Aroclor-1242	53469-21-9	µg/kg	18	<18	U
26	Aroclor-1248	12672-29-6	µg/kg	18	<18	U
27	Aroclor-1254	11097-69-1	µg/kg	18	<18	U
28	Aroclor-1260	11096-82-5	µg/kg	18	<18	U
<b>Surrogates</b>				<b>Control Limit, %</b>	<b>Surro. Rec.%</b>	
1	2,4,5,6-Tetrachloro-m-xylene	877-09-8		30-150	63	
2	Decachlorobiphenyl (DCB)	2051-24-3		30-150	54	
# of out-of-control					0	

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL

E - Exceed calibration range

J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)

B - A positive value was found in the method blank

D - Diluted

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Applied P & Ch Laboratory  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET for Method CLP-Pest

Client Name: Tetra Tech EM Inc. Project No: G0069-267A0 Collection Date: 02/10/1999  
 Project ID: NWS Concord SDG Number: 991776 Collected by: RL/CF  
 Lab Sample ID: 99-1776-3 Received Date: 02/11/1999  
 Sample ID: 267A0CSB003 Sample Matrix: Soil Moisture %: 14.9  
 Sample Type: Field Sample Prep. Method: 3550 Instrument ID: GC: S  
 Anal. Method: CLP-Pest Prep. Date: 02/12/99 Anal. Date: 02/12/99  
 Batch No: 99G1481 Prep. No: 1 of 1 Anal. Time: 22:08  
 Data File Name: 1776.003 Sample Amount: 30.0 g Dilution Factor: 1  
 Extract Vol. 4.0 mL

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aldrin	309-00-2	µg/kg	2.0	<2.0	U
2	beta-BHC	319-85-7	µg/kg	2.0	<2.0	U
3	alpha-BHC	319-84-6	µg/kg	2.0	<2.0	U
4	delta-BHC	319-86-8	µg/kg	2.0	<2.0	U
5	gamma-BHC (Lindane)	58-89-9	µg/kg	2.0	<2.0	U
6	alpha-Chlordane	5103-71-9	µg/kg	2.0	<2.0	U
7	gamma-Chlordane	5103-74-2	µg/kg	2.0	<2.0	U
8	4,4'-DDD	72-54-8	µg/kg	3.9	<3.9	U
9	4,4'-DDE	72-55-9	µg/kg	3.9	<3.9	U
10	4,4'-DDT	50-29-3	µg/kg	3.9	<3.9	U
11	Dicofol	60-57-1	µg/kg	3.9	<3.9	U
12	Endosulfan I	959-98-8	µg/kg	2.0	<2.0	U
13	Endosulfan II	33213-65-9	µg/kg	3.9	<3.9	U
14	Endosulfan sulfate	1031-07-8	µg/kg	3.9	<3.9	U
15	Endrin	72-20-8	µg/kg	3.9	<3.9	U
16	Endrin aldehyde	7421-93-4	µg/kg	3.9	<3.9	U
17	Endrin ketone	53494-70-5	µg/kg	3.9	<3.9	U
18	Heptachlor	76-44-8	µg/kg	0.35	<0.35	U
19	Heptachlor epoxide	1024-57-3	µg/kg	0.35	<0.35	U
20	Methoxychlor	72-43-5	µg/kg	20	<20	U
21	Toxaphene	8001-35-2	µg/kg	100	<100	U
22	Aroclor-1016	12674-11-2	µg/kg	20	<20	U
23	Aroclor-1221	11104-28-2	µg/kg	19	<19	U
24	Aroclor-1232	11141-16-5	µg/kg	19	<19	U
25	Aroclor-1242	53469-21-9	µg/kg	19	<19	U
26	Aroclor-1248	12672-29-6	µg/kg	19	<19	U
27	Aroclor-1254	11097-69-1	µg/kg	19	<19	U
28	Aroclor-1260	11096-82-5	µg/kg	19	<19	U
<b>Surrogates</b>				Control Limit, %	Surro. Rec.%	
1	2,4,5,6-Tetrachloro-m-xylene	877-09-8		30-150	64	
2	Decachlorobiphenyl (DCB)	2051-24-3		30-150	58	
# of out-of-control					0	

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL

E - Exceed calibration range

J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)

B - A positive value was found in the method blank  
 D - Diluted

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Applied P & Ch Laboratory  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET for Method CLP-Pest

Client Name: Tetra Tech EM Inc. Project No: G0069-267A0 Collection Date: 02/10/1999  
 Project ID: NWS Concord SDG Number: 991776 Collected by: RL/CF  
 Sample ID: 267A0CSB006 Lab Sample ID: 99-1776-6 Received Date: 02/11/1999  
 Sample Type: Field Sample Sample Matrix: Soil Moisture %: 37.8  
 Anal. Method: CLP-Pest Prep. Method: 3550 Instrument ID: GC: S  
 Batch No: 99G1481 Prep. Date: 02/12/99 Anal. Date: 02/12/99  
 Data File Name: 1776.006 Prep. No: 1 of 1 Anal. Time: 22:33  
 Extract Vol. 4.0 mL Sample Amount: 30.0 g Dilution Factor: 1

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aldrin	309-00-2	µg/kg	2.7	<2.7	U
2	beta-BHC	319-85-7	µg/kg	2.7	<2.7	U
3	alpha-BHC	319-84-6	µg/kg	2.7	<2.7	U
4	delta-BHC	319-86-8	µg/kg	2.7	<2.7	U
5	gamma-BHC (Lindane)	58-89-9	µg/kg	2.7	<2.7	U
6	alpha-Chlordane	5103-71-9	µg/kg	2.7	<2.7	U
7	gamma-Chlordane	5103-74-2	µg/kg	2.7	<2.7	U
8	4,4'-DDD	72-54-8	µg/kg	5.3	<5.3	U
9	4,4'-DDE	72-55-9	µg/kg	5.3	<5.3	U
10	4,4'-DDT	50-29-3	µg/kg	5.3	<5.3	U
11	Dieldrin	60-57-1	µg/kg	5.3	<5.3	U
12	Endosulfan I	959-98-8	µg/kg	2.7	<2.7	U
13	Endosulfan II	33213-65-9	µg/kg	5.3	<5.3	U
14	Endosulfan sulfate	1031-07-8	µg/kg	5.3	<5.3	U
15	Endrin	72-20-8	µg/kg	5.3	<5.3	U
16	Endrin aldehyde	7421-93-4	µg/kg	5.3	<5.3	U
17	Endrin ketone	53494-70-5	µg/kg	5.3	<5.3	U
18	Heptachlor	76-44-8	µg/kg	0.48	<0.48	U
19	Heptachlor epoxide	1024-57-3	µg/kg	0.48	<0.48	U
20	Methoxychlor	72-43-5	µg/kg	27	<27	U
21	Toxaphene	8001-35-2	µg/kg	140	<140	U
22	Aroclor-1016	12674-11-2	µg/kg	27	<27	U
23	Aroclor-1221	11104-28-2	µg/kg	26	<26	U
24	Aroclor-1232	11141-16-5	µg/kg	26	<26	U
25	Aroclor-1242	53469-21-9	µg/kg	26	<26	U
26	Aroclor-1248	12672-29-6	µg/kg	26	<26	U
27	Aroclor-1254	11097-69-1	µg/kg	26	<26	U
28	Aroclor-1260	11096-82-5	µg/kg	26	<26	U

Surrogates	Control Limit, %	Surro. Rec.%
1 2,4,5,6-Tetrachloro-m-xylene	30-150	62
2 Decachlorobiphenyl (DCB)	30-150	60
# of out-of-control		0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL

E - Exceed calibration range

J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)

B - A positive value was found in the method blank  
D - Diluted

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Applied P & Ch Laboratory  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET for Method CLP-Pest

Client Name: Tetra Tech EM Inc. Project No: G0069-267A0 Collection Date: 02/10/1999  
 Project ID: NWS Concord SDG Number: 991776 Collected by: RL/CF  
 Sample ID: 267A0CSB007 Lab Sample ID: 99-1776-7 Received Date: 02/11/1999  
 Sample Type: Field Sample Sample Matrix: Soil Moisture %: 14.5  
 Anal. Method: CLP-Pest Prep. Method: 3550 Instrument ID: GC: S  
 Batch No: 99G1481 Prep. Date: 02/12/99 Anal. Date: 02/12/99  
 Data File Name: 1776.007 Prep. No: 1 of 1 Anal. Time: 22:58  
 Extract Vol. 4.0 mL Sample Amount: 30.0 g Dilution Factor: 1

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aldrin	309-00-2	µg/kg	2.0	<2.0	U
2	beta-BHC	319-85-7	µg/kg	2.0	<2.0	U
3	alpha-BHC	319-84-6	µg/kg	2.0	<2.0	U
4	delta-BHC	319-86-8	µg/kg	2.0	<2.0	U
5	gamma-BHC (Lindane)	58-89-9	µg/kg	2.0	<2.0	U
6	alpha-Chlordane	5103-71-9	µg/kg	2.0	<2.0	U
7	gamma-Chlordane	5103-74-2	µg/kg	2.0	<2.0	U
8	4,4'-DDD	72-54-8	µg/kg	3.9	<3.9	U
9	4,4'-DDE	72-55-9	µg/kg	3.9	<3.9	U
10	4,4'-DDT	50-29-3	µg/kg	3.9	<3.9	U
11	Dieldrin	60-57-1	µg/kg	3.9	3.2	J
12	Endosulfan I	959-98-8	µg/kg	2.0	<2.0	U
13	Endosulfan II	33213-65-9	µg/kg	3.9	<3.9	U
14	Endosulfan sulfate	1031-07-8	µg/kg	3.9	<3.9	U
15	Endrin	72-20-8	µg/kg	3.9	<3.9	U
16	Endrin aldehyde	7421-93-4	µg/kg	3.9	<3.9	U
17	Endrin ketone	53494-70-5	µg/kg	3.9	<3.9	U
18	Heptachlor	76-44-8	µg/kg	0.35	<0.35	U
19	Heptachlor epoxide	1024-57-3	µg/kg	0.35	<0.35	U
20	Methoxychlor	72-43-5	µg/kg	20	<20	U
21	Toxaphene	8001-35-2	µg/kg	99	<99	U
22	Aroclor-1016	12674-11-2	µg/kg	20	<20	U
23	Aroclor-1221	11104-28-2	µg/kg	19	<19	U
24	Aroclor-1232	11141-16-5	µg/kg	19	<19	U
25	Aroclor-1242	53469-21-9	µg/kg	19	<19	U
26	Aroclor-1248	12672-29-6	µg/kg	19	<19	U
27	Aroclor-1254	11097-69-1	µg/kg	19	<19	U
28	Aroclor-1260	11096-82-5	µg/kg	19	<19	U
<b>Surrogates</b>				Control Limit, %	Surro. Rec.%	
1	2,4,5,6-Tetrachloro-m-xylene	877-09-8		30-150	59	
2	Decachlorobiphenyl (DCB)	2051-24-3		30-150	56	
# of out-of-control					0	

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL

E - Exceed calibration range

J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)

B - A positive value was found in the method blank  
D - Diluted

49340

Applied P & Ch Laboratory  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET for Method CLP-Pest

Client Name: Tetra Tech EM Inc. Project No: G0069-267A0 Collection Date: 02/10/1999  
 Project ID: NWS Concord SDG Number: 991776 Collected by: RL/CF  
 Lab Sample ID: 99-1776-8 Received Date: 02/11/1999  
 Sample ID: 267A0CSB008 Sample Matrix: Soil Moisture %: 17.4  
 Sample Type: Field Sample Prep. Method: 3550 Instrument ID: GC: S  
 Anal. Method: CLP-Pest Prep. Date: 02/12/99 Anal. Date: 02/12/99  
 Batch No: 99G1481 Prep. No: 1 of 1 Anal. Time: 23:23  
 Data File Name: 1776.008 Sample Amount: 30.0 g Dilution Factor: 1  
 Extract Vol. 4.0 mL

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aldrin	309-00-2	µg/kg	2.1	<2.1	U
2	beta-BHC	319-85-7	µg/kg	2.1	<2.1	U
3	alpha-BHC	319-84-6	µg/kg	2.1	<2.1	U
4	delta-BHC	319-86-8	µg/kg	2.1	<2.1	U
5	gamma-BHC (Lindane)	58-89-9	µg/kg	2.1	<2.1	U
6	alpha-Chlordane	5103-71-9	µg/kg	2.1	<2.1	U
7	gamma-Chlordane	5103-74-2	µg/kg	2.1	<2.1	U
8	4,4'-DDD	72-54-8	µg/kg	4.0	<4.0	U
9	4,4'-DDE	72-55-9	µg/kg	4.0	<4.0	U
10	4,4'-DDT	50-29-3	µg/kg	4.0	<4.0	U
11	Dieldrin	60-57-1	µg/kg	4.0	<4.0	U
12	Endosulfan I	959-98-8	µg/kg	2.1	<2.1	U
13	Endosulfan II	33213-65-9	µg/kg	4.0	<4.0	U
14	Endosulfan sulfate	1031-07-8	µg/kg	4.0	<4.0	U
15	Endrin	72-20-8	µg/kg	4.0	<4.0	U
16	Endrin aldehyde	7421-93-4	µg/kg	4.0	<4.0	U
17	Endrin ketone	53494-70-5	µg/kg	4.0	<4.0	U
18	Heptachlor	76-44-8	µg/kg	0.36	<0.36	U
19	Heptachlor epoxide	1024-57-3	µg/kg	0.36	<0.36	U
20	Methoxychlor	72-43-5	µg/kg	21	<21	U
21	Toxaphene	8001-35-2	µg/kg	100	<100	U
22	Aroclor-1016	12674-11-2	µg/kg	21	<21	U
23	Aroclor-1221	11104-28-2	µg/kg	19	<19	U
24	Aroclor-1232	11141-16-5	µg/kg	19	<19	U
25	Aroclor-1242	53469-21-9	µg/kg	19	<19	U
26	Aroclor-1248	12672-29-6	µg/kg	19	<19	U
27	Aroclor-1254	11097-69-1	µg/kg	19	<19	U
28	Aroclor-1260	11096-82-5	µg/kg	19	<19	U
Surrogates				Control Limit, %	Surro. Rec.%	
1	2,4,5,6-Tetrachloro-m-xylene	877-09-8		30-150	65	
2	Decachlorobiphenyl (DCB)	2051-24-3		30-150	66	
# of out-of-control					0	

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL

E - Exceed calibration range

J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)

B - A positive value was found in the method blank

D - Diluted

49841

**Applied P & Ch Laboratory**  
**SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET for Method CLP-Pest**

Client Name:	Tetra Tech EM Inc.	Project No:	G0069-267A01	Collection Date:	02/12/1999
Project ID:	PO#992208	SDG Number:	991825	Collected by:	Lantz/Carlson
Sample ID:	<b>267AOCSB013</b>	Lab Sample ID:	99-1825-4	Received Date:	02/13/1999
Sample Type:	Field Sample	Sample Matrix	Soil	Moisture %:	22.3
Anal. Method:	CLP-Pest	Prep. Method:	3550	Instrument ID:	GC: S
Batch No:	99G1524	Prep. Date:	02/16/99	Anal. Date:	02/16/99
Data File Name:	1825.004	Prep. No:	1 of 1	Anal. Time:	20:06
Extract Vol.	4.0 mL	Sample Amount:	30.0 g	Dilution Factor:	1

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aldrin	309-00-2	µg/kg	2.2	< 2.2	U
2	beta-BHC	319-85-7	µg/kg	2.2	< 2.2	U
3	alpha-BHC	319-84-6	µg/kg	2.2	< 2.2	U
4	delta-BHC	319-86-8	µg/kg	2.2	< 2.2	U
5	gamma-BHC (Lindane)	58-89-9	µg/kg	2.2	< 2.2	U
6	alpha-Chlordane	5103-71-9	µg/kg	2.2	< 2.2	U
7	gamma-Chlordane	5103-74-2	µg/kg	2.2	< 2.2	U
8	4,4'-DDD	72-54-8	µg/kg	4.2	< 4.2	U
9	4,4'-DDE	72-55-9	µg/kg	4.2	< 4.2	U
10	4,4'-DDT	50-29-3	µg/kg	4.2	< 4.2	U
11	Dieldrin	60-57-1	µg/kg	4.2	< 4.2	U
12	Endosulfan I	959-98-8	µg/kg	2.2	< 2.2	U
13	Endosulfan II	33213-65-9	µg/kg	4.2	< 4.2	U
14	Endosulfan sulfate	1031-07-8	µg/kg	4.2	< 4.2	U
15	Endrin	72-20-8	µg/kg	4.2	< 4.2	U
16	Endrin aldehyde	7421-93-4	µg/kg	4.2	< 4.2	U
17	Endrin ketone	53194-70-5	µg/kg	4.2	< 4.2	U
18	Heptachlor	76-44-8	µg/kg	2.2	< 2.2	U
19	Heptachlor epoxide	1024-57-3	µg/kg	2.2	< 2.2	U
20	Methoxychlor	72-43-5	µg/kg	22	< 22	U
21	Toxaphene	8001-35-2	µg/kg	220	< 220	U
22	Aroclor-1016 (PCB-1016)	12674-11-2	µg/kg	42	< 42	U
23	Aroclor-1221 (PCB-1221)	11104-28-2	µg/kg	86	< 86	U
24	Aroclor-1232 (PCB-1232)	11141-16-5	µg/kg	42	< 42	U
25	Aroclor-1242 (PCB-1242)	53469-21-9	µg/kg	42	< 42	U
26	Aroclor-1248 (PCB-1248)	12672-29-6	µg/kg	42	< 42	U
27	Aroclor-1254 (PCB-1254)	11097-69-1	µg/kg	42	< 42	U
28	Aroclor-1260 (PCB-1260)	11096-82-5	µg/kg	42	< 42	U
<b>Surrogates</b>				Control Limit, %	Surro. Rec.%	
1	2,4,5,6-Tetrachloro-m-xylene	877-09-8		30-150	59	
2	Decachlorobiphenyl (DCB)	2051-24-3		30-150	61	
# of out-of-control					0	

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL

E - Exceed calibration range

J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)

B - A positive value was found in the method blank

D - Diluted

56801

**Applied P & Ch Laboratory**  
**SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET for Method CLP-Pest**

Client Name:	Tetra Tech EM Inc.	Project No:	G0069-267A01	Collection Date:	02/12/1999
Project ID:	PO#992208	SDG Number:	991825	Collected by:	Lantz/Carlsol
Sample ID:	<b>267AOCSB014</b>	Lab Sample ID:	99-1825-5	Received Date:	02/13/1999
Sample Type:	Field Sample	Sample Matrix	Soil	Moisture %:	36.4
Anal. Method:	CLP-Pest	Prep. Method:	3550	Instrument ID:	GC: S
Batch No:	99G1524	Prep. Date:	02/16/99	Anal. Date:	02/16/99
Data File Name:	1825.005	Prep. No:	1 of 1	Anal. Time:	20:31
Extract Vol.	4.0 mL	Sample Amount:	30.0 g	Dilution Factor:	1

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aldrin	309-00-2	µg/kg	2.7	<2.7	U
2	beta-BHC	319-85-7	µg/kg	2.7	<2.7	U
3	alpha-BHC	319-84-6	µg/kg	2.7	<2.7	U
4	delta-BHC	319-86-8	µg/kg	2.7	<2.7	U
5	gamma-BHC (Lindane)	58-89-9	µg/kg	2.7	<2.7	U
6	alpha-Chlordane	5103-71-9	µg/kg	2.7	<2.7	U
7	gamma-Chlordane	5103-74-2	µg/kg	2.7	<2.7	U
8	4,4'-DDD	72-54-8	µg/kg	5.2	<5.2	U
9	4,4'-DDE	72-55-9	µg/kg	5.2	<5.2	U
10	4,4'-DDT	50-29-3	µg/kg	5.2	<5.2	U
11	Dieldrin	60-57-1	µg/kg	5.2	<5.2	U
12	Endosulfan I	959-98-8	µg/kg	2.7	<2.7	U
13	Endosulfan II	33213-65-9	µg/kg	5.2	<5.2	U
14	Endosulfan sulfate	1031-07-8	µg/kg	5.2	<5.2	U
15	Endrin	72-20-8	µg/kg	5.2	<5.2	U
16	Endrin aldehyde	7421-93-4	µg/kg	5.2	<5.2	U
17	Endrin ketone	53494-70-5	µg/kg	5.2	<5.2	U
18	Heptachlor	76-44-8	µg/kg	2.7	<2.7	U
19	Heptachlor epoxide	1024-57-3	µg/kg	2.7	<2.7	U
20	Methoxychlor	72-43-5	µg/kg	27	<27	U
21	Toxaphene	8001-35-2	µg/kg	270	<270	U
22	Aroclor-1016 (PCB-1016)	12674-11-2	µg/kg	52	<52	U
23	Aroclor-1221 (PCB-1221)	11104-28-2	µg/kg	110	<110	U
24	Aroclor-1232 (PCB-1232)	11141-16-5	µg/kg	52	<52	U
25	Aroclor-1242 (PCB-1242)	53469-21-9	µg/kg	52	<52	U
26	Aroclor-1248 (PCB-1248)	12672-29-6	µg/kg	52	<52	U
27	Aroclor-1254 (PCB-1254)	11097-69-1	µg/kg	52	<52	U
28	Aroclor-1260 (PCB-1260)	11096-82-5	µg/kg	52	<52	U

Surrogates		Control Limit, %	Surro. Rec.%
1	2,4,5,6-Tetrachloro-m-xylene	30-150	56
2	Decachlorobiphenyl (DCB)	30-150	58
# of out-of-control			0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL

J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)

E - Exceed calibration range

B - A positive value was found in the method blank

D - Diluted

56802

**Applied P & Ch Laboratory**  
**SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET for Method CLP-Pest**

Client Name:	Tetra Tech EM Inc.	Project No:	G0069-267A01	Collection Date:	02/12/1999
Project ID:	PO#992208	SDG Number:	991825	Collected by:	Lantz/Carlson
Sample ID:	<b>267AOCSW017</b>	Lab Sample ID:	99-1825-8	Received Date:	02/13/1999
Sample Type:	Field Sample	Sample Matrix	Water	Moisture %:	-
Anal. Method:	CLP-Pest	Prep. Method:	3510	Instrument ID:	GC: S
Batch No:	99G1521	Prep. Date:	02/16/99	Anal. Date:	02/16/99
Data File Name:	1825.008	Prep. No:	1 of 1	Anal. Time:	16:47
Extract Vol.	1.0 mL	Sample Amount:	1000 mL	Dilution Factor:	1

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	Aldrin	309-00-2	µg/L	0.050	<0.050	U
2	beta-BHC	319-85-7	µg/L	0.050	<0.050	U
3	alpha-BHC	319-84-6	µg/L	0.050	<0.050	U
4	delta-BHC	319-86-8	µg/L	0.050	<0.050	U
5	gamma-BHC (Lindane)	58-89-9	µg/L	0.050	<0.050	U
6	alpha-Chlordane	5103-71-9	µg/L	0.050	<0.050	U
7	gamma-Chlordane	5103-74-2	µg/L	0.050	<0.050	U
8	4,4'-DDD	72-54-8	µg/L	0.10	<0.10	U
9	4,4'-DDE	72-55-9	µg/L	0.10	<0.10	U
10	4,4'-DDT	50-29-3	µg/L	0.10	<0.10	U
11	Dieldrin	60-57-1	µg/L	0.10	<0.10	U
12	Endosulfan I	959-98-8	µg/L	0.050	<0.050	U
13	Endosulfan II	33213-65-9	µg/L	0.10	<0.10	U
14	Endosulfan sulfate	1031-07-8	µg/L	0.10	<0.10	U
15	Endrin	72-20-8	µg/L	0.10	<0.10	U
16	Endrin aldehyde	7421-93-4	µg/L	0.10	<0.10	U
17	Endrin ketone	53494-70-5	µg/L	0.10	<0.10	U
18	Heptachlor	76-44-8	µg/L	0.050	<0.050	U
19	Heptachlor epoxide	1024-57-3	µg/L	0.050	<0.050	U
20	Methoxychlor	72-43-5	µg/L	0.50	<0.50	U
21	Toxaphene	8001-35-2	µg/L	5.0	<5.0	U
22	Aroclor-1016 (PCB-1016)	12674-11-2	µg/L	1.0	<1.0	U
23	Aroclor-1221 (PCB-1221)	11104-28-2	µg/L	2.0	<2.0	U
24	Aroclor-1232 (PCB-1232)	11141-16-5	µg/L	1.0	<1.0	U
25	Aroclor-1242 (PCB-1242)	53469-21-9	µg/L	1.0	<1.0	U
26	Aroclor-1248 (PCB-1248)	12672-29-6	µg/L	1.0	<1.0	U
27	Aroclor-1254 (PCB-1254)	11097-69-1	µg/L	1.0	<1.0	U
28	Aroclor-1260 (PCB-1260)	11096-82-5	µg/L	1.0	<1.0	U
<b>Surrogates</b>				Control Limit, %	Surro. Rec.%	
1	2,4,5,6-Tetrachloro-m-xylene	877-09-8		30-150	65	
2	Decachlorobiphenyl (DCB)	2051-24-3		30-150	66	
# of out-of-control					0	

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL

J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)

E - Exceed calibration range

B - A positive value was found in the method blank

D - Diluted

56803

Applied P & Ch Laboratory

12760 Magnolia Ave., Chino CA 91710

Tel: (909) 590-1826 Fax: (909) 590-1498

**APCL Analytical Report**

Component Analyzed	Method	Unit	CRDL (PQL)	Analysis Result 267AOCSB018 99-02325-1
HEXACHLOROBENZENE	CLP-SVOC	µg/kg	330	< 400
HEXACHLOROBUTADIENE	CLP-SVOC	µg/kg	330	< 400
HEXACHLOROCYCLOPENTADIENE	CLP-SVOC	µg/kg	330	< 400
HEXACHLOROETHANE	CLP-SVOC	µg/kg	330	< 400
INDENO(1,2,3-CD)PYRENE	CLP-SVOC	µg/kg	330	< 400
ISOPHORONE	CLP-SVOC	µg/kg	330	< 400
2-METHYLNAPHTHALENE	CLP-SVOC	µg/kg	330	< 400
2-METHYLPHENOL (O-CRESOL)	CLP-SVOC	µg/kg	330	< 400
3/4-METHYLPHENOL (M/P-CRESOL)	CLP-SVOC	µg/kg	330	< 400
NAPHTHALENE	CLP-SVOC	µg/kg	330	< 400
2-NITROANILINE	CLP-SVOC	µg/kg	830	< 1000
3-NITROANILINE	CLP-SVOC	µg/kg	830	< 1000
4-NITROANILINE	CLP-SVOC	µg/kg	830	< 1000
NITROBENZENE	CLP-SVOC	µg/kg	330	< 400
2-NITROPHENOL	CLP-SVOC	µg/kg	330	< 400
4-NITROPHENOL	CLP-SVOC	µg/kg	830	< 1000
N-NITROSO-DI-N-PROPYLAMINE	CLP-SVOC	µg/kg	330	< 400
N-NITROSODIPHENYLAMINE	CLP-SVOC	µg/kg	330	< 400
PENTACHLOROPHENOL (PCP)	CLP-SVOC	µg/kg	830	< 1000
PHENANTHRENE	CLP-SVOC	µg/kg	330	< 400
PHENOL	CLP-SVOC	µg/kg	330	< 400
PYRENE	CLP-SVOC	µg/kg	330	< 400
1,2,4-TRICHLOROBENZENE	CLP-SVOC	µg/kg	330	< 400
2,4,5-TRICHLOROPHENOL	CLP-SVOC	µg/kg	830	< 1000
2,4,6-TRICHLOROPHENOL	CLP-SVOC	µg/kg	330	< 400
<b>CLP: ORGANOCHLORINE PESTICIDES &amp; PCB</b>				
Dilution Factor				1
ALDRIN	CLP-Pest	µg/kg	1.7	< 2.1
BETA-BHC	CLP-Pest	µg/kg	1.7	< 2.1
ALPHA-BHC	CLP-Pest	µg/kg	1.7	< 2.1
DELTA-BHC	CLP-Pest	µg/kg	1.7	< 2.1
GAMMA-BHC (LINDANE)	CLP-Pest	µg/kg	1.7	< 2.1
ALPHA-CHLORDANE	CLP-Pest	µg/kg	1.7	< 2.1
GAMMA-CHLORDANE	CLP-Pest	µg/kg	1.7	< 2.1
4,4'-DDD	CLP-Pest	µg/kg	3.3	< 4.0
4,4'-DDE	CLP-Pest	µg/kg	3.3	< 4.0
4,4'-DDT	CLP-Pest	µg/kg	3.3	< 4.0
DIELDRIN	CLP-Pest	µg/kg	3.3	< 4.0
ENDOSULFAN I	CLP-Pest	µg/kg	1.7	< 2.1
ENDOSULFAN II	CLP-Pest	µg/kg	3.3	< 4.0
ENDOSULFAN SULFATE	CLP-Pest	µg/kg	3.3	< 4.0

Applied P & Ch Laboratory

13760 Magnolia Ave. Chino CA 91710  
 Tel: (909) 590-1828 Fax: (909) 590-1468

**APCL Analytical Report**

Component Analyzed	Method	Unit	CRDL (PQL)	Analysis Result	
				267AOCSB018	99-02325-1
ENDRIN	CLP-Pest	µg/kg	3.3	<4.0	
ENDRIN ALDEHYDE	CLP-Pest	µg/kg	3.3	<4.0	
ENDRIN KETONE	CLP-Pest	µg/kg	3.3	<4.0	
HEPTACHLOR	CLP-Pest	µg/kg	1.7	<2.1	
HEPTACHLOR EPOXIDE	CLP-Pest	µg/kg	1.7	<2.1	
METHOXYCHLOR	CLP-Pest	µg/kg	17	<21	
TOXAPHENE	CLP-Pest	µg/kg	170	<210	
AROCLOL-1016 (PCB-1016)	CLP-Pest	µg/kg	33	<40	
AROCLOL-1221 (PCB-1221)	CLP-Pest	µg/kg	67	<81	
AROCLOL-1232 (PCB-1232)	CLP-Pest	µg/kg	33	<40	
AROCLOL-1242 (PCB-1242)	CLP-Pest	µg/kg	33	<40	
AROCLOL-1248 (PCB-1248)	CLP-Pest	µg/kg	33	<40	
AROCLOL-1254 (PCB-1254)	CLP-Pest	µg/kg	33	<40	
AROCLOL-1260 (PCB-1260)	CLP-Pest	µg/kg	33	<40	

PQL: Practical Quantitation Limit. MDL: Method Detection Limit. CRDL: Contract Required Detection Limit

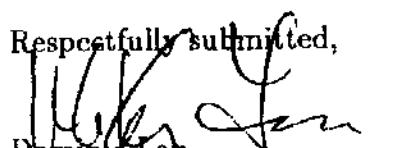
N.D.: Not Detected or less than the practical quantitation limit.

"-": Analysis is not required.

J: Reported between PQL and MDL.

† All results are reported on dry basis for soil samples.

Listed Dilution Factors (DF) are relative to the method default DF. All unlisted DFs are 1.0

Respectfully submitted,  
  
 Dominic LaRosa  
 Laboratory Director  
 Applied P & Ch Laboratory

# **Chlorinated Herbicides**

**56852**

Applied P & Ch Laboratory  
Organic Analysis Results for Method 8150B

Client Name:	Tetra Tech EM Inc.	Project No:	G0069-267A0	Collection Date:	02/10/1999
Project ID:	NWS Concord	Service ID:	991776	Collected by:	RL/CF
Sample ID:	<b>267A0CSB001</b>	Lab Sample ID:	99-1776-1	Received Date:	02/11/1999
Sample Type:	Field Sample	Sample Matrix	Soil	Moisture %:	9.9
Anal. Method:	8150B	Prep. Method:	3550	Instrument ID:	GC: T
Batch No:	99G1512	Prep. Date:	02/15/99	Anal. Date:	02/16/99
Data File Name:	1776.001	Prep. No:	1 of 1	Anal. Time:	09:29
Extract Vol.	1.0 mL	Sample Amount:	50.0 g	Dilution Factor:	1

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	2,4-D	94-75-7	µg/kg	180	<180	U
2	2,4-DB	94-82-6	µg/kg	180	<180	U
3	Dalapon	75-99-0	µg/kg	180	<180	U
4	Dicamba	1918-00-9	µg/kg	180	<180	U
5	Dichlorprop	120-36-5	µg/kg	180	<180	U
6	Dinoseb	88-85-7	µg/kg	180	<180	U
7	MCPA	94-74-6	µg/kg	11000	<11000	U
8	MCPP	93-65-2	µg/kg	11000	<11000	U
9	2,4,5-T	93-76-5	µg/kg	180	<180	U
10	2,4,5-TP (Silvex)	93-72-1	µg/kg	180	<180	U
<b>Surrogates</b>				<b>Control Limit, %</b>	<b>Surro. Rec.%</b>	
1	2,4-Di-Cl-phenylacetic acid, (DCAA)	19719-28-9		60-140	105	
# of out-of-control					0	
<b>Internal Standard</b>				<b>Control Limit, %</b>	<b>IS Rec.%</b>	
1	Dibromo-octafluorobiphenyl (DBOB)	10386-84-2		50-200	109	
# of out-of-control					0	

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL

E - Exceed calibration range

J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)

B - A positive value was found in the method blank

D - Diluted

49788

Applied P & Ch Laboratory  
Organic Analysis Results for Method 8150B

Client Name:	Tetra Tech EM Inc.	Project No:	G0069-267A0	Collection Date:	02/10/1999
Project ID:	NWS Concord	Service ID:	991776	Collected by:	RL/CF
Sample ID:	267A0CSB002	Lab Sample ID:	99-1776-2	Received Date:	02/11/1999
Sample Type:	Field Sample	Sample Matrix	Soil	Moisture %:	10.8
Anal. Method:	8150B	Prep. Method:	3550	Instrument ID:	GC: T
Batch No:	99G1512	Prep. Date:	02/15/99	Anal. Date:	02/16/99
Data File Name:	1776.002	Prep. No:	1 of 1	Anal. Time:	10:10
Extract Vol.	1.0 mL	Sample Amount:	50.0 g	Dilution Factor:	1

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	2,4-D	94-75-7	µg/kg	180	< 180	U
2	2,4-DB	94-82-6	µg/kg	180	< 180	U
3	Dalapon	75-99-0	µg/kg	180	< 180	U
4	Dicamba	1918-00-9	µg/kg	180	< 180	U
5	Dichlorprop	120-36-5	µg/kg	180	< 180	U
6	Dinoseb	88-85-7	µg/kg	180	< 180	U
7	MCPA	94-74-6	µg/kg	11000	< 11000	U
8	MCPP	93-65-2	µg/kg	11000	< 11000	U
9	2,4,5-T	93-76-5	µg/kg	180	< 180	U
10	2,4,5-TP (Silvex)	93-72-1	µg/kg	180	< 180	U

Surrogates		Control Limit, %	Sutro. Rec.%
1	2,4-Di-Cl-phenylacetic acid, (DCAA)	19719-28-9	60-140
# of out-of-control			118
			0

Internal Standard		Control Limit, %	IS Rec.%
1	Dibromo-octafluorobiphenyl (DBOB)	10386-84-2	50-200
# of out-of-control			117
			0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL

E - Exceed calibration range

J - Less than RL (PQL, EQL or CRDL), but greater  
than MDL, or an estimated result (e.g. for TIC)

B - A positive value was found in the method blank  
D - Diluted

49789

Applied P & Ch Laboratory  
Organic Analysis Results for Method 8150B

Client Name:	Tetra Tech EM Inc.	Project No:	G0069-267A0	Collection Date:	02/10/1999
Project ID:	NWS Concord	Service ID:	991776	Collected by:	RL/CF
Sample ID:	<b>267A0CSB003</b>	Lab Sample ID:	99-1776-3	Received Date:	02/11/1999
Sample Type:	Field Sample	Sample Matrix	Soil	Moisture %:	14.9
Anal. Method:	8150B	Prep. Method:	3550	Instrument ID:	GC: T
Batch No:	99G1512	Prep. Date:	02/15/99	Anal. Date:	02/16/99
Data File Name:	1776.003	Prep. No:	1 of 1	Anal. Time:	12:20
Extract Vol.	1.0 mL	Sample Amount:	50.0 g	Dilution Factor:	1

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	2,4-D	94-75-7	µg/kg	190	<190	U
2	2,4-DB	94-82-6	µg/kg	190	<190	U
3	Dalapon	75-99-0	µg/kg	190	<190	U
4	Dicamba	1918-00-9	µg/kg	190	<190	U
5	Dichlorprop	120-36-5	µg/kg	190	<190	U
6	Dinoseb	88-85-7	µg/kg	190	<190	U
7	MCPA	94-74-6	µg/kg	12000	<12000	U
8	MCPP	93-65-2	µg/kg	12000	<12000	U
9	2,4,5-T	93-76-5	µg/kg	190	<190	U
10	2,4,5-TP (Silvex)	93-72-1	µg/kg	190	<190	U

Surrogates		Control Limit, %	Surro. Rec.%
1	2,4-Di-Cl-phenylacetic acid, (DCAA)	19719-28-9	60-140
# of out-of-control			0
Internal Standard			IS Rec.%
1	Dibromo-octafluorobiphenyl (DBOB)	10386-84-2	50-200
# of out-of-control			0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL

E - Exceed calibration range

J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)

B - A positive value was found in the method blank

D - Diluted

49790

Applied P & Ch Laboratory  
Organic Analysis Results for Method 8150B

Client Name:	Tetra Tech EM Inc.	Project No:	G0069-267A0	Collection Date:	02/10/1999
Project ID:	NWS Concord	Service ID:	991776	Collected by:	RL/CF
Sample ID:	<b>267A0CSB006</b>	Lab Sample ID:	99-1776-6	Received Date:	02/11/1999
Sample Type:	Field Sample	Sample Matrix	Soil	Moisture %:	37.8
Anal. Method:	8150B	Prep. Method:	3550	Instrument ID:	GC: T
Batch No:	99G1512	Prep. Date:	02/15/99	Anal. Date:	02/16/99
Data File Name:	1776.006	Prep. No:	1 of 1	Anal. Time:	16:24
Extract Vol.	1.0 mL	Sample Amount:	50.0 g	Dilution Factor:	1

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	2,4-D	94-75-7	µg/kg	260	< 260	U
2	2,4-DB	94-82-6	µg/kg	260	< 260	U
3	Dalapon	75-99-0	µg/kg	260	< 260	U
4	Dicamba	1918-00-9	µg/kg	260	< 260	U
5	Dichlorprop	120-36-5	µg/kg	260	< 260	U
6	Dinoseb	88-85-7	µg/kg	260	< 260	U
7	MCPA	94-74-6	µg/kg	16000	< 16000	U
8	MCPP	93-65-2	µg/kg	16000	< 16000	U
9	2,4,5-T	93-76-5	µg/kg	260	< 260	U
10	2,4,5-TP (Silvex)	93-72-1	µg/kg	260	< 260	U
<b>Surrogates</b>						
1	2,4-Di-Cl-phenylacetic acid, (DCAA)	19719-28-9		Control Limit, %	Surro. Rec.%	
# of out-of-control				60-140	117	
					0	
<b>Internal Standard</b>						
1	Dibromo-octafluorobiphenyl (DBOB)	10386-84-2		Control Limit, %	IS Rec.%	
# of out-of-control				50-200	110	
					0	

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL

E - Exceed calibration range

J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)

B - A positive value was found in the method blank

D - Diluted

49791

Applied P & Ch Laboratory  
Organic Analysis Results for Method 8150B

Client Name:	Tetra Tech EM Inc.	Project No:	G0069-267A0	Collection Date:	02/10/1999
Project ID:	NWS Concord	Service ID:	991776	Collected by:	RL/CF
Sample ID:	267A0CSB007	Lab Sample ID:	99-1776-7	Received Date:	02/11/1999
Sample Type:	Field Sample	Sample Matrix	Soil	Moisture %:	14.5
Anal. Method:	8150B	Prep. Method:	3550	Instrument ID:	GC: T
Batch No:	99G1512	Prep. Date:	02/15/99	Anal. Date:	02/16/99
Data File Name:	1776.007	Prep. No:	1 of 1	Anal. Time:	13:00
Extract Vol.	1.0 mL	Sample Amount:	50.0 g	Dilution Factor:	1

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	2,4-D	94-75-7	µg/kg	190	<190	U
2	2,4-DB	94-82-6	µg/kg	190	<190	U
3	Dalapon	75-99-0	µg/kg	190	<190	U
4	Dicamba	1918-00-9	µg/kg	190	<190	U
5	Dichlorprop	120-36-5	µg/kg	190	<190	U
6	Dinoseb	88-85-7	µg/kg	190	<190	U
7	MCPA	94-74-6	µg/kg	12000	<12000	U
8	MCPP	93-65-2	µg/kg	12000	<12000	U
9	2,4,5-T	93-76-5	µg/kg	190	<190	U
10	2,4,5-TP (Silvex)	93-72-1	µg/kg	190	<190	U

Surrogates		Control Limit, %	Surro. Rec.%
1	2,4-Di-Cl-phenylacetic acid, (DCAA)	19719-28-9	60-140
# of out-of-control			0
Internal Standard			IS Rec.%
1 Dibromo-octafluorobiphenyl (DBOB)			134
# of out-of-control			0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL

J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)

E - Exceed calibration range

B - A positive value was found in the method blank

D - Diluted

49792

Applied P & Ch Laboratory  
Organic Analysis Results for Method 8150B

Client Name:	Tetra Tech EM Inc.	Project No:	G0069-267A0	Collection Date:	02/10/1999
Project ID:	NWS Concord	Service ID:	991776	Collected by:	RL/CF
Sample ID:	<b>267A0CSB008</b>	Lab Sample ID:	99-1776-8	Received Date:	02/11/1999
Sample Type:	Field Sample	Sample Matrix	Soil	Moisture %:	17.4
Anal. Method:	8150B	Prep. Method:	3550	Instrument ID:	GC: T
Batch No:	99G1512	Prep. Date:	02/15/99	Anal. Date:	02/16/99
Data File Name:	1776.008	Prep. No:	1 of 1	Anal. Time:	13:41
Extract Vol.	1.0 mL	Sample Amount:	50.0 g	Dilution Factor:	1

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	2,4-D	94-75-7	µg/kg	190	< 190	U
2	2,4-DB	94-82-6	µg/kg	190	< 190	U
3	Dalapon	75-99-0	µg/kg	190	< 190	U
4	Dicamba	1918-00-9	µg/kg	190	< 190	U
5	Dichlorprop	120-36-5	µg/kg	190	< 190	U
6	Dinoseb	88-85-7	µg/kg	190	< 190	U
7	MCPA	94-74-6	µg/kg	12000	< 12000	U
8	MCPP	93-65-2	µg/kg	12000	< 12000	U
9	2,4,5-T	93-76-5	µg/kg	190	< 190	U
10	2,4,5-TP (Silvex)	93-72-1	µg/kg	190	< 190	U

<b>Surrogates</b>		<b>Control Limit, %</b>	<b>Surro. Rec.%</b>
1 2,4-Di-Cl-phenylacetic acid, (DCAA)	19719-28-9	60-140	112
# of out-of-control			0
<b>Internal Standard</b>		<b>Control Limit, %</b>	<b>IS Rec.%</b>
1 Dibromo-octadfluorobiphenyl (DBOB)	10386-84-2	50-200	117
# of out-of-control			0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL

J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)

E - Exceed calibration range

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49793

Applied P & Ch Laboratory  
Organic Analysis Results for Method 8150

Client Name:	Tetra Tech EM Inc.	Project No:	G0069-267A01	Collection Date:	02/12/1999
Project ID:	PO#992208	Service ID:	991825	Collected by:	Lantz/Carlson
Sample ID:	<b>267AOCSB013</b>	Lab Sample ID:	99-1825-4	Received Date:	02/13/1999
Sample Type:	Field Sample	Sample Matrix	Soil	Moisture %:	22.3
Anal. Method:	8150	Prep. Method:	3550	Instrument ID:	GC: T
Batch No:	99G1512	Prep. Date:	02/15/99	Anal. Date:	02/16/99
Data File Name:	1825.004	Prep. No:	1 of 1	Anal. Time:	15:02
Extract Vol.	1.0 mL	Sample Amount:	50.0 g	Dilution Factor:	1

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	2,4-D	94-75-7	µg/kg	13	<13	U
2	2,4-DB	94-82-6	µg/kg	13	<13	U
3	Dalapon (dichloroacetic acid)	75-99-0	µg/kg	26	<26	U
4	Dicamba	1918-00-9	µg/kg	13	<13	U
5	Dichloroprop	120-36-5	µg/kg	13	<13	U
6	Dinoseb (DNBP)	88-85-7	µg/kg	26	<26	U
7	MCPA	94-74-6	mg/kg	6.4	<6.4	U
8	MCPP	93-65-2	mg/kg	6.4	<6.4	U
9	2,4,5-T	93-76-5	µg/kg	13	<13	U
10	2,4,5-TP (Silvex)	93-72-1	µg/kg	13	<13	U

Surrogates		Control Limit, %	Surro. Rec.%
1	2,4-Di-Cl-phenylacetic acid, (DCAA)	19719-28-9	60-140
# of out-of-control			0
Internal Standard			IS Rec.%
1	Dibromo-octafluorobiphenyl (DBOB)	10386-84-2	50-200
# of out-of-control			0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL

E - Exceed calibration range

J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)

B - A positive value was found in the method blank

D - Diluted

56855

**Organic Analysis Results for Method 8150**

Client Name:	Tetra Tech EM Inc.	Project No:	G0069-267A01	Collection Date:	02/12/1999
Project ID:	PO#992208	Service ID:	991825	Collected by:	Lantz/Carlson
Sample ID:	<b>267AOCSB014</b>	Lab Sample ID:	99-1825-5	Received Date:	02/13/1999
Sample Type:	Field Sample	Sample Matrix	Soil	Moisture %:	36.4
Anal. Method:	8150	Prep. Method:	3550	Instrument ID:	GC: T
Batch No:	99G1512	Prep. Date:	02/15/99	Anal. Date:	02/17/99
Data File Name:	1825.105	Prep. No:	1 of 1	Anal. Time:	22:37
Extract Vol.	1.0 mL	Sample Amount:	50.0 g	Dilution Factor:	1

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	2,4-D	94-75-7	µg/kg	16	< 16	U
2	2,4-DB	94-82-6	µg/kg	16	< 16	U
3	Dalapon (dichloroacetic acid)	75-99-0	µg/kg	31	< 31	U
4	Dicamba	1918-00-9	µg/kg	16	< 16	U
5	Dichloroprop	120-36-5	µg/kg	16	< 16	U
6	Dinoseb (DNBP)	88-85-7	µg/kg	31	< 31	U
7	MCPA	94-74-6	mg/kg	7.9	< 7.9	U
8	MCPP	93-65-2	mg/kg	7.9	< 7.9	U
9	2,4,5-T	93-76-5	µg/kg	16	< 16	U
10	2,4,5-TP (Silvex)	93-72-1	µg/kg	16	< 16	U

Surrogates		Control Limit, %	Surro. Rec.%
1	2,4-Di-Cl-phenylacetic acid, (DCAA)	19719-28-9	60-140
# of out-of-control			103
			0
Internal Standard		Control Limit, %	IS Rec.%
1	Dibromo-octafluorobiphenyl (DBOB)	10386-84-2	50-200
# of out-of-control			75
			0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL

E - Exceed calibration range

J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)

B - A positive value was found in the method blank  
D - Diluted

56856

**Applied P & Ch Laboratory**  
**Organic Analysis Results for Method 8150**

Client Name:	Tetra Tech EM Inc.	Project No:	C0069-267A01	Collection Date:	02/12/1999
Project ID:	PO#992208	Service ID:	991825	Collected by:	Lantz/Carlson
Sample ID:	267AOCSW017	Lab Sample ID:	99-1825-8	Received Date:	02/13/1999
Sample Type:	Field Sample	Sample Matrix	Water	Moisture %:	-
Anal. Method:	8150	Prep. Method:	8150	Instrument ID:	GC: T
Batch No:	99G1549	Prep. Date:	02/18/99	Anal. Date:	02/19/99
Data File Name:	1825.008	Prep. No:	1 of 1	Anal. Time:	12:46
Extract Vol.	1.0 mL	Sample Amount:	1000 mL	Dilution Factor:	1

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	2,4-D	94-75-7	µg/L	0.5	<0.5	U
2	2,4-DB	94-82-6	µg/L	0.5	<0.5	U
3	Dalapon (dichloroacetic acid)	75-99-0	µg/L	1	<1	U
4	Dicamba	1918-00-9	µg/L	0.5	<0.5	U
5	Dichloroprop	120-36-5	µg/L	0.5	<0.5	U
6	Dinoseb (DNBP)	88-85-7	µg/L	0.5	<0.5	U
7	MCPA	94-74-6	mg/L	0.1	<0.1	U
8	MCPP	93-65-2	mg/L	0.1	<0.1	U
9	2,4,5-T	93-76-5	µg/L	0.5	<0.5	U
10	2,4,5-TP (Silvex)	93-72-1	µg/L	0.5	<0.5	U

Surrogates		Control Limit, %	Surro. Rec.%
1	2,4-Di-Cl-phenylacetic acid, (DCAA)	19719-28-9	60-140
# of out-of-control			73 0
Internal Standard			IS Rec.%
1	Dibromo-octafluorobiphenyl (DBOB)	10386-84-2	50-200
# of out-of-control			100 0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL

E - Exceed calibration range

J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)

B - A positive value was found in the method blank

D - Diluted

56857

Applied P & Ch Laboratory

13760 Magnolia Ave. Chino CA 91710

Tel: (909) 590-1928 Fax: (909) 590-1496

**APCL Analytical Report**

Component Analyzed	Method	Unit	CRDL (PQL)	Analysis Result 267AOCSB018 99-02325-1
HEXACHLOROBENZENE	CLP-SVOC	µg/kg	330	< 400
HEXACHLOROBUTADIENE	CLP-SVOC	µg/kg	330	< 400
HEXACHLOROCYCLOPENTADIENE	CLP-SVOC	µg/kg	330	< 400
HEXACHLOROETHANE	CLP-SVOC	µg/kg	330	< 400
INDENO(1,2,3-CD)PYRENE	CLP-SVOC	µg/kg	330	< 400
ISOPHORONE	CLP-SVOC	µg/kg	330	< 400
2-METHYLNAPHTHALENE	CLP-SVOC	µg/kg	330	< 400
2-METHYLPHENOL (O-CRESOL)	CLP-SVOC	µg/kg	330	< 400
3/4-METHYLPHENOL (M/P-CRESOL)	CLP-SVOC	µg/kg	330	< 400
NAPHTHALENE	CLP-SVOC	µg/kg	330	< 400
2-NITROANILINE	CLP-SVOC	µg/kg	830	< 1000
3-NITROANILINE	CLP-SVOC	µg/kg	830	< 1000
4-NITROANILINE	CLP-SVOC	µg/kg	830	< 1000
NITROBENZENE	CLP-SVOC	µg/kg	330	< 400
2-NITROPHENOL	CLP-SVOC	µg/kg	330	< 400
4-NITROPHENOL	CLP-SVOC	µg/kg	830	< 1000
N-NITROSO-DI-N-PROPYLAMINE	CLP-SVOC	µg/kg	330	< 400
N-NITROSODIPHENYLAMINE	CLP-SVOC	µg/kg	330	< 400
PENTACHLOROPHENOL (PCP)	CLP-SVOC	µg/kg	830	< 1000
PHENANTHRENE	CLP-SVOC	µg/kg	330	< 400
PHENOL	CLP-SVOC	µg/kg	330	< 400
PYRENE	CLP-SVOC	µg/kg	330	< 400
1,2,4-TRICHLOROBENZENE	CLP-SVOC	µg/kg	330	< 400
2,4,5-TRICHLOROPHENOL	CLP-SVOC	µg/kg	830	< 1000
2,4,6-TRICHLOROPHENOL	CLP-SVOC	µg/kg	330	< 400
<b>CLP: ORGANOCHLORINE PESTICIDES &amp; PCB</b>				
Dilution Factor				1
ALDRIN	CLP-Pest	µg/kg	1.7	< 2.1
BETA-BHC	CLP-Pest	µg/kg	1.7	< 2.1
ALPHA-BHC	CLP-Pest	µg/kg	1.7	< 2.1
DELTA-BHC	CLP-Pest	µg/kg	1.7	< 2.1
GAMMA-BHC (LINDANE)	CLP-Pest	µg/kg	1.7	< 2.1
ALPHA-CHLORDANE	CLP-Pest	µg/kg	1.7	< 2.1
GAMMA-CHLORDANE	CLP-Pest	µg/kg	1.7	< 2.1
4,4'-DDD	CLP-Pest	µg/kg	3.3	< 4.0
4,4'-DDE	CLP-Pest	µg/kg	3.3	< 4.0
4,4'-DDT	CLP-Pest	µg/kg	3.3	< 4.0
DIELDRIN	CLP-Pest	µg/kg	3.3	< 4.0
ENDOSULFAN I	CLP-Pest	µg/kg	1.7	< 2.1
ENDOSULFAN II	CLP-Pest	µg/kg	3.3	< 4.0
ENDOSULFAN SULFATE	CLP-Pest	µg/kg	3.3	< 4.0

Applied P & Ch Laboratory

13760 Magnolia Ave. Chino CA 91710  
 Tel: (909) 590-1628 Fax: (909) 590-1498

**APCL Analytical Report**

Component Analyzed	Method	Unit	CRDL (PQL)	Analysis Result	
				267AOCSB018	99-02325-1
ENDRIN	CLP-Pest	µg/kg	3.3	<4.0	
ENDRIN ALDEHYDE	CLP-Pest	µg/kg	3.3	<4.0	
ENDRIN KETONE	CLP-Pest	µg/kg	3.3	<4.0	
HEPTACHLOR	CLP-Pest	µg/kg	1.7	<2.1	
HEPTACHLOR EPOXIDE	CLP-Pest	µg/kg	1.7	<2.1	
METHOXYCHLOR	CLP-Pest	µg/kg	17	<21	
TOXAPHENE	CLP-Pest	µg/kg	170	<210	
AROCLOL-1016 (PCB-1016)	CLP-Pest	µg/kg	33	<40	
AROCLOL-1221 (PCB-1221)	CLP-Pest	µg/kg	67	<81	
AROCLOL-1232 (PCB-1232)	CLP-Pest	µg/kg	33	<40	
AROCLOL-1242 (PCB-1242)	CLP-Pest	µg/kg	33	<40	
AROCLOL-1248 (PCB-1248)	CLP-Pest	µg/kg	33	<40	
AROCLOL-1254 (PCB-1254)	CLP-Pest	µg/kg	33	<40	
AROCLOL-1260 (PCB-1260)	CLP-Pest	µg/kg	33	<40	

PQL: Practical Quantitation Limit. MDL: Method Detection Limit. CRDL: Contract Required Detection Limit

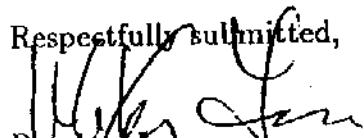
N.D.: Not Detected or less than the practical quantitation limit.

"-": Analysis is not required.

J: Reported between PQL and MDL.

† All results are reported on dry basis for soil samples.

Listed Dilution Factors (DF) are relative to the method default DF. All und listed DF's are 1.0

Respectfully submitted,  
  
 Dominic Lab  
 Laboratory Director  
 Applied P & Ch Laboratory

# WET CHEMISTRY

49941

Applied P & Ch Laboratory  
**Wet Analysis Results for Method ASTM-D2216**

Client Name: Tetra Tech EM Inc.  
 Project ID: NWS Concord

Project No: G0069-267A0 Anal. Method: ASTM-D2216  
 Service ID: 991776 Collected by: RL/CF

**Component Name: Percent Moisture**  
**CAS No: 7732-18-5**

Lab ID	Sample ID	Matrix	Coll. Date	Rcv Date	Anal. Date	Batch	Unit	RL	Result	Q
99-1776-1	267A0CSB001	Soil	02/10/99	02/11/99	02/12/99	99W1818	W%	0.0	9.9	
99-1776-2	267A0CSB002	Soil	02/10/99	02/11/99	02/12/99	99W1818	W%	0.0	10.8	
99-1776-3	267A0CSB003	Soil	02/10/99	02/11/99	02/12/99	99W1818	W%	0.0	15.0	
99-1776-4	267A0CSB004	Soil	02/10/99	02/11/99	02/12/99	99W1818	W%	0.0	4.4	
99-1776-5	267A0CSB005	Soil	02/10/99	02/11/99	02/12/99	99W1818	W%	0.0	9.1	
99-1776-6	267A0CSB006	Soil	02/10/99	02/11/99	02/12/99	99W1818	W%	0.0	37.8	
99-1776-7	267A0CSB007	Soil	02/10/99	02/11/99	02/12/99	99W1818	W%	0.0	14.5	
99-1776-8	267A0CSB008	Soil	02/10/99	02/11/99	02/12/99	99W1818	W%	0.0	17.4	
99-1776-9	267A0CSB009	Soil	02/10/99	02/11/99	02/12/99	99W1818	W%	0.0	25.8	

Note: Q - Qualifier.

Qualifier: U - Not Detected or less than MDL

B - Less than RL (PQL, EQL or CRDL), but greater than MDL.

49942

Applied P & Ch Laboratory  
Wet Analysis Results for Method 9040

Client Name: Tetra Tech EM Inc.  
Project ID: NWS Concord

Project No: G0069-267A0 Anal. Method 9040  
Service ID: 991776 Collected by: RL/CF

Component Name: pH

CAS No: 10-29-7

Lab ID	Sample ID	Matrix	Coll. Date	Rcv Date	Anal. Date	Batch	Unit	RL	Result	Q
99-1776-1	267A0CSB001	Soil	02/10/99	02/11/99	02/12/99	99W1821	pH unit	0.01	6.44	
99-1776-2	267A0CSB002	Soil	02/10/99	02/11/99	02/12/99	99W1821	pH unit	0.01	4.15	
99-1776-3	267A0CSB003	Soil	02/10/99	02/11/99	02/12/99	99W1821	pH unit	0.01	5.16	
99-1776-4	267A0CSB004	Soil	02/10/99	02/11/99	02/12/99	99W1821	pH unit	0.01	5.09	
99-1776-5	267A0CSB005	Soil	02/10/99	02/11/99	02/12/99	99W1821	pH unit	0.01	6.23	
99-1776-6	267A0CSB006	Soil	02/10/99	02/11/99	02/12/99	99W1821	pH unit	0.01	5.51	
99-1776-7	267A0CSB007	Soil	02/10/99	02/11/99	02/12/99	99W1821	pH unit	0.01	4.95	
99-1776-8	267A0CSB008	Soil	02/10/99	02/11/99	02/12/99	99W1821	pH unit	0.01	4.73	
99-1776-9	267A0CSB009	Soil	02/10/99	02/11/99	02/12/99	99W1821	pH unit	0.01	4.55	
99W1821MB01	PBS001	Soil	02/12/99	02/12/99	02/12/99	99W1821	pH unit	0.01	6.16	

Note: Q - Qualifier.

Qualifier: U - Not Detected or less than MDL

B - Less than RL (PQL, EQL or CRDL), but greater than MDL.

49943

Applied P & Ch Laboratory  
**Wet Analysis Results for Method ASTM-D2216**

Client Name: Tetra Tech EM Inc.  
 Project ID: PO#992208

Project No: G0069-267A01 Anal. Method ASTM-D2216  
 Service ID: 991825 Collected by: Lantz/Carlson

**Component Name:** Moisture

**CAS No:** 7732-18-5

Lab ID	Sample ID	Matrix	Coll. Date	Rcv Date	Anal. Date	Batch	Unit	RL	Result	Q
99-1825-1	267AOCSB010	Soil	02/12/99	02/13/99	02/15/99	99W1845	%Moisture	0.0	6.9	
99-1825-2	267AOCSB011	Soil	02/12/99	02/13/99	02/15/99	99W1845	%Moisture	0.0	12.1	
99-1825-3	267AOCSB012	Soil	02/12/99	02/13/99	02/15/99	99W1845	%Moisture	0.0	13.3	
99-1825-4	267AOCSB013	Soil	02/12/99	02/13/99	02/15/99	99W1845	%Moisture	0.0	22.3	
99-1825-5	267AOCSB014	Soil	02/12/99	02/13/99	02/15/99	99W1845	%Moisture	0.0	36.4	
99-1825-6	267AOCSB015	Soil	02/12/99	02/13/99	02/15/99	99W1845	%Moisture	0.0	20.3	
99-1825-7	267AOCSB016	Soil	02/12/99	02/13/99	02/15/99	99W1845	%Moisture	0.0	18.9	

Note: Q - Qualifier.

Qualifier: U - Not Detected or less than MDL

B - Less than RL (PQL, EQL or CRDL), but greater than MDL.

56987

Applied P & Ch Laboratory  
**Wet Analysis Results for Method 9045**

Client Name: Tetra Tech EM Inc.  
 Project ID: PO#992208

Project No: G0069-267A01 Anal. Method 9045  
 Service ID: 991825 Collected by: Lantz/Carlson

Component Name: pH

CAS No: 10-29-7

Lab ID	Sample ID	Matrix	Coll. Date	Rcv Date	Anal. Date	Batch	Unit	RL	Result	Q
99-1825-1	267AOCSB010	Soil	02/12/99	02/13/99	02/15/99	99W1851	pH unit	0.1	6.24	
99-1825-2	267AOCSB011	Soil	02/12/99	02/13/99	02/15/99	99W1851	pH unit	0.1	5.48	
99-1825-3	267AOCSB012	Soil	02/12/99	02/13/99	02/15/99	99W1851	pH unit	0.1	6.38	
99-1825-4	267AOCSB013	Soil	02/12/99	02/13/99	02/15/99	99W1851	pH unit	0.1	3.81	
99-1825-5	267AOCSB014	Soil	02/12/99	02/13/99	02/15/99	99W1851	pH unit	0.1	5.36	
99-1825-6	267AOCSB015	Soil	02/12/99	02/13/99	02/15/99	99W1851	pH unit	0.1	3.84	
99-1825-7	267AOCSB016	Soil	02/12/99	02/13/99	02/15/99	99W1851	pH unit	0.1	6.18	
99W1851MB01	PBS001	Soil	02/15/99	02/15/99	02/15/99	99W1851	pH unit	0.1	6.10	

Note: Q - Qualifier.

Qualifier: U - Not Detected or less than MDL

B - Less than RL (PQL, EQL or CRDL), but greater than MDL.

5698

**APPENDIX H**

**ANALYTICAL DATA VALIDATION SUMMARY**



## APPENDIX H

### DATA VALIDATION REVIEW AND SUMMARY

This appendix discusses data usability issues that affect the detection of chemicals at AOC1. Data usability and problems identified during data validation are discussed separately for each analyte group. The analyses listed below were conducted in accordance the EPA Contract Laboratory Program (CLP) (EPA 1994) and SW-846 (EPA 1996) methods, unless otherwise noted:

- CLP metals
- CLP volatile organic analysis
- CLP semivolatile organic analysis
- CLP pesticides/polychlorinated biphenyls (PCB) analysis
- Herbicides (EPA Method 8150)

#### **Metals**

All metal results were valid with the exception of all nondetected results for manganese, which were rejected (Re) due to low matrix spike recovery. Rejection of these data has little impact on the usability of these results. Laboratory and field blanks contained detectable amounts of several metals (antimony, cadmium, copper, cobalt, manganese, molybdenum, nickel, and silver). Sample results were qualified as nondetected (UJb) if the sample results were less than five times the associated blank value. Because they exceeded matrix spike criteria, the following metals were qualified as estimated (Je): chromium, copper, nickel, and selenium. Spike recoveries for these metals were above the acceptance limits of 125 percent, indicating that detected results may be biased high. All detected results below the contract-required detection limit (CRDL) but above the instrument detection limit (IDL) were qualified as estimated (Jg). Detected results reported above the IDL but below the CRDL are considered to be qualitatively acceptable but quantitatively unreliable due to uncertainty in analytical precision near the limit of detection.

Quantitation limits defined in the quality assurance project plan (QAPP) for CLP metals were met.

### **Volatile Organic Compounds**

All volatile organic compound (VOC) data were assessed to be valid and usable with no rejected data.

Common VOC laboratory contaminants (acetone and methylene chloride) were detected in the samples, and the results were qualified as nondetected (UJb) if the sample result was less than 5 times the blank value. There were instances where the acetone level was greater than 5 times the blank value; therefore, acetone was included as a chemical of potential concern (COPC). Due to continuing calibration exceedances, detected results for acetone and nondetected results for acetone, 2-butanone, and 2-hexanone were qualified as estimated (Ujc, Jc).

Quantitation limits defined in the QAPP for CLP VOCs were met.

### **Semivolatile Organic Compounds**

All semivolatile organic compound (SVOC) data were assessed to be valid and usable with no rejected data.

Bis (2-ethylhexyl) phthalate, a common laboratory contaminant, was detected in sample 267AOCS004, and the result was qualified as nondetected (UJb) due to the fact that the sample result was less than 5 times the blank value.

Quantitation limits defined in the QAPP for CLP SVOCs were met.

### **Pesticides/PCBs**

All pesticides/PCBs data were assessed to be valid and usable with no rejected data.

Detected results below the CRDL were qualified as estimated (Jg). Detected results reported below the CRDL are considered to be qualitatively acceptable but quantitatively unreliable due to uncertainty in analytical precision near the limit of detection.

Quantitation limits defined in the QAPP for CLP pesticides/PCB's were met.

### **Herbicides**

All herbicides data were assessed to be valid and usable with no rejected data. Due to initial calibration criteria exceedances, all nondetected results for the herbicide MCPA were qualified as estimated (Ujc) in all samples. Due to continuing calibration criteria exceedances, nondetected results for herbicides MCPP, MCPA, and 2,4-DB were qualified as estimated (Ujc) in samples 267AOCSB001 through 267AOCSB008.

Quantitation limits defined in the QAPP for herbicides were met for all analytes with the exception of dalapon.

### **Data Validation Conclusion**

EPA guidance provided in "Risk Assessment Guidance for Superfund" (RAGS), Volume I (EPA 1989) was used to determine the usability of the validated data. Exhibit 5-5 in RAGS states that data qualified as estimated (J) based on data validation reports may be used in quantitative risk assessments. Only data qualified as rejected (R) are considered unusable for risk assessment purposes. If data are of acceptable quality for use in quantitative risk assessments, they should also be appropriate for determining the extent of contamination. Accordingly, all J-qualified data and no R-qualified data were used to assess human health risks, ecological risks, and nature and extent of contamination at AOC1.

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**APPENDIX I**  
**HUMAN HEALTH RISK ASSESSMENT**



## **APPENDIX I**

### **SCREENING-LEVEL HUMAN HEALTH RISK ASSESSMENT**

A screening-level human health risk assessment (HHRA) was conducted for the Area of Concern 1 (AOC1) at Weapons Support Facility Seal Beach (WPNSUPPFAC), Detachment Concord. The purpose of the HHRA was to assess potential risks associated with future land use at AOC1. The risk assessment is based on the site characterization and soil sampling data presented in Section 4.0 of this report.

Potential carcinogenic risks and noncarcinogenic hazards were calculated based on the ratio of detected contaminant concentrations to U.S. Environmental Protection Agency (EPA) Region IX preliminary remediation goals (PRG) (EPA 1998a). This approach is consistent with EPA guidance provided in "Risk Assessment Guidance for Superfund, Part A" (EPA 1989) and the memorandum regarding EPA Region IX PRGs (EPA 1998a).

This appendix is organized to reflect the four basic steps of a risk assessment as follows: Section 1, Data Evaluation and Identification of Chemicals of Potential Concern; Section 2, Exposure Assessment; Section 3, Toxicity Assessment; and Section 4, Risk Characterization.

#### **1.0 DATA EVALUATION AND IDENTIFICATION OF CHEMICALS OF POTENTIAL CONCERN**

Information on the identification and evaluation of analytical data for use in risk assessment is summarized in this section. The data provide the basis for selecting chemicals of potential concern (COPC) for AOC1 and estimating the exposure point concentrations for the risk assessment.

##### **1.1 DATA EVALUATION**

The available analytical data for this risk assessment includes the results of 17 soil samples collected at depths of 0 to 5 feet below ground surface (bgs) from AOC1, as presented in Section 4 of this report. Soil samples were analyzed for metals, volatile organic compounds (VOC), semivolatile organic compounds (SVOC), pesticides, herbicides, and polychlorinated biphenyls (PCB). A list of chemicals detected in the soil samples collected at the site are presented in Table 2. The analytical data are presented in Appendix G.

An evaluation of the sampling and analysis methodology employed at AOC1 was carried out to verify that the quality of the sampling data was acceptable for use in a quantitative risk assessment. Data validation of these samples followed EPA data validation guidelines (EPA 1994a and 1994b). The data were found to meet all requirements of "definitive data" as described in *Data Quality Objectives Process*

*for Superfund* (EPA 1993). Definitive data are generated using rigorous analytical methods, such as EPA reference methods. Definitive data are also analyte-specific, with confirmation of analyte identity and concentration (EPA 1993). All data without qualifiers and all data qualified as estimated (J) were used in the risk assessment. Only data qualified as rejected (R) were considered unusable for risk assessment purposes (EPA 1989 and 1992).

## **1.2 IDENTIFICATION OF CHEMICALS OF POTENTIAL CONCERN**

Chemicals of potential concern (COPC) in soil were identified using a three-step process. First, the validated soil analytical data were assembled, and a preliminary list of all analytes detected in one or more soil samples was developed for AOC1. Second, metals were screened against background concentrations that were previously defined for Concord upland soils (PRC Environmental Management, Inc. 1996). If the maximum detected concentration of a metal exceeded its respective background concentration, the metal was retained as a COPC. Third, elements considered essential human nutrients (calcium, magnesium, potassium, and sodium) were removed from the list. EPA guidance states that these nutrients can be deleted because of their low toxicities when detected at environmental concentrations (EPA 1989). Iron is also considered an essential nutrient; however, a PRG has recently been established for iron in light of its potential toxicity at high concentrations and iron was therefore retained as a COPC. All remaining constituents on the list were considered COPCs and therefore evaluated in the risk assessment.

## **2.0 EXPOSURE ASSESSMENT**

The exposure assessment evaluates the nature and magnitude of potential exposures associated with AOC1. The assessment includes a description of the exposure setting and land use, the identification of potential receptors and exposure pathways, and the estimation of exposure point concentrations.

### **2.1 EXPOSURE SETTING AND LAND USE**

The exposure setting at AOC1, including geology and topography, is described in Section 1.0 of this report. AOC1 is located within Naval Weapons Station Concord. The area is trapezoidal in shape and covers approximately 17.4 acres. The site is currently undeveloped, with the exception of a pump station operated by the Contra Costa Water District (CCWD) and a concrete foundation slab from a previously demolished building located to the west of the pump station. The pump station is located on the southern portion of the property.

## **2.2 RECEPTORS AND EXPOSURE PATHWAYS**

The industrial scenario was the only scenario evaluated in this screening level HHRA. Currently, access to the site is restricted to base personnel performing occasional surveillance or maintenance activities. CCWD employees may also occasionally access the site to provide maintenance at the pump station. There are currently no plans for base closure, and the site use is not expected to change. The Navy purchased the property to comply with explosive safety arc regulations; therefore, it is highly unlikely that the site will be developed for industrial use in the future. As a result, evaluation of the industrial scenario will likely overestimate health risks to actual receptors at the site.

Direct contact with groundwater was not evaluated in the risk assessment. Most private and city municipal water in the region is supplied by treated surface water sources, although several wells are located in the industrial complex area to the west of WPNSUPPFAC Concord. The wells are used primarily to supply process water and cooling water. Groundwater from a series of potable water wells surrounding Mallard Reservoir, also located west of WPNSUPPFAC Concord, is used to augment aqueduct supplies of drinking water during drought periods; however, these wells have been used only three times since the mid-1960s (IT Corporation 1992). In addition, groundwater flow at AOC1 is to the north towards Suisun Bay, and the wells are located several miles upgradient from AOC1 (Ecology and Environment, Inc. 1984).

## **2.3 EXPOSURE POINTS AND EXPOSURE POINT CONCENTRATIONS**

Exposure points are defined as areas of potential human contact with a contaminated medium. They are typically defined on the basis of population activity patterns at a site and the relationship of those activities to the distribution of COPCs in soil. For the purposes of this screening-level assessment, the entire area was defined as a single exposure point. In accordance with California Environmental Protection Agency, Department of Toxic Substances Control (DTSC) guidance for screening-level assessments, the maximum detected concentration of each contaminant was used as the exposure point concentration (DTSC 1994).

## **3.0 TOXICITY ASSESSMENT**

A toxicity assessment typically includes two components: (1) brief descriptions of the major toxicological effects associated with the chemicals of concern identified at a site (toxicity profiles) and (2) a list of toxicity values (slope factors [SF] and reference doses [RfD]) used in the risk assessment for characterization of risk and hazards. RfDs and SFs developed by EPA are the principal toxicity values used to estimate PRGs. The toxicity values are derived using data from both animal experiments and

human epidemiological studies and can be used directly with EPA intake algorithms. Sources of toxicity values include the Integrated Risk Information System (IRIS) (EPA 1998b), which is a database containing EPA-verified, current toxicity values; and the Health Effects Assessment Summary Tables (HEAST) (EPA 1997).

Toxicity values used in the calculation of chemical-specific PRGs are presented in the EPA Region IX PRG memorandum (EPA 1998a). Toxicity profiles are not presented in this screening level risk assessment because the EPA Region IX memorandum was used as the basis for assessing toxicity. The source of specific toxicity values used to calculate PRGs selected for use in this risk assessment is discussed below.

### Toxicity Values

PRGs are health-based concentrations in soil for individual chemicals that correspond to an excess lifetime cancer risk of  $1 \times 10^{-6}$  or a noncarcinogenic hazard quotient of 1. In most cases, when exposure to a specific chemical has been associated with both carcinogenic and noncarcinogenic effects, only the more stringent value (typically, the value corresponding to a cancer risk of  $1 \times 10^{-6}$ ) is presented in the printed PRG table. The electronic version of the EPA Region IX PRGs includes PRGs corresponding to the noncarcinogenic effects of carcinogens. Both the carcinogenic and noncarcinogenic PRGs were used, when available.

For chromium, the toxicity is dependent on the ionic form of the metal (that is, whether chromium is present as the trivalent or hexavalent form). Hexavalent chromium is a carcinogen by the inhalation route of exposure, whereas trivalent chromium is not a carcinogen by any route of exposure. In general, chromium is present in soil as either elemental chromium or trivalent chromium unless industrial discharges of hexavalent chromium have occurred (Fetter 1993). However, because soil samples collected from AOC1 were not speciated for chromium, it was conservatively assumed that chromium is present as both the hexavalent and trivalent forms. The EPA Region IX PRG used to evaluate the cancer risks associated with potential exposure to chromium assumes a 1 to 6 ratio of hexavalent chromium to trivalent chromium.

## 4.0 RISK CHARACTERIZATION

In this section, potential impacts to human health from industrial exposures to COPCs are characterized for AOC1. Section 4.1 presents the methods used to estimate carcinogenic risks and noncarcinogenic

hazards associated with exposure to COPCs in soil, as well as health effects from exposure to lead. Section 4.2 presents the risk assessment results from AOC1.

#### **4.1 Risk Characterization Methodology**

For AOC1, the carcinogenic risk and noncarcinogenic hazard index was calculated based on a ratio of contaminant concentrations to EPA Region IX industrial PRGs for soil (EPA 1998a).

##### **Carcinogenic Risks**

For COPCs that are classified as carcinogens, cancer risk associated with exposure to a single contaminant is estimated by comparing the exposure point concentration of the carcinogen to the cancer PRG using the following equation:

$$\text{Cancer risk} = (\text{EPC}/\text{PRG}) \times 10^{-6}$$

where

EPC	=	Exposure point concentration (mg/kg)
PRG	=	Region IX preliminary remediation goal (mg/kg)

At a given site, individuals may be exposed to more than one substance. The carcinogenic risks associated with exposure to multiple contaminants can be assessed using an approach outlined by EPA in its memorandum regarding the derivation of PRGs (EPA 1998a). The total risk from exposure to multiple contaminants is calculated using the following equation:

$$\text{Total risk} = 10^{-6} \times \{\text{EPC}_1/\text{PRG}_1 + \text{EPC}_2/\text{PRG}_2 + \dots \text{EPC}_n/\text{PRG}_n\}$$

where

Total risk	=	total carcinogenic risk from exposure to all contaminants (unitless)
EPC <sub>n</sub>	=	exposure point concentration of contaminant n (mg/kg)
PRG <sub>n</sub>	=	PRG for contaminant n (mg/kg)

Cancer risk is expressed as a probability. For example,  $10^{-6}$  translates to an individual excess cancer risk of 1 in 1,000,000. The National Oil and Hazardous Substances Pollution Contingency Plan indicates

"that for known or suspected carcinogens, acceptable exposure levels are generally concentration levels that represent an excess upper bound lifetime cancer risk to an individual between  $10^{-4}$  and  $10^{-6}$ " (EPA 1990). Risks that fall within this range are said to be within the acceptable risk range, and risks below  $1 \times 10^{-6}$  are considered insignificant. Risks above  $10^{-4}$  exceed the acceptable risk range and may indicate the need for further evaluation or remediation. For the purposes of this assessment, the range between  $1 \times 10^{-4}$  and  $1 \times 10^{-6}$  is referred to as the target risk range.

### **Noncarcinogenic Hazards**

For COPCs that are not classified as carcinogens and for those carcinogens known to cause adverse health effects other than cancer, the potential for individuals to develop adverse health effects is evaluated by comparing exposure point concentrations to noncancer PRGs. When calculated for a single chemical, this comparison estimates a hazard quotient and is expressed in the following equation:

$$\text{Hazard quotient} = \text{EPC/PRG}$$

where

PRG = Region IX Preliminary Remediation Goal (mg/kg)

EPC = Exposure point concentration (mg/kg)

To evaluate the potential for noncarcinogenic effects from exposure to multiple chemicals, the hazard quotients for all chemicals are summed, yielding a hazard index as follows:

$$\text{Hazard index} = \text{EPC}_1/\text{PRG}_1 + \text{EPC}_2/\text{PRG}_2 + \dots + \text{EPC}_n/\text{PRG}_n$$

where

$\text{EPC}_n$  = exposure point concentration of contaminant n (mg/kg)

$\text{PRG}_n$  = PRG for contaminant n (mg/kg)

A total hazard of less than 1 indicates that there is no potential for adverse noncarcinogenic health effects. When the total hazard index exceeds 1, further evaluation in the form of a segregation of hazard index analysis is typically performed to determine whether noncarcinogenic hazards are a concern at the site. This approach is taken because the noncarcinogenic effects of chemicals with different target organs

are generally not additive. If any one segregated hazard index exceeds 1, it may indicate that there is potential for adverse noncarcinogenic health effects to occur (EPA 1989).

### **Lead Evaluation**

The PRG for lead does not represent a soil concentration corresponding to a hazard quotient of 1. Therefore, exposure to lead cannot be quantitatively evaluated in the same manner as other chemicals. Instead, the industrial soil PRG for lead is derived by EPA using the "EPA Integrated Exposure Uptake Biokinetic Model" (EPA 1994c). Applying this model, the PRG was calculated as a concentration of lead in soil that corresponds to a blood-lead concentration in an industrial worker not associated with adverse health effects. Blood lead concentrations, expressed in micrograms of lead per deciliter of whole blood ( $\mu\text{g}/\text{dL}$ ), are an integrated measure of an internal dose that reflects exposure from site-related and background sources. The EPA Region IX industrial PRG for lead (1,000  $\text{mg}/\text{kg}$ ) corresponds to a blood-lead concentration in workers of less than 10  $\mu\text{g}/\text{dL}$ , the level of concern (EPA 1994c).

#### **4.2 Risk Assessment Results**

The results of the screening level HIIA for AOC1 are presented in Table 1. For the industrial worker, the carcinogenic risk associated with potential exposure to COPCs in soil ( $5 \times 10^{-5}$ ) is within EPA's target risk range. The chemical risk driver (that is, chemicals associated with a risk greater than  $1 \times 10^{-6}$ ) is arsenic ( $4.9 \times 10^{-5}$ ). The risk for arsenic is based on the maximum detected concentration of 148  $\text{mg}/\text{kg}$ , which was detected at a depth of 1 to 1.5 feet bgs.

The total hazard index is 0.78, indicating no potential for adverse noncarcinogenic health effects at the site. Because the total hazard index was less than the threshold value of 1, segregation of the hazard index was not necessary.

The maximum detected concentration of lead (11,400  $\text{mg}/\text{kg}$ ) is above the EPA Region IX industrial PRG for lead (1,000  $\text{mg}/\text{kg}$ ). Assuming the site is developed for industrial use, the concentrations of lead in soil could result in a blood-lead concentration greater than 10  $\mu\text{g}/\text{dL}$ , the level of concern. Of the 17 samples taken at AOC1, two samples had detected lead levels greater than the industrial PRG.

#### **4.3 Uncertainty Associated with the Risk Assessment**

The risk estimates calculated in this human health risk assessment are subject to varying degrees of uncertainty from a variety of sources. The uncertainties associated with the data evaluation, exposure

assessment, and toxicity assessment will all directly affect the risk characterization.

#### **4.3.1 Data Evaluation and Identification of Chemicals of Potential Concern**

The primary uncertainty associated with the selection process is the possibility that a chemical may be inappropriately identified as a COPC for evaluation in the risk assessment (that is, a detected chemical may be inappropriately excluded or included as a COPC). For AOC1, the only analytes that were excluded from designation as COPCs were inorganic chemicals detected at concentrations below ambient levels and essential nutrients.

#### **4.3.2 Exposure Assessment**

Uncertainties exist in two areas of the exposure assessment process: (1) identification of receptors and (2) the derivation of exposure point concentrations. Uncertainties in each of these areas are discussed in the following text.

##### **Identification of Receptors**

Receptors and exposure scenarios are identified based on observed and assumed land use and activity patterns of the current and future receptors. To the degree that land use and activity patterns are not represented by those assumed, uncertainties are introduced. For example, future land use is assumed to be industrial; however, such an assumption is unlikely since the site was purchased with the intent of providing a safety zone from the ordnance-loading piers. The most likely receptor at AOC1 is base personnel performing occasional surveillance or maintenance activities or a worker performing occasional maintenance activities at the CCWD pump station.

##### **Derivation of Exposure Point Concentrations**

As discussed in Section 2.2, in accordance with DTSC guidelines for screening level risk assessments, the maximum detected concentration was used as the exposure point concentration for each COPC. These exposure point concentrations are likely to overestimate the concentrations and associated risks at the site.

#### **4.3.3 Toxicity Assessment**

The primary uncertainties associated with the toxicity assessment are related to the derivation of toxicity values for COPCs. EPA Region IX used standard toxicity values (RfDs and SFs) to derive the PRGs used

in this risk assessment. The selection of the appropriate toxicity value for chromium depends on the chemical species of chromium that is encountered; hexavalent chromium is a potent carcinogen by the inhalation route, whereas trivalent chromium is not a carcinogen. Chromium occurs primarily in the trivalent form in nature. Trivalent chromium has a more stable oxidation state than hexavalent chromium. Hexavalent chromium is easily transformed to trivalent chromium in reducing environments, such as those found in acidic soils or soils that contain iron or dissolved sulfides. Further, iron and dissolved sulfides in soil will reduce hexavalent chromium to trivalent chromium (Fetter 1993).

Because soil samples collected at AOC1 were not analyzed for hexavalent chromium, total chromium concentrations for each site were compared to the EPA Region IX industrial PRG for chromium (450 mg/kg). This PRG for total chromium assumes that one-sixth of the total chromium is present in the form of hexavalent chromium. This assumption will likely introduce some uncertainty into the risk and hazard estimates.

## 5.0 HUMAN HEALTH RISK ASSESSMENT SUMMARY AND CONCLUSIONS

This risk assessment has been performed as part of a preliminary assessment of AOC1, a parcel of land near the eastern part of the Litigation Area at WPNSUPPFAC, Detachment Concord. It is based on data collected from the site in February 1999. The data were compared to EPA Region IX industrial PRGs, which are equivalent to a cancer risk of  $1 \times 10^{-6}$  or a hazard quotient of 1. COPCs are defined at all detected organic constituents and inorganic constituents detected in excess of ambient concentrations. Total risks and hazards were estimated from chemical concentration and PRG ratios.

Currently, the AOC1 is only accessible to Navy-authorized personnel. There are no current plans for base closure, and the site use is not expected to change in the near future. For this screening-level human health risk assessment, potential carcinogenic risks and noncarcinogenic hazards were calculated based on the ratio of detected contaminant concentrations to industrial PRGs. AOC1 is located within the explosive safety arc from Pier 4 where access and development is restricted; therefore it is highly unlikely that an industrial worker would receive the exposure inherent in the PRG values.

For an industrial worker, the carcinogenic risk ( $5 \times 10^{-5}$ ) from soil and sediment is within the target risk range of  $1 \times 10^{-6}$  to  $1 \times 10^{-4}$ . The chemical risk driver is arsenic. The hazard index is 0.78, indicating no potential for adverse health effects from industrial use of the site.

The maximum concentration of lead (11,400 mg/kg) exceeds the EPA Region IX industrial PRG for lead. Assuming the site is developed for industrial use, the concentrations of lead in soil could result in

an industrial worker blood-lead concentration greater than 10 µg/dL, the concentration of concern. The ← highest concentrations of lead and other metals, including selenium and mercury, appeared to be associated with a discrete layer of cinders found in the interval from 6 inches to 1 foot below grade at various locations throughout the site. If the site is to be developed for industrial use in the future, it is recommended that the layer of cinders containing the highest lead concentrations be removed.

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