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FIELD INVESTIGATION TEAM ACTIVITIES AT UNCONTROLLED HAZARDOUS SUBSTANCES FACILITIES — ZONE I

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SUPERFUND DIVISION

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R-585-10-9-6

SITE INSPECTION OF
GULF OIL - DARBY CREEK TANK FARM
PREPARED UNDER

TDD NO. F3-8906-07
EPA NO. PA-788
CONTRACT NO. 68-01-7346

FOR THE

HAZARDOUS SITE CONTROL DIVISION
U.S. ENVIRONMENTAL PROTECTION AGENCY

AUGUST 10, 1990

NUS CORPORATION
SUPERFUND DIVISION

SUBMITTED BY	REVIEWED BY	APPROVED BY
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Not responsive due to revised scope

Site Name: Gulf Oil - Darby Creek Tank Farm
TDD No.: F3-8906-07

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TABLE OF CONTENTS

SECTION		PAGE
1.0	INTRODUCTION	1-1
1.1	AUTHORIZATION	1-1
1.2	SCOPE OF WORK	1-1
1.3	SUMMARY	1-1
2.0	THE SITE	2-1
2.1	LOCATION	2-1
2.2	SITE LAYOUT	2-1
2.3	OWNERSHIP HISTORY	2-5
2.4	SITE USE HISTORY	2-5
2.5	PERMIT AND REGULATORY ACTION HISTORY	2-5
2.6	REMEDIAL ACTION TO DATE	2-6
3.0	ENVIRONMENTAL SETTING	3-1
3.1	WATER SUPPLY	3-1
3.2	SURFACE WATERS	3-2
3.3	HYDROGEOLOGY	3-3
3.4	CLIMATE AND METEOROLOGY	3-8
3.5	LAND USE	3-9
3.6	POPULATION DISTRIBUTION	3-9
3.7	CRITICAL ENVIRONMENTS	3-9
4.0	WASTE TYPES AND QUANTITIES	4-1
5.0	FIELD TRIP REPORT	5-1
5.1	SUMMARY	5-1
5.2	PERSONS CONTACTED	5-1
5.3	SAMPLE LOG	5-3
5.4	SITE OBSERVATIONS	5-5
5.5	PHOTOGRAPH LOG	
5.6	EPA SITE INSPECTION FORM	
6.0	REFERENCES FOR SECTIONS 1.0 THROUGH 5.0	6-1
7.0	LABORATORY DATA	7-1
7.1	SAMPLE DATA SUMMARY	7-1
7.2	QUALITY ASSURANCE REVIEW	7-2
8.0	TOXICOLOGICAL EVALUATION	8-1
8.1	SUMMARY	8-1
8.2	SUPPORT DATA	8-2

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APPENDICES

A	1.0 QUALITY ASSURANCE SUPPORT DOCUMENTATION	A-1
B	1.0 LABORATORY DATA	B-1
C	1.0 GROUNDWATER INVENTORY SYSTEM	C-1
D	1.0 PENNSYLVANIA NATURAL DIVERSITY INVENTORY FOR TINICUM MARSH	D-1

PLATES

1	FOUR-MILE-RADIUS MAP

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SECTION 1

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1.0 INTRODUCTION

1.1 Authorization

NUS Corporation performed this work under Environmental Protection Agency Contract No. 68-01-7346. This specific report was prepared in accordance with Technical Directive Document No. F3-8906-07 for the Gulf - Oil Darby Creek Tank Farm, located in Darby, Delaware County, Pennsylvania.

1.2 Scope of Work

NUS FIT 3 was tasked to conduct a site inspection of the subject site.

1.3 Summary

The Gulf Oil - Darby Creek Tank Farm is located on the southwestern fringes of Philadelphia, Pennsylvania, in a heavily industrialized setting. The tank farm consists of 37 large crude oil storage tanks on approximately 97 acres. The site is owned and operated by Chevron USA, Incorporated, which merged with Gulf Oil Company in the mid-1980s. Environmental concerns related to the site result primarily from the proximity of the Tinicum National Environmental Center, which is the largest fresh-water tidal marsh remaining in Pennsylvania.

The tank farm has been in operation since the early 1950s. The site was originally a gravel quarry; the excavated areas were filled in before the tank farm was constructed. The primary method of filling the excavated areas was the deposition of waste materials, which were generated from the Gulf Oil Refinery located on the eastern bank of the Schuylkill River. There are three disposal areas on site; each received a different type of waste.

The first disposal area, located near the access gate on the western edge of the site, consisted of a basin or pond that was filled with acid-contaminated catalysts. A thin veneer of soil in this area covers the bedrock. The expected contaminants associated with the catalysts include nickel, molybdenum, and aluminum. Soil sampling, conducted by Dames and Moore in March 1986, revealed lead levels of 52 and 83 ppm. The sample depth was up to five feet.

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The second disposal area is located in the southern-central portion of the tank farm. Waste material, deposited in this area as recently as 1979, consisted of trash and mechanical parts generated from a refinery unit that utilized hydrofluoric acid. Reportedly, the contaminated material was neutralized with caustic soda before disposal; however, records documenting this procedure were not maintained. Soil sampling in this area, conducted by Dames and Moore in 1986, revealed lead levels of 14 and 37 ppm. These samples were also obtained at depths up to five feet.

The third disposal area is located in the eastern-central portion of the facility, adjacent to Darby Creek. The primary waste material deposited in this area consisted of oily dirt generated at the refinery. It is also known that metal wastes, including refrigerators, were landfilled in this area.

During the history of waste deposition at all three sites, there were no access restrictions; it is believed that trash and demolition materials from outside sources were deposited in the tank farm area. No physical evidence of these disposal areas exists. The site has been covered with a mixture of dirt and gravel and graded to a uniform texture.

Concern about past disposal practices at the site has resulted in the drilling of 11 monitoring wells at the site in an effort to assess groundwater conditions. Sampling data are very sparse. In area no. 3 (the oily waste disposal area), it was discovered that the soil was very acidic. More than six inches of raw product were floating on top of the water column in a monitoring well in this area. This well had not been sampled before the site inspection. Chevron is interested in resolving all problems relating to the site once the steps required for remediation are more clearly defined.

There are two CERCLA landfill sites within 1,500 feet of the Gulf Oil - Darby Creek Tank Farm: the Folcroft Landfill (TDD No. F3-8904-43), which is located approximately 1,000 feet southwest of the tank farm, and the Clearview Landfill (TDD No. F3-8904-42), which is located adjacent to Darby Creek, approximately 1,200 feet upstream of the tank farm on the eastern bank of the creek. According to a report prepared by EPA and Gannett Fleming Environmental Engineers, Incorporated as a special report for Tinicum Marsh, contamination occurs at both landfills. The surface soils at the Folcroft Landfill, located within the boundaries of Tinicum Marsh, were found to contain high levels of methylene chloride, vinyl chloride, chloroethane, chlorobenzene, and cyanide, lead, and cadmium. Contaminants detected in soils at the Clearview Landfill included fluoranthene, pyrene, phenanthrene, chromium, and vanadium. A sediment sample located approximately 800 feet downstream from the tank farm contained chromium, lead, and nickel at concentrations that exceeded EPA threshold contaminant concentrations. A surface water sample from the same point contained concentrations of copper and iron that exceeded EPA water quality criteria.

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The Wissahickon Formation provides the bedrock for the site. The oligoclase-mica schist facies of this formation has a low permeability and low porosity. Groundwater movement is expected to occur along fractures, joints, cleavage planes, and bedding-plane separations. A number of large (greater than five acres) wetlands within the three-mile radius of the site are hydraulically interconnected with the shallow bedrock that underlie them and provide discharge points for groundwater. Due to these conditions, the potential for off-site transportation of contaminants is high. The direction of groundwater flow is toward Darby Creek, which is upstream of the Tinicum National Environmental Center.

The Philadelphia Water Company and the Philadelphia Suburban Water Company supply drinking water to residents in the study area. No intakes or wells used by the two water companies are located within the study area.

The Pennsylvania Department of Environmental Resources (PA DER) performed a preliminary assessment at the site on February 18, 1987. NUS FIT 3 performed a non-sampling site reconnaissance on December 7, 1988 and a sampling site inspection on July 11, 1989. During the site inspection, a variety of samples were taken including groundwater, surface water, sediment, subsurface soil, and surface soil samples. A detailed Quality Assurance Review and a Toxicological Evaluation of the sample results from this inspection can be found in sections 7.0 and 8.0, respectively.

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SECTION 2

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2.0 THE SITE

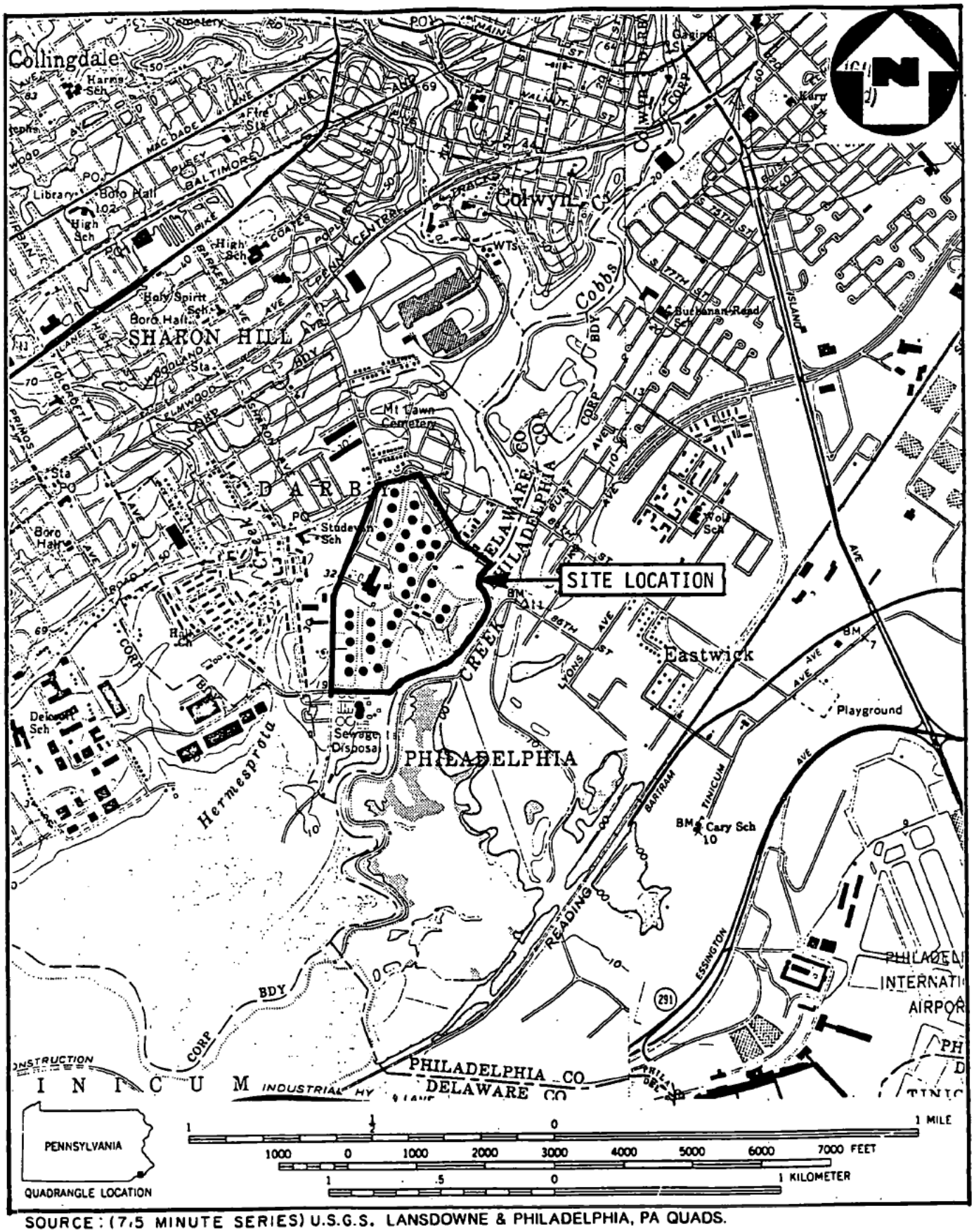
2.1 Location

The Gulf Oil - Darby Creek Tank Farm is located on Calcon Hook and Hook Roads in the southeastern quarter of Darby, Delaware County, Pennsylvania (see figure 2.1, page 2-2). The site can be located 1.9 inches west and four inches north of the southeastern corner of the Lansdowne, Pennsylvania United States Geological Survey (U.S.G.S.) 7.5 minute series quadrangle. The coordinates of the site are 75° 15' 49" west longitude and 39° 53' 50" north latitude.[1,2]

2.2 Site Layout

The Gulf Oil - Darby Creek Tank Farm consists of 37 large crude oil storage tanks located on 97.31 acres (see figure 2.2, page 2-3). The surface of the tank farm consists of dirt and gravel. Each tank is circled by a 12- to 15-foot berm that serves as containment in the event of a spill. Sparse, localized areas of grasses may be seen throughout the site, especially within the tank containment areas, where sediment has accumulated. The brick plant area comprises approximately six acres; access to the plant is gained via an access drive from Calcon Hook Road. The tank farm surrounds the brick plant, except for the access road.[2,3] The site appeared to be well maintained and void of trash.[3]

The western portion of the site is defined by Calcon Hook Road, which separates the tank farm from residential and light industrial areas. The northern boundary of the site is Hook Road. A cemetery and a series of light industrial complexes, including Atlas Recycling and American Sheet Metal Works, lie north of Hook Road. Darby Creek, the eastern boundary of the tank farm, separates the site from open and residential areas. Immediately adjacent to the southern portion of the site is the Darby Borough sewage treatment plant. During the site visit, the FIT observed that the generation ponds at the plant were not in operation (trees were growing in their basins); however, workers were seen in the vicinity of a large, active pump station. South of the pump station and immediately adjacent to the southeastern corner of the tank farm is the boundary for the Tinicum National Environmental Center.[1,3,4,5] Located within the western-central portion of the tank farm is a brick and cement manufacturing plant.



SOURCE: (7.5 MINUTE SERIES) U.S.G.S. LANSDOWNE & PHILADELPHIA, PA QUADS.

FIGURE 2.1

SITE LOCATION MAP

GULF OIL DARBY CREEK TANK FARM, DARBY, PA

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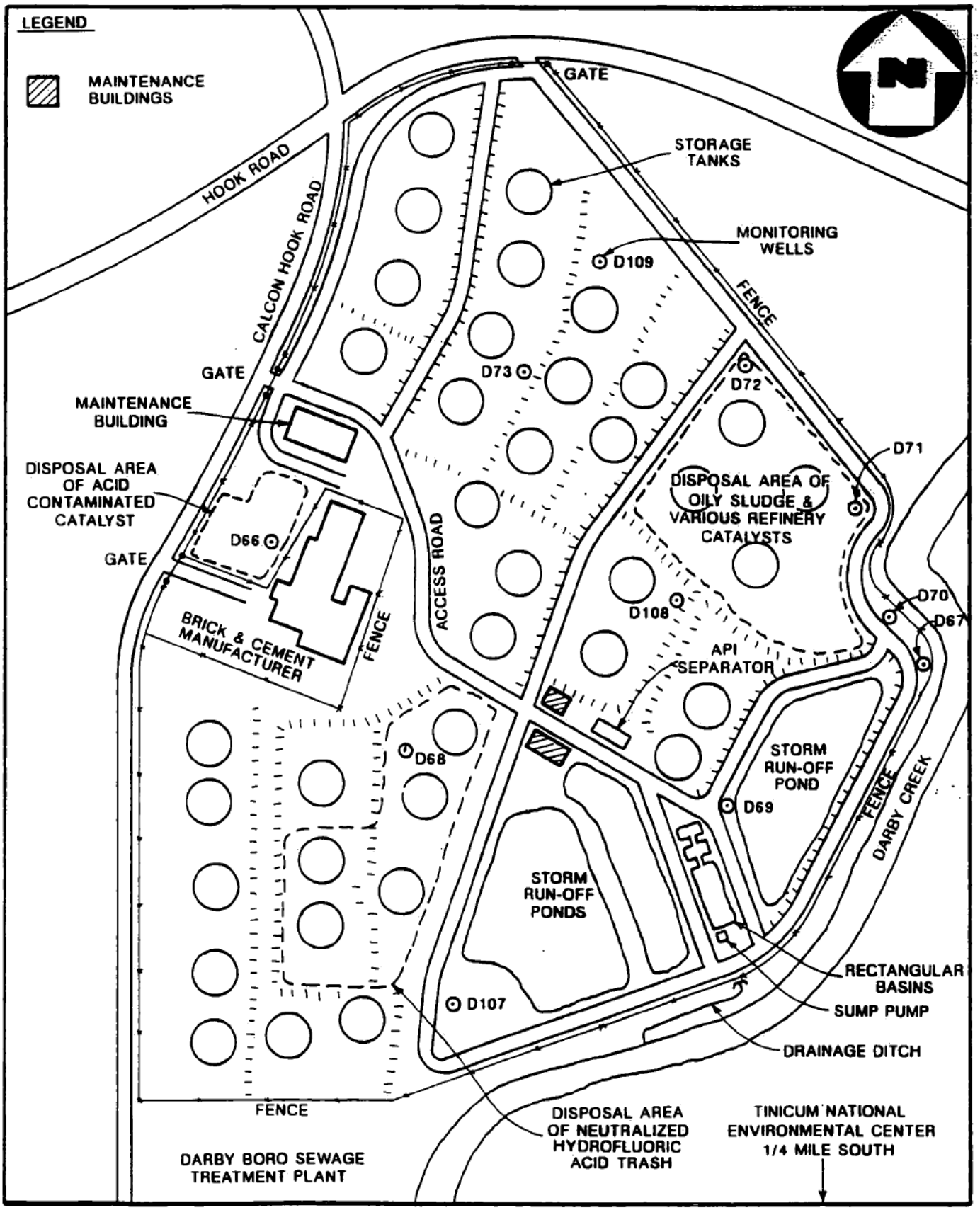

SITE SKETCH

FIGURE 2.2

GULF OIL DARBY CREEK TANK FARM, DARBY, PA

(NO SCALE)

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The tank farm is accessed from Calcon Hook Road. An eight-foot-high, chain-link fence surrounds the site. A sturdy, mechanized gate controls access to the site. The primary control area for the site is housed in a metal building near the main gate. A gravel road heading south from the gate area ends near the acid-contaminated catalyst disposal area. This 200- by 300-foot area was covered by a sparse growth of grasses and contained some areas void of vegetation. From the gate, the access road runs southeastwardly through the center of the tank farm. A number of roads branch off from this main road in order to access the tanks. Many roads constructed on the crests of berms consist of packed gravel.[3,4]

An intersection is approximately 1,600 feet from the entrance gate on the main road. West-southwest of this intersection is the area in which neutralized hydrofluoric-acid-contaminated debris was disposed. This area, now occupied by storage tanks, is approximately 900 by 300 feet in size.[3,4] Southeast of the intersection are two buildings that serve as maintenance buildings. A rectangular concrete pit, located near the buildings on the northern side of the access road, contains the API separator. The API separator removes the oil component from unwanted water that accumulates in the storage tanks. The separator is connected to a series of rectangular basins located in the southeastern part of the site, near Darby Creek. A sump pump associated with the basins pumps water from the basin to a drainage ditch that outfalls into Darby Creek. Also located in the southeastern portion are two large storm runoff ponds. These ponds are maintained primarily for fire-fighting purposes. The southwesternmost pond is divided by a berm. A number of fairly large trees and bushes were observed growing on the banks of the pond; wildlife, including frogs and turtles, was also noted.[3]

In the spring of 1986, Dames and Moore installed 11 monitoring wells throughout the tank farm. These are shown in figure 2.1. While only seven monitoring wells were sampled by NUS on July 11, 1989, reportedly, all could be sampled.[3]

Approximately 450 feet north-northeast of the API separator building is the area where oily sludge and various refinery catalysts were disposed. This area is approximately 500 by 600 feet in size and is occupied by 4 storage tanks. Monitoring well D-71 (MW-D71), in the eastern portion of this area, contained more than two feet of crude oil at the top of the water column at the time of the site visit.[3,4,6]

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2.3 Ownership History

The Gulf Oil - Darby Creek Tank Farm is currently owned by Chevron Corporation, which merged with Gulf Oil Company in 1985. A storage tank farm has been in operation at some portion of the site since the early 1950s, presumably under the ownership of Gulf Oil. Before 1950, the site was used as a rock quarry; the owner/operator is not known.[4,6]

2.4 Site Use History

The Gulf Oil - Darby Creek Tank Farm is currently owned and operated by Chevron USA, Incorporated. Chevron uses the tank farm to temporarily store crude oil that is pumped underground from the Hog Island wharf in Tinicum Township, Delaware County, Pennsylvania. After crude oil is stored at the tank farm, it is pumped underground to the Chevron - Philadelphia refinery facility, located 2.5 miles east of the site on the eastern bank of the Schuylkill River.[1,6]

Portions of the tank farm began operating in the early 1950s. Before 1950, rock-quarrying activities left excavated areas in the land surface. Gulf Oil filled in the excavations, including any natural ponds or wetlands, with waste material generated by the Gulf - Philadelphia refinery (now Chevron). Three primary fill areas, each receiving different wastes, were utilized from approximately 1949 until approximately 1980. The first fill area is located just south of the access gate; the primary waste material deposited consisted of acid-contaminated catalysts. The second area is located in the south-central region of the site; primarily neutralized hydrofluoric acid trash was deposited in this area. The third area, located in the east-northeastern portion of the site, received oily sludge and various refinery catalysts. Due to the lack of access restrictions at the site, it is possible that, in addition to waste generated from the refinery, the disposal areas received wastes from off-site sources. As the excavations and depressions were filled, they were eventually covered with dirt and graded to create additional storage tank areas.[2,4,6]

2.5 Permit and Regulatory Action History

The Gulf Oil Chemical Company filed a Notification of Hazardous Waste Site Form on June 5, 1981. This form identified three sites on the property that received industrial wastes generated by the oil refinery. The form also indicated that the disposal areas were utilized between 1963 and 1987, which corresponds to the period in which Gulf Oil maintained records. Information based on employees' knowledge dated back to 1950.[7]

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Gulf Oil submitted the Part A Hazardous Waste Permit Application in August 1981 and received its permanent identification number (PAD980555254) in December 1981.[8,9] Chevron/Gulf Oil maintains its identification number due to the nature of its industry, although hazardous wastes are not currently generated at the Darby Creek Tank Farm.[10]

The tank farm has an NPDES permit (PA0011541) for the discharge of two storm runoff ponds into Darby Creek and four air quality permits (23-312-086, 23-312-117, 23-312-18, and 23-302-073).[4]

On March 5, 1986, Dames and Moore, Incorporated, environmental consultants for Chevron Corporation, conducted subsurface soil sampling to a depth of five feet for lead in two disposal areas: the acid-contaminated catalyst area and the hydrofluoric-acid-contaminated trash area. The analysis revealed levels of 52 and 83 ppm in the acid-contaminated catalyst area; levels of 14 and 37 ppm were identified in the hydrofluoric-acid-contaminated trash area. On February 18, 1987, PA DER conducted a preliminary assessment of the site. NUS FIT 3 conducted a non-sampling site reconnaissance on December 7, 1988 and a sampling site inspection on July 11, 1989. During the site inspection, a variety of samples were taken, including groundwater, surface water, sediment, subsurface soil, and surface soil samples.[2,3,4]

2.6 Remedial Action to Date

The Chevron/Gulf Oil - Darby Creek Tank Farm has not undergone remedial work in the past. At some point following the closure of the area in which oily sludge and various refinery catalysts were deposited, Chevron/Gulf Oil removed four 35-cubic-yard roll-off dumpsters of contaminated soil and apparently replaced the soil with clean fill.[6]

As a result of concerns about past disposal practices at the tank farm, an environmental assessment has been initiated at the site by Chevron. Eleven monitoring wells were installed at the site in the spring of 1986 in an effort to determine the quality of the groundwater. Sample data prior to the FIT 3 site inspection are scarce. Chevron is currently awaiting guidance from EPA to determine the degree (if any) of remedial work necessary at the tank farm.[4,6]

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SECTION 3

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3.0 ENVIRONMENTAL SETTING

3.1 Water Supply

Residents within the three-mile radius of the site obtain their water from three public suppliers.

The Philadelphia Suburban Water Company (PSWC) supplies water to residents living west of Cobbs Creek, including Lansdowne, Yeadon, Upper Darby, Darby, Aldan, Collingdale, Colwyn, Sharon Hill, Folcroft, Norwood, Prospect Park, Ridley, and Ridley Park. PSWC has no sources within a four-mile radius of the site, and no PSWC surface water sources are located downstream of the site. The surface sources are (b) (9) [redacted]. PSWC has 24 groundwater wells in Chester County, 15 wells in Montgomery County, and a vertical, groundwater-fed reservoir in Upper Merion, Montgomery County. PSWC serves approximately 833,997 people (219,473 service connections times 3.8 persons per connection) and has an average daily sendout of 88 million gallons.[1,11]

The City of Philadelphia Water Department (CPWD) supplies water to all residents in the study area east of Cobbs Creek, including Eastwick, Elmwood, and Philadelphia. CPWD utilizes three surface water intakes to obtain its water. The Baxter Treatment Plant (formerly the Torresdale Treatment Plant), at (b) (9) [redacted] nd upstream of the site. The Baxter Plant's daily intake is about 200 million gallons per day (mgd). The Queenlane Treatment Plant, (b) (9) [redacted] of the site. The Queenlane Plant's daily intake is about 60 mgd. The Belmont Treatment Plant, at (b) (9) [redacted] of the site. The plant's daily intake is about 50 mgd. Both the Queenlane and Belmont Treatment Plants are in a separate drainage basin from the site. CPWD's system is integrated. An estimated 1.7 million inhabitants of Philadelphia County receive water from CPWD.[1,12]

The Borough of Paulsboro (BP) supplies water to approximately 6,900 persons in Paulsboro, New Jersey and surrounding communities south of the Delaware River. BP utilizes three groundwater wells, all completed in (b) (9) [redacted] Well no. 5, located (b) (9) [redacted] Well no. 4, located (b) (9) [redacted] Well no. 6, located (b) (9) [redacted]. BP stores water in an elevated storage tank (300,000-gallon capacity) and a standpipe (1.5-million-gallon capacity).[13]

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No domestic wells are located within the three-mile radius of the site.[2]

A total of 26 representative wells in Philadelphia County within the 3-mile radius of the site were completed in the Trenton Gravel (see appendix C). These wells are 2 to 12 inches in diameter, range in total depth from 23 to 106 feet (median depth of 40 feet), and are cased between 10 and 41 feet (median cased depth of 20 feet). Static water level ranged from 8.5 to 19.45 feet, and yields ranged from 7 to 250 gallons per minute (gpm), with a median yield of 20 gpm. It is likely that many of these wells are no longer in service because of increasing urbanization of Philadelphia County.[14]

A total of seven representative wells in Philadelphia County within the three-mile radius were completed in the Potomac-Raritan-Magothy aquifer (see appendix C). These wells are 4 to 10 inches in diameter, range in total depth from 78 to 130 feet (median depth of 100 feet), and are cased between 68 and 125 feet (median cased depth of 95 feet). Static water level ranged from 11.08 to 20.63 feet, and well yields ranged from 20 to 870 gpm, with a median yield of 50 gpm.[14]

3.2 Surface Waters

Runoff from the Darby Creek Tank Farm accumulates within the bermed areas of the tank farm, where it migrates to groundwater or evaporates, or flows on the surface in a southeastward direction, accumulating in two storm runoff ponds. This water is maintained by Chevron for fire fighting. Any overflow from the ponds is discharged into Darby Creek. Darby Creek flows southwestwardly and joins Cobbs Creek, Muckinipattis Creek, Thoroughfare Creek, and Hermesprota Creek as the major streams forming the Tinicum watershed (in which the Tinicum National Environmental Center is located.) Tinicum National Environmental Center is approximately 3,000 feet southwest of the tank farm. Tidal influence extends up Darby Creek to the confluence of Cobbs and Darby Creeks. This confluence is located approximately 4,000 feet north of the tank farm.[1,3,5,6,15] There is sufficient stream velocity in Darby Creek to cause scouring of contaminated sediments.[5]

From Darby Creek Tank Farm, Darby Creek meanders approximately 5.3 miles through swamps and open water to its convergence with the Delaware River. The Delaware River flows southwardly for approximately 40 miles to the Delaware Bay.[1]

The Tinicum National Environmental Center receives runoff from the tank farm via Darby Creek. The Tinicum National Environmental Center is a 1,200-acre national wildlife refuge area administered by the United States Department of the Interior, Fish and Wildlife Service. Approximately 350 acres of tidal marsh are located within the refuge area, which houses diverse plant and wildlife populations, some listed as rare or threatened by the commonwealth of Pennsylvania. The center is also a tourist attraction where people engage in outdoor recreational activities.[5]

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3.3 Hydrogeology

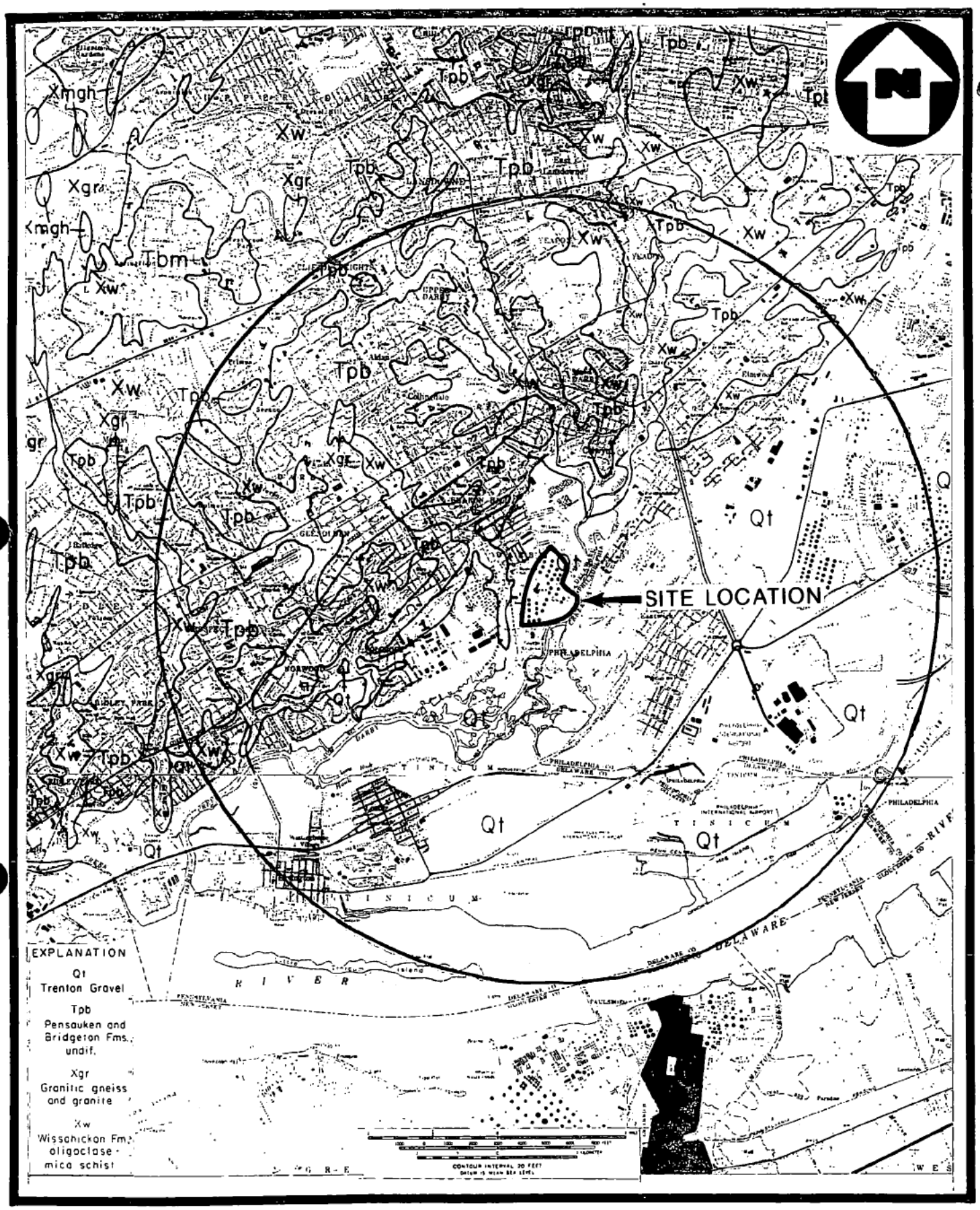
The geologic and hydrogeologic conditions in the study area were researched as part of the site inspection. A preliminary literature review was conducted to determine surface and subsurface geologic conditions, soil character, and the status of groundwater transport and storage.

3.3.1 Geology

The Gulf Oil - Darby Creek Tank Farm site is located within the Atlantic Coastal Plain Province of southeastern Pennsylvania.[16] The geologic framework of the Coastal Plain consists of underlying, gently southeastward-dipping, unconsolidated marine and fluvial deposits of clay, silt, sand, and gravel of late Cretaceous and Tertiary age. Areas are also covered by interglacial fluvial deposits of Quaternary (Pleistocene) age.[17] In addition, there are exposures of Precambrian age basement rock, primarily in the stream valleys.[18] The study area has a dendritic drainage pattern.[17]

The site is underlain by the Quaternary age Trenton Gravel (see figure 3.1, page 3-4).[18] The Trenton Gravel is a gray to pale reddish-brown, medium- to coarse-grained, very gravelly sand. There are also interbedded clay-silt and crossbedded sand layers.[16,17,19] The formation occurs chiefly and is most continuous in the lowland along the Delaware River from Trenton to the Atlantic Ocean.[17] It is believed to be the equivalent of the Cape May Formation of New Jersey.[19] The youngest of the interglacial formations, the Trenton Gravel has been correlated with the Sangamon interglacial stage (approximately 300,000 years ago). The Trenton Gravel was part of an estuarine-deltaic-marine depositional environment driven and supplied by meltwater and sediment derived from retreating glaciers.[17] Its thickness is approximately 30 to 40 feet.[16,19]

Although not exposed in the study area, the Cretaceous age Potomac Group and Raritan Formation underlie the Trenton Gravel and the Pensauken/Bridgeton Formations throughout the study area. These geologic units make up the important Potomac-Raritan-Magothy aquifer, a major water supply source for residents of New Jersey. In the Delaware Valley, Raritan age sediments are indistinguishable from the underlying Potomac Group. The aquifer has been subdivided into the following units: upper clay, upper sand, middle clay, middle sand, lower clay, and lower sand.[14] This nomenclature is equivalent to earlier terminology of upper clay, Old Bridge sand member, middle clay member, Sayreville sand member, lower clay member, and Farrington sand member. Where present, the clay layers function as confining beds (aquitards). Some researchers believe the Old Bridge sand member should be assigned to the Magothy Formation (a formation that overlies the Raritan Formation in New Jersey). This suggests that the Potomac Group and the Raritan and Magothy Formations would function as one hydrologic unit in the southern Coastal Plain of New Jersey.[20]



SOURCE: ATLAS OF PRELIMINARY GEOLOGIC QUADRANGLE MAPS OF PENNSYLVANIA

FIGURE 3-1

GEOLOGIC MAP

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GULF OIL DARBY CREEK TANK FARM SITE

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The upper clay of the Potomac-Raritan-Magothy aquifer is chiefly a red, white, gray, and yellow clay. It has a maximum thickness of 35 feet; however, it has a limited areal extent. The upper sand is a medium- to coarse-grained sand with minor amounts of very fine- to fine-grained sand. This sand has a thickness of 35 to 55 feet and commonly forms a single, unconfined aquifer with the overlying Trenton Gravel.[16]

The middle clay unit consists of red and white clay and is commonly about 20 feet thick. The middle sand unit is chiefly a brown, yellow, white, and gray, coarse-grained sand and gravel with a maximum thickness of 25 feet.[16]

The lower clay unit consists of brick red and gray clay that is approximately 25 to 40 feet thick. Often when the middle sand unit is absent, the lower and middle clay units merge to form a thick (47 to 60 feet) confining bed. The lower sand unit consists predominantly of coarse-grained sand and fine gravel that grade upward into medium- to fine-grained sand containing a few beds of white clay. The lower sand can range in thickness from 11 to 120 feet.[16,20]

Stratigraphically older than the Trenton Gravel and cropping out throughout the three-mile radius of the site are the Pensauken and Bridgeton Formations (undifferentiated).[18] The stratigraphically younger of the two units, the Pensauken Formation is a yellow to dark reddish-brown, extensively crossbedded cemented sand.[19] It contains interbedded coarse-grained gravels composed mostly of quartz, quartzite, and chert in addition to pebbles and cobbles of shale, sandstone, and crystalline rocks eroded from Mesozoic to Precambrian age formations.[17,19] The Bridgeton Formation is a yellow, white, or irregularly stained reddish to orange brown, extensively crossbedded clayey sand. Locally, beds of gravel composed of vein quartz, chert, and quartzite are present.[19] The presence of horizontal gravel beds, crossbedding in the sands, and lenses of gravel suggest a fluvial paleoenvironment for these formations.[17] Both formations have a maximum thickness of 30 feet.[19]

Stratigraphically older than the Potomac Group and Raritan/Magothy Formations and cropping out in stream channels throughout the three-mile radius of the site is the Precambrian or Lower Paleozoic age (actual age is uncertain) Wissahickon Formation.[18] The facies present in the study area is an oligoclase-mica schist, a finely plicated, medium-grained dark gray rock composed of biotite, muscovite, and quartz with a variable amount of feldspar and chlorite. Distinct veins of quartz are interbanded in the schist, and cleavage/jointing are conspicuous.[21,22] Because of the intense folding and lack of recognizable recurrent beds, the thickness of the Wissahickon is not known (estimated thickness ranges from 8,000 to 10,000 feet).[21]

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Cropping out two miles northwest of the site are the Precambrian age granitic gneiss and granite.[18] This rock unit is light buff to light pink and fine to medium grained. It is composed of quartz, microcline, hornblende, and some biotite. Its thickness is unknown.[19]

3.3.2 Soils

Soil disturbance on site consisted of the excavation and construction of large oil storage tanks, resulting in the destruction of the native soil profile.[3]

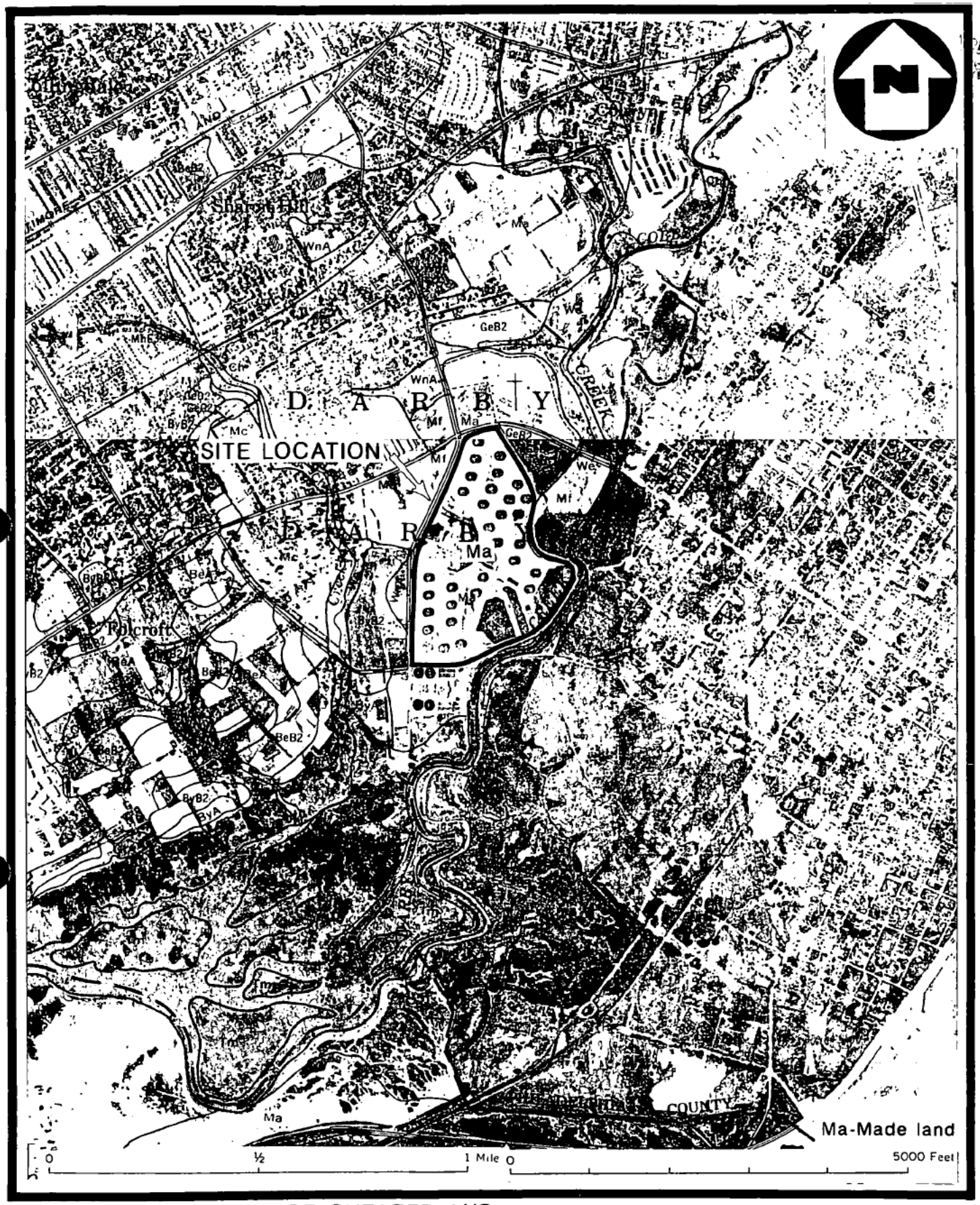
The site is underlain by Made land soils (see figure 3.2, page 3-7). This soil type (Ma) consists of areas where the profile of the normal soil has been destroyed by industrial development. The soil materials consist of sand, gravel, and clay in various mixtures, but gravelly materials predominate. Soil characteristics are so variable that permeability and pH were not determined.[23]

3.3.3 Groundwater

The Trenton Gravel, the aquifer underlying the site, has a high porosity and high permeability.[19] In adjacent Philadelphia County, wells in the Trenton Gravel (some of which have been shut down due to the increasing urbanization of the county) range in total depth from 17 to 300 feet (median depth is 51 feet). These wells are cased between 10 and 88 feet (median cased depth is 48 feet) and have yields ranging between 10 and 400 gpm, with a median yield of 100 gpm. The Trenton Gravel is hydraulically interconnected to the other rock units in the study because of their relatively similar lithologies and the sporadic continuity of the clay confining layers.[16]

The sand units within the Potomac-Raritan-Magothy aquifer have a high porosity and high permeability. The upper sand forms a hydraulically continuous unit with the Trenton Gravel and thus functions as a single aquifer (see data on the Trenton Gravel). The middle sand has a yield range of 90 to 775 gpm and a specific capacity range of 2 to 36 gpm per foot. A total of 136 wells in the lower sand have a yield range of 30 to 1,350 gpm and an average yield of 400 gpm. Specific capacity of the lower sand ranges from 4 to 37 gpm per foot.[16]

The Pensauken and Bridgeton Formations have a high porosity and a moderate to high permeability.[19] The gravels are the main source of groundwater in these formations, even though they tend to be thin and irregularly distributed. Maximum reported yields from the Pensauken and Bridgeton Formations range from 1,200 to 7,000 gpm.[16]



SOURCE: SOIL SURVEY OF CHESTER AND DELAWARE COUNTIES, PENNSYLVANIA

FIGURE 3-2

SOILS MAP

NUS CORPORATION

GULF OIL DARBY CREEK TANK FARM SITE

ORIGINAL (Red)

The oligoclase-mica facies of the Wissahickon Formation has a low permeability and a low porosity.[19] Groundwater movement is principally along fractures, joints, cleavage planes, and bedding-plane separations. In the Coastal Plain region, reported yields range from 1 to 350 gpm and average 65 gpm.[16] More well data exist for this aquifer in Chester County in the Piedmont Physiographic Province (west of the site). A total of 115 wells have a total depth range of 48 to 400 feet (median total depth is 112 feet). Sixty-seven wells have a casing depth range of 10 to 157 feet (median casing depth of 40 feet), and 20 wells have a specific capacity range of 0.06 to 8.4 gpm per foot (medium specific capacity of 0.4 gpm per foot). Lastly, 77 wells have a yield range of 0 to 350 gpm, with a median yield of 10.5 gpm.[21]

Granitic gneiss and granite have a low permeability and low porosity.[19] Well yields are usually obtained from the fractured, weathered zone at the top of bedrock, where the median yield is 20 gpm.[21]

There are more than five acres of wetlands within the three-mile radius of the site.[24] These wetlands are hydraulically interconnected with the shallow bedrock of the formations that underlie them and serve as discharge points for groundwater.

Beneath the northern half of the site, the direction of groundwater flow is to the east to southeast. Beneath the southern half of the site, the flow is more to the south. All components of flow, however, are toward Darby Creek. Flow direction is based upon groundwater-table elevations measured from monitoring wells.[2]

3.4 Climate and Meteorology

The study area experiences a humid continental climate, which is moderated as a result of the proximity of the Appalachian Mountains to the west and the Atlantic Ocean to the east. Weather conditions change fairly rapidly; sustained periods of very high or very low temperatures are rare. The mean annual temperature for the study area is 54.6°F, and annual precipitation averages 41.38 inches.[25] The mean annual lake evaporation for the study area is 35 inches; therefore, the net precipitation is approximately 6.4 inches. The 1-year, 24-hour rainfall is 3.25 inches.[26]

ORIGINAL (Red)

3.5 Land Use

The areas to the west, north, and south around the Darby Creek Tank Farm consist primarily of developed land. In the immediate vicinity of the site, light industry and small businesses are concentrated; farther from the site are residential areas that support large populations. There are some open areas east of Darby Creek.[1,2,3]

The Tinicum National Environmental Center, a 1,200-acre national wildlife refuge area administered by the United States Fish and Wildlife Service, is 1/4 mile south of the site. Approximately 40,000 people visit the site annually; activities at the site include hiking, canoeing, fishing, and nature photography and observation. Snapping turtles have been commercially harvested there in the past.[1,5]

3.6 Population Distribution

Approximately 6,880 people reside within 1 mile of the Darby Creek Tank Farm. Approximately 50,505 people live between 1 and 2 miles of the site, and 121, 241 people live between 2 and 3 miles of the site. Therefore, there are approximately 178,626 people residing within a 3-mile radius of the site. These figures are based on the populations of neighboring communities and census tract data from the United States Bureau of the Census.[1,27,28]

3.7 Critical Environments

The bald eagle and the peregrine falcon are two federally listed endangered birds that are expected to be found as transient species in the project area; however, there is no listed critical habitat for these species in the project area.[29]

ORIGINAL
(Red)

The shortnose sturgeon is an endangered fish under the jurisdiction of the National Marine Fisheries Service; it is found in the Delaware River, which converges with Darby Creek approximately five miles downstream from the site. The shortnose sturgeon has been observed in the Tinicum marshland, which is 1/4 mile south of the tank farm. Additional species of concern include the following birds: American bittern (Botauws lentiginosus), least bittern (Ixobruchus exilis), black-crowned night heron (Nycticorax nycticorax), yellow-crowned night-heron (Nycticorax violaceus), northern harrier (Circus cyaneus), king rail (Halius elegans), Virginia rail (Rallus limicola), barn owl (Tyto alba), short-eared owl (Asio flammeus), sedge wren (Cistothorus platensis), and marsh wren (Cistothorus palustris). Other species include the southern leopard frog (Rand utricularia), redbelly turtle (Pseudemys rubriventris), eastern mud turtle (Kindsternon subrubrum), and bronze copper (snake) (Hyllolycaena hyllus). The following plants are found in Tinicum Marsh: waterhemp ragweed [Amaranthus cannabinus (L.) saver], river bullrush [Scirpus fluviatilis (torr.) gray], Barratt's sedge (Carex barratii schw. and torr.), indian wild rice (Zizania aquaticu L.), slender blue iris (Iris prismatica pursh), and bayonet rush (Juncus militaris bigell). [5,29]

Darby Creek, Cobbs Creek, Muckinipattis Creek, Thoroughfare Creek, and Hermesprota Creek form the Tinicum watershed; PA DER has designated these streams as protected. A warm-water fishery is located in the vicinity of the Tinicum National Environmental Center. The majority of the Tinicum National Environmental Center is classified as a variety of wetland environments, including palustrine emergent narrow-leaved, persistent, riverine tidal flat regular, and lacustrine limnetic open water.[5,30] The two storm runoff ponds are included on the National Wetlands Inventory Map; they are classified as palustrine unconsolidated bottom, semi-permanent, and palustrine, open water, intermittently exposed, permanent.[4,5,30]

ORIGINAL
(Red)

SECTION 4

ORIGINAL (Red)

4.0 WASTE TYPES AND QUANTITIES

Chevron USA reports that it has not generated hazardous wastes at the Darby Creek Tank Farm in the past. EPA, however, states that the waste produced (approximately 80 tons of API separator sludge annually) is hazardous based on the premise that chromium and lead are used in the refining process.[8] In a letter to PA DER in August 1984, Gulf Oil contested the aforementioned conclusion. Gulf argued that the tank farm was sufficiently removed from the refining process, thereby eliminating any potential sources of lead or chromium contamination.[31]

Information relating to the deposition of refinery wastes in the three areas on the tank farm is scarce and suspect. Gulf Oil estimated that 800 tons of waste materials were deposited on site (before the construction of the tank farm). It is not known for how long this waste disposal occurred or how Gulf Oil arrived at this estimate; however, the site had been closed as a landfill for approximately 10 years when this waste quantity value was determined.[7] Gulf Oil-Darby Creek has at no time in the past landfilled any waste on site; the 80 tons of sludge generated annually are shipped off site.[4,7,31]

Because the site is easily accessible, it is probable that each disposal area received wastes other than those reported.

The area just south of the gate reportedly received acid-contaminated catalysts, which were deposited to fill in a basin or a pond. The metals associated with the catalysts were primarily nickel, molybdenum, and aluminum but may have also included vanadium, platinum, and palladium.[4,7]

A second area, located in the south-central portion of the site, received hydrofluoric-acid-contaminated trash from a unit at the refinery that utilized the acid in its processes. Disposal of this waste material occurred until 1979. The contaminated material was reportedly neutralized with caustic soda prior to disposal; however, documentation of this process does not exist.[4]

The final disposal site lies in the east-central portion of the facility. This area was used primarily to dispose oily dirt generated at the refinery. Raw oil was observed on top of the water in a monitoring well column in this disposal area. Metal wastes, such as refrigerators, were also landfilled in this area.[4]

ORIGINAL
(Red)

SECTION 5

ORIGINAL (Red)

5.0 FIELD TRIP REPORT

5.1 Summary

On Tuesday, July 11, 1989, NUS FIT 3 personnel Nonresponsive based on revised scope Nonresponsive based on revised scope conducted a site inspection of the Gulf Oil - Darby Creek Tank Farm site, located in Darby Township, Delaware County, Pennsylvania. The weather at the time of the inspection was sunny, with temperatures in the 80s.

Thirteen solid and 21 aqueous samples were collected, including blanks, duplicates, and 8 filtered monitoring well samples (see figure 5.1, page 5-4). Split samples were obtained and delivered to Mike Manigly, of Chevron USA, Incorporated, upon his request. Split samples could not be provided for each sample location because of the inadequate quantity of bottleware provided by Chevron. Photographs were taken during the site inspection (see figure 5.2, page 5-7, and the photograph log, section 5.5).

5.2 Persons Contacted

5.2.1 Prior to Field Trip

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P.O. Box 7408
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Karen Graham
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Eric Schneider
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Bernice Pasquini
Site Investigation Officer
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Ninth and Chestnut Streets
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5.2.2 At the Site

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Jim Tucker
Environmental Specialist
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ORIGINAL (Red)

5.2.3 Post Site Visit

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[redacted]
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Bernice Pasquini
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Ninth and Chestnut Streets
Philadelphia, PA 19107
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5.2.4 Water Supply Well Information

Residents within the study area are supplied water by the City of Philadelphia Water Department and the Philadelphia Suburban Water Company. Those residents living east and southeast of the site are supplied water by the City of Philadelphia Water Department, which serves approximately 273,973 residents. The remainder of the residents in the study area, approximately 128,052 persons, rely on the Philadelphia Suburban Water Company for their drinking water supplies. No intakes or wells used by the two water companies are situated within the study area.

TDD NUMBER F3-5906-07

EPA NUMBER PA-798

5.3 SAMPLE LOG

SITE NAME Gulf Oil Darby Creek Tank Farm

TRAFFIC REPORTS Organic	Inorganic	High Hazard	SAMPLE IDENTIFIER	PHASE	SAMPLE DESCRIPTION	SAMPLE LOCATION	TARGET USE	pH	FIELD MEASUREMENTS
CCM3~~3~~4	–		Solblk	Aq	Solid Blank				
CCM32	MCBD23		S-0	Sol	Background sample medium brown soil. A minor clay constituent.	Sample location in cemetery north of the site. 150 yds east of Hook Rd. 40 feet north of fence			No HNU or mini-alert readings above background.
CQ623	MCQ102		S-1	Sol	Auger sample, composite 1-2 feet. 0-1 feet brown soil fine to medium. At 2 feet fine gr. dk blk.	Sample location in the middle of the disposal area for acid contam. catalyst.	Direct contact threat. HNU hits with depth may indicate downward migration of contaminants to ground water		No mini alert reading HNU at 10 ppm @ 1 foot 5 ppm @ 2 feet before dissipation.
CQ624	MCQ103		S-2	Sol	Auger soil sample. Brown grey to brown mix, sandy, pebbles, bricks, + fragments of debris	Sample located in the southern corner of the area for acid contam. catalyst.	Direct contact threat. Greatest possible threat is downward migration to gwater... conf. basis		No reading, mini alert HNU reading of 5 ppm @ 1 foot prior to dissipation
CP743	MCN244		S-3	Sol	Auger sample 0-14" Dark brown silt loam-fill material. Oily smell noted.	Sample located in the area of oily sludge and various refinery catalyst disposal 100' south of monitoring well D-71.	Direct contact threat. possible threat to gwater.		
CP744	MCN245		S-4	Sol	Dark brown sandy material Pebbles and broken bricks in sample. Surface sample	Sample located in north-eastern corner of the disposal area for acid contaminated catalyst.	Direct contact threat to employees. The site has restricted access.	-	No HNU or mini-alert readings above background
CN938	MCP961		S-5	Sol	Surface soil sample, light to dark brown, sandy, some organics.	Sample located in the western corner of the disposal area for acid contaminated catalyst.	Direct contact threat to employees. Access to the site is restricted.		No HNU or mini-alert readings above background
CCM26	MCBD17		SD-1	Sol	Downstream sample on Darby Creek. Dark Brown, silty clay.	Sample located at the southeastern part of the site, on the west bank of Darby creek, Approx. 20' south of property line	Direct contact threat. Possible surface water threat to Darby Creek.		No HNU or mini-alert readings above background.
CCM27	MCBD18		SD-2	Sol	Duplicate of SD-1	"	"		"

ORIGINAL (Red)

SAMPLE LOG

TDD NUMBER F3-9906-07

EPA NUMBER PA-798

SITE NAME Gulf Oil Darby Creek Tank Farm

TRAFFIC REPORTS Organic	Inorganic	High Hazard	SAMPLE IDENTIFIER	PHASE	SAMPLE DESCRIPTION	SAMPLE LOCATION	TARGET USE	pH	FIELD MEASUREMENTS
CCM28	MCBD19		SD-3	Sol	Upstream sample location Darby Creek, light to dark brown, sandy, micaceous.	Sample obtained on the west bank of Darby Creek Northeast of the northern site boundary	Direct contact threat is minimal from on-site contaminants.		No mini-alert or HNU Readings above background recorded
CCM29	MCBD20		SD-4	Sol	Northwestern section of northeasternmost pond tannish brown, sandy, pebbly.	Northwestern section of northeasternmost pond (storm run-off pond).	Possible direct contact threat to employees. Possible surface water contamination in pond.		"
CCM30	MCBD21		SD-5	Sol	northwestern section of southern run-off pond - sediment is tan, silty loam, contains pebbles.	Northwestern section of southwestern run-off pond.	Possible direct contact threat to employees. Possibility of surface H_2O contamination in pond.		No mini-alert or HNU readings above background
CCM31	MCBD22		SD-6	Sol	Brown to dark brown, sandy, micaceous, pebbly.	Sample obtained in drainage ditch which channels the outfall from the runoff ponds to Darby creek	Possible direct contact threat but access is limited to employees		No mini-alert or HNU readings above background
CCM33	MCBD24		AqBlk	Aq	Aqueous Blank			6.68	Conductivity 0.00 x 100 µ
CW504	MCW073		MW-66	Aq	Oily sheen on surface	Monitoring well located in the middle of the disposal area for acid contaminated catalyst.	Potential Groundwater contamination	6.18	No mini-alert or HNU readings above background conductivity = 9.93 x 100 µ
CCM17	MCBD00		MW-67	Aq	Cloudy, much suspended particulates, no odor.	Monitoring well located in the east-central portion of the site adjacent to darby creek.	Potential Groundwater contamination	5.99	No mini-alert or HNU readings above background conductivity = 6.00 x 100 µ
CW505	MCW074		MW-68	Aq	Clear, no odor	Monitoring well located in area designated as disposal area of neutral hydrofluoric acid trash, Near center of site	Potential Groundwater contamination	6.25	No mini-alert or HNU readings above background conductivity = 6.04 x 100 µ
CN939	MCP962		MW-69	Aq	Clear, no odor.	Monitoring well located in southeastern portion of site in an area near both storm run-off ponds	Potential groundwater contamination.	6.32	No mini-alert or HNU readings above background. conductivity = 7.24 x 100 µ

ORIGINAL

SAMPLE LOG

TDD NUMBER F3-9406-07

EPA NUMBER PA-799

SITE NAME Gulf Oil Darby Creek Tank Farm

TRAFFIC REPORTS Organic	Inorganic	High Hazard	SAMPLE IDENTIFIER	PHASE	SAMPLE DESCRIPTION	SAMPLE LOCATION	TARGET USE	pH	FIELD MEASUREMENTS
CCM18	MCBD01	✓	MW-71	Aq	Black oil on top of sample. Two phased was shipped high hazard.	Monitoring well is located on the north-eastern portion of the site near Darby Creek	Groundwater contam.		No mini alert above bckgnd HNU 15 ppm
CCM19	MCBD02		MW107	Aq	clear, no odor	Monitoring well is in the south central portion of the site.	Groundwater possibly contaminated	6.34	No mini alert above background. HNU 4 ppm conductivity 6.7 x100 µ
CCM20	MCBD03		MW109	Aq	Some sediment in sample	Monitoring well is northern most well, in the northeastern section	Possible groundwater contamination.	5.01	No HNU or mini-alert readings above bckgnd conductivity 0.58 x100 µ
–	MCBD04		MWF66	Aq	See	MW-66			
–	MCBD05		MWF67	Aq	See	MW-67			
–	MCBD06		MWF68	Aq	See	MW-68			
–	MCBD07		MWF69	Aq	See	MW-69			
–	MCBD08		MWF71	Aq	See	MW-71			
–	MCBD09		MWF107	Aq	See	MW-107			

ORIGINAL (Red)

SAMPLE LOG

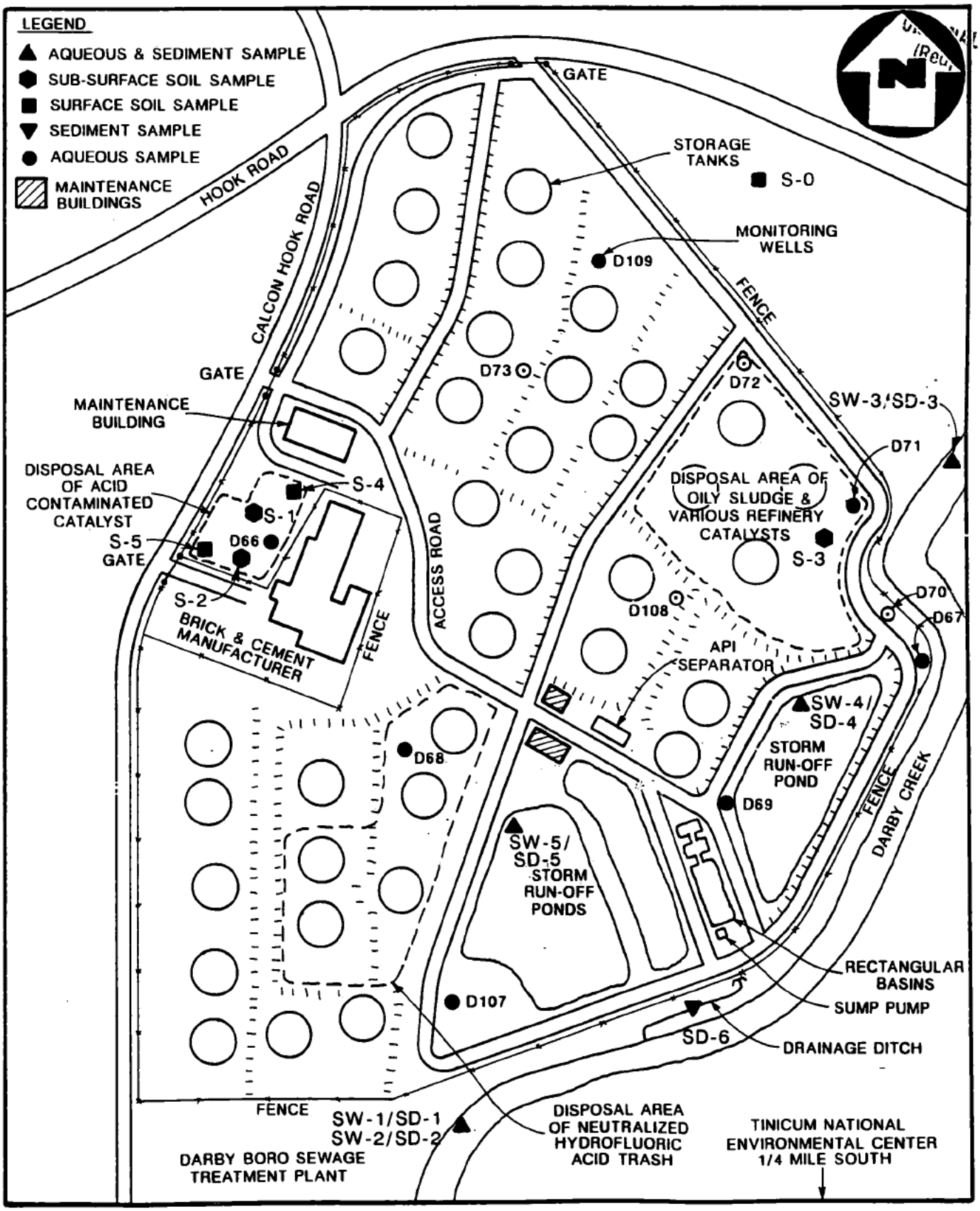
TDD NUMBER F-3-4906-07

EPA NUMBER PA-798

SITE NAME Gulf Oil Darby Creek Tank Farm

TRAFFIC REPORTS Organic	Inorganic	High Hazard	SAMPLE IDENTIFIER	PHASE	SAMPLE DESCRIPTION	SAMPLE LOCATION	TARGET USE	pH	FIELD MEASUREMENTS
-	MCBD10		MWF109	Aq	See	MW-109			
CCM21	MCBD12		SW-1	Aq	No irregularities noted.	Sample located at the southeastern part of the site, on the west bank of Darby Creek	Direct contact threat from recreational use of Darby Creek and Delaware River.	7.21	conductivity = 3.27 x 100 µ
CCM22	MCBD13		SW-2	Aq	Duplicate of SW-1	"	"	7.18	conductivity = 3.62 x 100 µ
CCM23	MCBD14		SW-3	Aq	Clear, no odor upstream sample location	Sample obtained on the west bank of Darby Creek, northeast of the northern site boundary	Direct contact threat is minimal from on site contaminants	6.78	conductivity = 3.62 x 100 µ
CCM24	MCBD15		SW-4	Aq	cloudy, light green color noted, no odor	Sample obtained from the northwestern section of the northeastern most storm run-off Pond	Possible direct contact threat to recreational activities on Darby crk and Delaware River due to discharge in Darby C	8.65	conductivity = 2.65 x 100 µ
CCM25	MCBD16		SW-5	Aq	Clear, no odor	Sample obtained from the northwestern section of the southwestern pond.	"	8.55	conductivity = 1.85 x 100 µ
-	BCBD11		BLF	Aq	Filtered Blank				

ORIGINAL (Red)



SAMPLE LOCATION MAP

GULF OIL DARBY CREEK TANK FARM, DARBY, PA

(NO SCALE)

FIGURE 5.1

NUS CORPORATION

ORIGINAL (Red)

5.4 Site Observations

- The background HNU reading was 0.2 ppm. An HNU reading of 5 ppm was recorded at sample location S-2, in the disposal area of acid-contaminated catalyst, at a depth of one foot. An HNU reading of 10 ppm was recorded at sample location S-1, in the same area as sample S-2, at a depth of one foot. An HNU reading of 4 ppm was recorded at the stem pipe for monitoring well no. D107, which is located in the southern portion of the site. An HNU reading of 15 ppm was recorded at the stem pipe of monitoring well D71. It was noted that there were approximately two to three feet of oil on top of the water column in the well. Monitoring well D71 is located in the northeastern section of the site, adjacent to the West Bank of Darby Creek. No other HNU readings above background were recorded.

- The radiation mini-alert was set at the X1 position; no readings above background were recorded.

- Monitoring well information collected at the site is as follows:

Well Number	Total Depth*	Depth to Water*	Height of Stick-up	Details
MW66	13 feet	6 feet, 6 inches	3 feet (estimated)	four-inch polyvinyl chloride (PVC) pipe; oily sheen; located in the acid catalyst disposal area
MW67	25 feet, 10 inches	13 feet, 9 inches	3 feet, 1 inch	four-inch PVC pipe; located in the eastern portion of the site, adjacent to the creek
MW68	16 feet, 2 inches	4 feet, 6 inches	3 feet, 5 inches	four-inch PVC pipe; located in the center of the site, where neutralized hydrofluoric acid trash was disposed
MW69	13 feet, 3 inches	4 feet, 6 inches	3 feet	four-inch PVC pipe; located in the east-central portion of the site
MW71	22 feet, 6 inches	6 feet, 2 inches	3 feet (estimated)	four-inch PVC pipe; raw oil was on top of the water column; located in the eastern portion of the site, in the area where oily sludge and various refinery catalysts were disposed
MW107	15 feet, 6 inches	3 feet	3 feet	four-inch PVC pipe; located in the southern region of the site
MW109	13 feet	3 feet	2 feet, 9 inches	four-inch PVC pipe; located in the northern part of the site

ORIGINAL (Red)

- Access to the property was restricted by an eight-foot fence surrounding the site and a motorized gate.

- There were 10- to 15-feet-high berms constructed around each tank or grouping of tanks that would provide containment in the event of a spill.

- A concrete- and brick-making facility operated south of the entrance gate to the tank farm. The facility was surrounded by the tank farm, except on its western boundary, which provided access from the brick facility to Calcon Hook Road.

- The surface of the site was primarily crushed stones. A sparse surface cover of grasses was noted in localized areas of the tank farm, especially within the containment berms.

- Darby Creek provides the southeastern boundary of the site; the creek flows toward the southwest. The creek is tidally affected in the area of the site.

- Two large storm water runoff ponds were observed in the southeastern portion of the site; the southernmost pond was divided by a berm.

- A rectangular-shaped basin was located adjacent to the northeastern storm runoff pond. The basin had a pump that pumped water from the basin to a drainage pathway that emptied into Darby Creek.

- The storm runoff ponds were ringed with marsh grasses, and aquatic wildlife, including frogs and turtles, was observed.

- Areas noted as past disposal sites on preliminary assessment maps could not be distinguished from areas that were not used as disposal sites. A uniform covering of fill material (dirt and gravel) obscured any evidence of prior use.

- An API oil separator was located in the central area of the site. Outfall from the separator was received by the rectangular basin to the southeast before discharging into Darby Creek.

- The disposal area for acid-contaminated catalysts along Calcon Hook Road was largely void of vegetation.

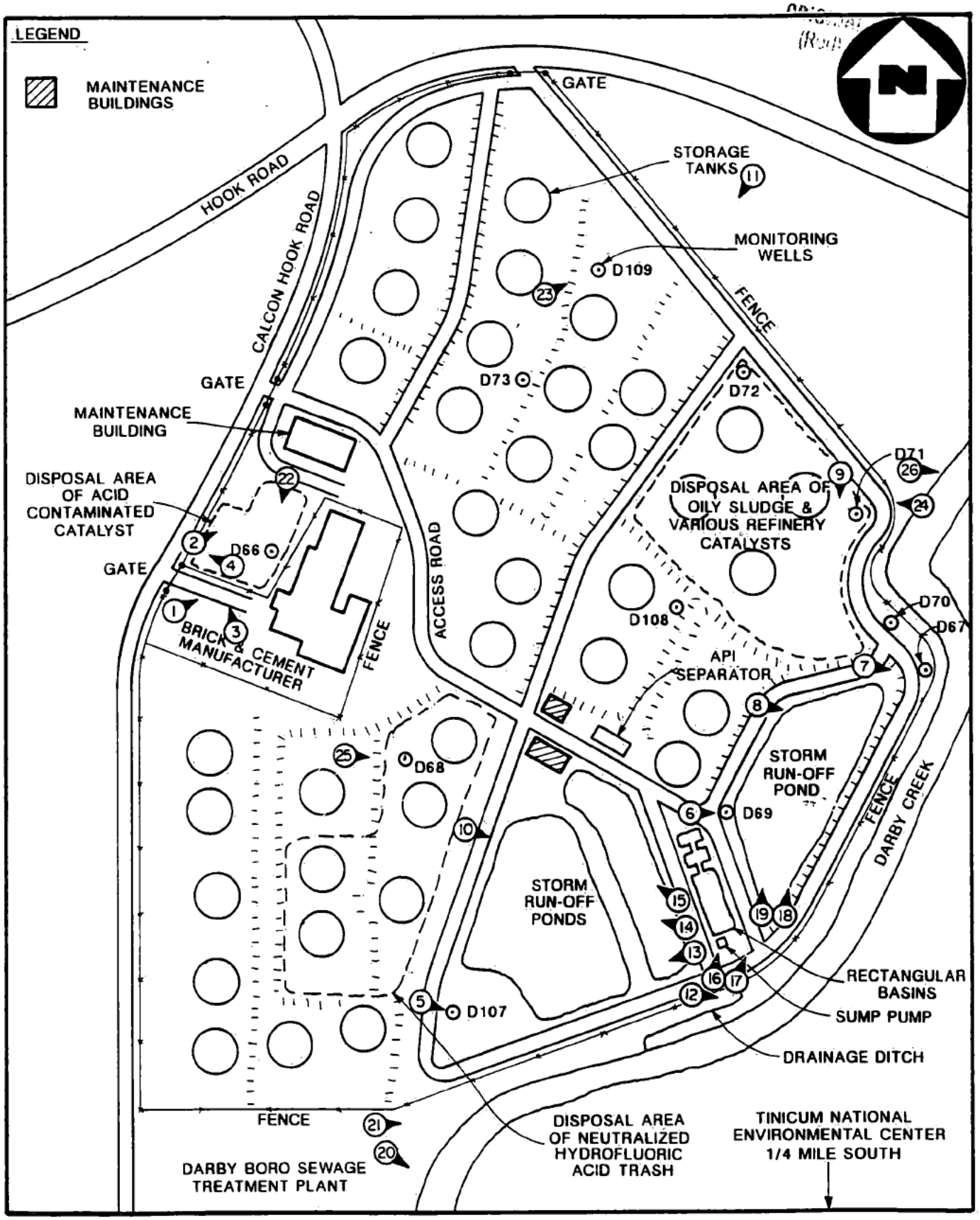


PHOTO LOCATION MAP

GULF OIL DARBY CREEK TANK FARM, DARBY, PA

(NO SCALE)

FIGURE 5.2

NUS CORPORATION

5.5 Photograph Log

Photo 1 - Monitoring well 66 view north by northeast.

Photo 2 - Sample location S-1 view NE.

ORIGINAL (Red)

Photo 3 - Sample location S2 view north.

(Red)

Photo 4 - Sample location S-5 view west.

Photo 5 - Monitoring well 107 view east.

Photo 6 - Monitoring well 69 view east.

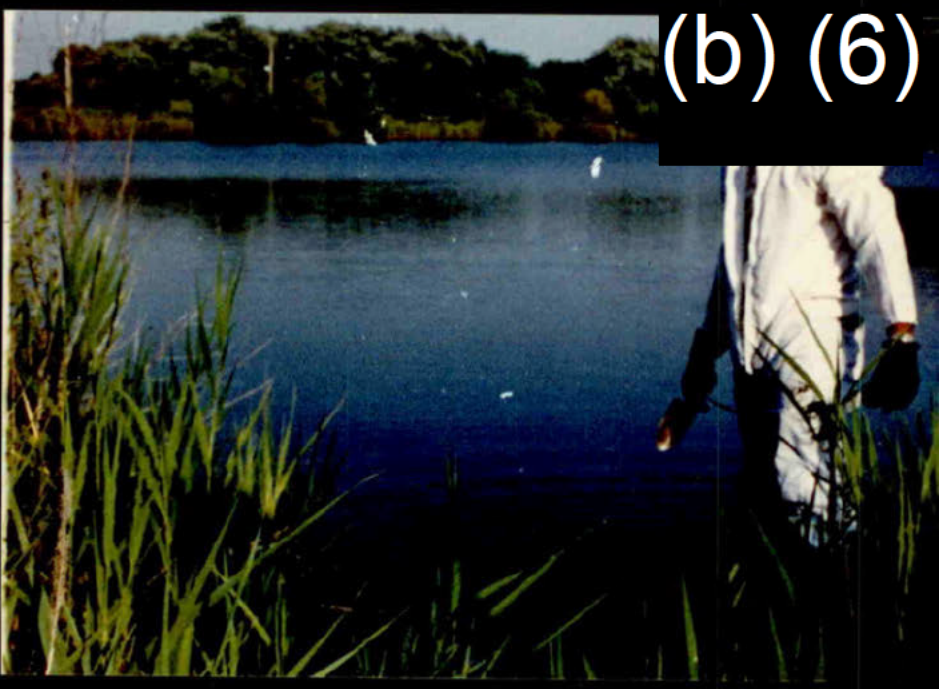
ORIGINAL

Photo 7 - Monitoring well 67 view NE.

Photo 8 - Sample location SW-4, SD-4
view east.

ORIGINAL

Photo 9 - Sample location S-3 view south.



(b) (6)

Photo 10 - Sample location SW-5 view east.

ORIGINAL (Red)

Photo 11 - Background sample location view SW.

Photo 12 - View of drainage outfall
view east.

ORIGINAL
(Red)

ORIGINAL (Red)

Photos 13,14,15 - Panorama of southern ponds view west.

Photos 16, 17 - Panorama of API separator pond view NW.

ORIGINAL (Red)

Photos 18, 1[illegible] - Panorama of northernmost run-off pond view NW.

ORIGINAL (Red)

Photo 20 - Sample location SW-1, SW-2, SD-1, SD-2 access, view east.

ORIGINAL (Red)

Photo 21 - Downstream sample location SW-1, SW-2, SD-1, SD-2: reference point of access to samples, view east.

ORIGINAL (Red)

Photo 22 - Sample location S-4, view south.

Photo 23 - Monitoring well D-109, view NE.

ORIGINAL (Red)

Photo 24 - Monitoring well D-71, view west.

ORIGINAL (Red)

Photo 25 - Monitoring well 68 view east.

Photo 26 - View east toward Darby Creek of upstream location.

ORIGINAL (Red)

ORIGINAL (Red)

F3-8906-07

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 1 - SITE LOCATION AND INSPECTION INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
PA	788

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER
Gulf Oil/Darby Creek Tank Farm	Calcon Hook and Hook Roads

03 CITY	04 STATE	05 ZIP CODE	06 COUNTY	07 COUNTY CODE	08 CONG DIST
Darby	PA	19023	Delaware	23	PA-07

09 COORDINATES LATITUDE	LONGITUDE	10 TYPE OF OWNERSHIP (Check one)
39° 53' 50"	075° 15' 49"	☒ A. PRIVATE ☐ B. FEDERAL ☐ C. STATE ☐ D. COUNTY ☐ E. MUNICIPAL ☐ F. OTHER ☐ G. UNKNOWN

III. INSPECTION INFORMATION

01 DATE OF INSPECTION	02 SITE STATUS	03 YEARS OF OPERATION
07 11 89 (MONTH DAY YEAR)	☒ ACTIVE ☐ INACTIVE	1950's (BEGINNING YEAR) (ENDING YEAR) ___ UNKNOWN

04 AGENCY PERFORMING INSPECTION (Check all that apply)

☐ A. EPA ☒ B. EPA CONTRACTOR NUS FIT 3 (Name of firm) ☐ C. MUNICIPAL ☐ D. MUNICIPAL CONTRACTOR ___ (Name of firm)
☐ E. STATE ☐ F. STATE CONTRACTOR ___ (Name of firm) ☐ G. OTHER ___ (Specify)

05 CHIEF INSPECTOR	06 TITLE	07 ORGANIZATION	08 TELEPHONE NO.
Not responsive due to revised scope [redacted]	Project Manager	NUS FIT 3.	(215) 687-9510

09 OTHER INSPECTORS	10 TITLE	11 ORGANIZATION	12 TELEPHONE NO.
Not responsive due to revised scope [redacted]	Geologist	NUS FIT 3	(215) 687-9510
Not responsive due to revised scope [redacted]	Environmental Scientist Geologist	NUS FIT 3 NUS FIT 3	215 687-9510 (215) 687-9510
Not responsive due to revised scope [redacted]	Environmental Scientist	NUS FIT 3	(215) 687-9510
Not responsive due to revised scope [redacted]	Biologist	NUS FIT 3	(215) 687-9510
Not responsive due to revised scope [redacted]	Agricultural Engineer	NUS FIT 3	(215) 687-9510

13 SITE REPRESENTATIVES INTERVIEWED	14 TITLE	15 ADDRESS	16 TELEPHONE NO.
Mike Manigly	Environmental Specialist	Chevron USA, Incorporated P.O. Box 7408, Phila, PA 19101	(215) 339-7466
Jim Tucker	Environmental Specialist	Chevron USA, Incorporated P.O. Box 7408, Phila, PA 19101	(215) 339-7477
			( )
			( )
			( )
			( )

17 ACCESS GAINED BY (Check one)	18 TIME OF INSPECTION	19 WEATHER CONDITIONS
☐ PERMISSION ☐ WARRANT	8:00 A.M.	80° F, Sunny

IV. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)	03 TELEPHONE NO.
Koge Suto	EPA	(215) 597-7713

04 PERSON RESPONSIBLE FOR SITE INSPECTION FORM	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NO.	08 DATE
Not responsive due to revised scope [redacted]	NUS	FIT 3	(215) 687-9510	1 31 90 (MONTH DAY YEAR)

EPA FORM 2070-13 (7-81)

ORIGINAL (Red)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
PA	788

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

- [X] A. SOLID
- [ ] B. POWDER, FINES
- [X] C. SLUDGE
- [ ] D. OTHER _____ (Specify)
- [ ] E. SLURRY
- [X] F. LIQUID
- [ ] G. GAS

02 WASTE QUANTITY AT SITE (Measures of waste quantities must not be combined)

TONS 800 Tons
CUBIC YARDS _____
NO. OF DRUMS _____

03 WASTE CHARACTERISTICS (Check all that apply)

- [X] A. TOXIC
- [X] B. CORROSIVE
- [ ] C. RADIOACTIVE
- [X] D. PERSISTENT
- [ ] E. SOLUBLE
- [ ] F. INFECTIOUS
- [X] G. FLAMMABLE
- [X] H. IGNITABLE
- [ ] I. HIGHLY VOLATILE
- [ ] J. EXPLOSIVE
- [X] K. REACTIVE
- [ ] L. INCOMPATIBLE
- [ ] M. NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE	unknown		There are three landfill areas located
OLW	OILY WASTE	unknown		on the site that received various
SOL	SOLVENTS			wastes including acid-contaminated
PSD	PESTICIDES	unknown		catalysts, hydrofluoric-acid-contaminated
OCC	OTHER ORGANIC CHEMICALS	unknown		trash, and oily dirt
IOC	INORGANIC CHEMICALS	unknown		
ACD	ACIDS	unknown		
BAS	BASES			
MES	HEAVY METALS	unknown		

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
OCC	benzene	71-43-2	none	190	ug/l
OCC	fluoranthene	33543-31-6	none	9,800	ug/l
PSD	Aroclor	1336-36-3	none	3,800	ug/l
MES	manganese	7439-96-5	none	6,610	ug/l
MES	cobalt	7440-48-4	none	72.2	ug/l

V. FEEDSTOCKS (See Appendix for CAS Numbers) N/A

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

NUS FIT 3 . Site Inspection. TDD No. F3-8906-07. July 8, 1989.

ORIGINAL (Red)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION
01 STATE: PA | 02 SITE NUMBER: 788

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ☒ A. GROUNDWATER CONTAMINATION
03 POPULATION POTENTIALLY AFFECTED: 0
02 ☒ OBSERVED (DATE: 7/8/89) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

Numerous contaminants were detected in on-site monitoring wells. All drinking water used around the site is supplied by public water authorities, which have sources outside the three-mile radius. of the site.

01 ☐ B. SURFACE WATER CONTAMINATION
03 POPULATION POTENTIALLY AFFECTED: 0
02 ☐ OBSERVED (DATE:) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None reported or observed.

01 ☐ C. CONTAMINATION OF AIR
03 POPULATION POTENTIALLY AFFECTED: 0
02 ☐ OBSERVED (DATE:) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None reported or observed.

01 ☐ D. FIRE/EXPLOSIVE CONDITIONS
03 POPULATION POTENTIALLY AFFECTED: 0
02 ☐ OBSERVED (DATE:) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None reported or observed.

01 ☒ E. DIRECT CONTACT
03 POPULATION POTENTIALLY AFFECTED: < 50
02 ☐ OBSERVED (DATE:) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

This number reflects the small number of personnel that operate or run the Gulf Oil Darby Creek tank farm.

01 ☒ F. CONTAMINATION OF SOIL
03 AREA POTENTIALLY AFFECTED: 97.31 Acres
02 ☒ OBSERVED (DATE: 7/8/89) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

Several soil contaminants were detected in the first and third disposal areas, the acid catalysts disposal area, and the oil and metal waste area.

01 ☒ G. DRINKING WATER CONTAMINATION
03 POPULATION POTENTIALLY AFFECTED: 0
02 ☐ OBSERVED (DATE:) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

All surrounding areas within a three-mile radius of the site are served by public water supplied from outside sources. No groundwater or surface water is used as a source within three-miles of the site.

01 ☐ H. WORKER EXPOSURE/INJURY
03 WORKERS POTENTIALLY AFFECTED:
02 ☐ OBSERVED (DATE:) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None reported or observed.

01 ☐ I. POPULATION EXPOSURE/INJURY
03 POPULATION POTENTIALLY AFFECTED:
02 ☐ OBSERVED (DATE:) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None reported or observed.

ORIGINAL (Red)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
PA	788

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 ☐ J. DAMAGE TO FLORA — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None reported or observed.

01 ☐ K. DAMAGE TO FAUNA — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION (Include name(s) of species)

None reported or observed.

01 ☐ L. CONTAMINATION OF FOOD CHAIN — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None reported or observed.

01 ☐ M. UNSTABLE CONTAINMENT OF WASTES (Spills/Runoff/Standing liquids, Leaking drums) — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 178,626 — 04 NARRATIVE DESCRIPTION

This number is the population within 3 miles of the site. Refinery wastes, including acid-contaminated catalysts, hydroflouric-contaminated trash, and oily dirt were disposed in covered, unlined landfills on site.

01 ☐ N. DAMAGE TO OFFSITE PROPERTY — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None reported or observed.

01 ☐ O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None reported or observed.

01 ☐ P. ILLEGAL/UNAUTHORIZED DUMPING — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None reported or observed.

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

None reported or observed.

III. TOTAL POPULATION POTENTIALLY AFFECTED: 178,626

IV. COMMENTS

The total population potentially affected reflects the fact that landfill wastes were deposited in unlined pits. There is potential contamination of Darby Creek due to its proximity to the site. The Tinicum Environmental Nature Center is 0.25 mile south of the site and is a recreational, fishing, and nature preserve fed by Darby Creek.

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

NUS FIT 3. Site Inspection. F3-8906-07. July 8, 1989.

ORIGINAL (Red)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION
PART 4 - PERMIT AND DESCRIPTIVE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
PA	788

II. PERMIT INFORMATION

01 TYPE OF PERMIT ISSUED (Check all that apply)	02 PERMIT NUMBER	03 DATE ISSUED	04 EXPIRATION DATE	05 COMMENTS
[X] A. NPDES	PA0011541	1981		
[ ] B. UIC				
[X] C. AIR	23-312-08/23-312-117 23-312-18/23-302-073	1981		
[X] D. RCRA	PAD980555254	8/81		
[ ] E. RCRA INTERIM STATUS				
[ ] F. SPCC PLAN				
[ ] G. STATE (Specify)				
[ ] H. LOCAL (Specify)				
[ ] I. OTHER (Specify)				
[ ] J. NONE				

III. SITE DESCRIPTION

01 STORAGE/DISPOSAL (Check all that apply)	02 AMOUNT	03 UNIT OF MEASURE
[ ] A. SURFACE IMPOUNDMENT		
[ ] B. PILES		
[ ] C. DRUMS, ABOVE GROUND		
[ ] D. TANK, ABOVE GROUND		
[ ] E. TANK, BELOW GROUND		
[X] F. LANDFILL	approximately 800	tons
[ ] G. LANDFARM		
[ ] H. OPEN DUMP		
[ ] I. OTHER (Specify)		

04 TREATMENT (Check all that apply)

- [ ] A. INCENERATION
- [ ] B. UNDERGROUND INJECTION
- [ ] C. CHEMICAL/PHYSICAL
- [ ] D. BIOLOGICAL
- [ ] E. WASTE OIL PROCESSING
- [ ] F. SOLVENT RECOVERY
- [ ] G. OTHER RECYCLING/RECOVERY
- [ ] H. OTHER N/A (Specify)

05 OTHER

[X] A. BUILDINGS ON SITE

37 crude oil storage tanks; 3 maintenance + manufacturing bldgs.

06 AREA OF SITE

97.31 Acres

07 COMMENTS

?

IV. CONTAINMENT

01 CONTAINMENT OF WASTES (Check one)

[ ] A. ADEQUATE, SECURE [ ] B. MODERATE [X] C. INADEQUATE, POOR [ ] D. INSECURE, UNSOUND, DANGEROUS

02 DESCRIPTION OF DRUMS, DIKING, LINERS, BARRIERS, ETC.

The three landfill areas are thinly covered with soil and are unlined. There are two runoff collection ponds, used as a source of water in the event of a fire, which can access Darby Creek when overfilled.

V. ACCESSIBILITY

01 WASTE EASILY ACCESSIBLE: [ ] YES [X] NO

02 COMMENTS

The site is surrounded by a high chain-linked fence.

VI. SOURCES OF INFORMATION (Cite specific references, e.g. state files, sample analysis, reports)

NUS FIT 3. Site Inspection. F3-8906-07. July 8, 1989.

ORIGINAL (Red)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
PA	788

II. DRINKING WATER SUPPLY

01 TYPE OF DRINKING SUPPLY (Check as appropriate)

	SURFACE	WELL
COMMUNITY	A. ☐	B. ☒
NON-COMMUNITY	C. ☐	D. ☐

02 STATUS N/A

ENDANGERED	AFFECTED	MONITORED
A. ☐	B. ☐	C. ☐
D. ☐	E. ☐	F. ☐

03 DISTANCE TO SITE
A. 4.8 (mi)
B. _____ (mi)

III. GROUNDWATER

01 GROUNDWATER USE IN VICINITY (Check one)

☐ A. ONLY SOURCE FOR DRINKING ☐ B. DRINKING (Other sources available) COMMERCIAL, INDUSTRIAL, IRRIGATION (No other water sources available) ☒ C. COMMERCIAL, INDUSTRIAL, IRRIGATION (Limited other sources available) ☐ D. NOT USED, UNUSEABLE

02 POPULATION SERVED BY GROUND WATER 0

03 DISTANCE TO NEAREST DRINKING WATER WELL 4.8 (mi)

04 DEPTH TO GROUNDWATER	05 DIRECTION OF GROUNDWATER FLOW	06 DEPTH TO AQUIFER OF CONCERN	07 POTENTIAL YIELD OF AQUIFER	08 SOLE SOURCE AQUIFER
3 (m)	South and Southeast	approximately 10 (m)	unknown (gpd)	☐ YES ☒ NO

09 DESCRIPTION OF WELLS (Including useage, depth, and location relative to population and buildings)

N/A

10 RECHARGE AREA
☐ YES
☒ NO
COMMENTS

11 DISCHARGE AREA
☒ YES
☐ NO
COMMENTS Darby Creek is adjacent to the site and tidal wetlands are located <0.25 miles to the south

IV. SURFACE WATER

01 SURFACE WATER USE (Check one)

☒ A. RESERVOIR, RECREATION DRINKING WATER SOURCE ☐ B. IRRIGATION, ECONOMICALLY IMPORTANT RESOURCES ☐ C. COMMERCIAL, INDUSTRIAL ☐ D. NOT CURRENTLY USED

02 AFFECTED/POTENTIALLY AFFECTED BODIES OF WATER

NAME:	AFFECTED	DISTANCE TO SITE
Darby Creek	☐	adjacent (mi)
Tinicum Environmental Nature Center	☐	<0.25 (mi)
	☐	(mi)

V. DEMOGRAPHIC AND PROPERTY INFORMATION

01 TOTAL POPULATION WITHIN

ONE (1) MILE OF SITE	TWO (2) MILES OF SITE	THREE (3) MILES OF SITE
A. 6880 NO. OF PERSONS	B. 57385 NO. OF PERSONS	C. 178,626 NO. OF PERSONS

02 DISTANCE TO NEAREST POPULATION <0.25 (mi)

03 NUMBER OF BUILDINGS WITHIN TWO (2) MILES OF SITE 19,128

04 DISTANCE TO NEAREST OFF-SITE BUILDING 0.05 (mi)

05 POPULATION WITHIN VICINITY OF SITE (Provide narrative description of nature of population within vicinity of site, e.g., rural, village, densely populated urban area)

The area is an urban residential area surrounded by industrial sites. Darby Creek and tidal wetlands are located to the east and to the south. These wetlands are major areas of recreation and fishing.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
PA	788

VI. ENVIRONMENTAL INFORMATION

01 PERMEABILITY OF UNSATURATED ZONE (Check one)

10^{-3}-10^{-5} cm/sec

☐ A. 10^{-6} – 10^{-8} cm/sec ☐ B. 10^{-4} – 10^{-6} cm/sec ☐ C. 10^{-4} – 10^{-3} cm/sec ☐ D. GREATER THAN 10^{-3} cm/sec

02 PERMEABILITY OF BEDROCK (Check one)

10^{-3}-10^{-5} cm/sec

☐ A. IMPERMEABLE (Less than 10^{-6} cm/sec) ☐ B. RELATIVELY IMPERMEABLE (10^{-4} – 10^{-6} cm/sec) ☐ C. RELATIVELY PERMEABLE (10^{-2} – 10^{-4} cm/sec) ☐ D. VERY PERMEABLE (Greater than 10^{-2} cm/sec)

03 DEPTH TO BEDROCK	04 DEPTH OF CONTAMINATED SOIL ZONE	05 SOIL pH
unknown (ft)	unknown (ft)	unknown

06 NET PRECIPITATION	07 ONE YEAR 24 HOUR RAINFALL	08 SLOPE		
		SITE SLOPE	DIRECTION OF SITE SLOPE	TERRAIN AVERAGE SLOPE
6.4 (in)	3.25 (in)	<3 %	N/A	<3 %

09 FLOOD POTENTIAL

SITE IS IN N/A YEAR FLOODPLAIN

10 ☐ SITE IS ON BARRIER ISLAND, COASTAL HIGH HAZARD AREA, RIVERINE FLOODWAY

11 DISTANCE TO WETLANDS (5 acre minimum)

ESTUARINE

A. adjacent (mi) B. <0.25 (mi)

OTHER -total wetlands

12 DISTANCE TO CRITICAL HABITAT (of endangered species)

<0.25 (mi)

ENDANGERED SPECIES: shortnose sturgeon

13 LAND USE IN VICINITY

DISTANCE TO:

COMMERCIAL/INDUSTRIAL	RESIDENTIAL AREAS, NATIONAL/STATE PARKS, FORESTS, OR WILDLIFE RESERVES	AGRICULTURAL LANDS PRIME AG LAND	AG LAND
A. 0 (mi)	B. <0.25 (mi)	C. >3 (mi)	D. >3 (mi)

14 DESCRIPTION OF SITE IN RELATION TO SURROUNDING TOPOGRAPHY

The site is located in a heavily industrialized area of south Philadelphia with urban residences to the north, west, and northeast. Darby Creek is adjacent to the site to the east and supplies Tinicum Environmental Nature Center, which is less than 1/4 mile south of the site, with water.

VII. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

NUS FIT 3. Site inspection. F3-8906-07. July 8, 1989.

Pennsylvania Department of Environmental Resources. Preliminary Assessment Report, PA No. 788- February 18, 1987.

ORIGINAL (Red)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 6 - SAMPLE AND FIELD INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
PA	788

II. SAMPLES TAKEN

SAMPLE TYPE	01 NUMBER OF SAMPLES TAKEN	02 SAMPLES SENT TO	03 ESTIMATED DATE RESULTS AVAILABLE
GROUNDWATER	14		
SURFACE WATER	5		
WASTE			
AIR			
RUNOFF			
SPILL Sediment	6		
SOIL	6		
VEGETATION			
OTHER	3		

III. FIELD MEASUREMENTS TAKEN

01 TYPE	02 COMMENTS
HNU	HNU PI-101 meter
pH	Omega PHH-49A meter
conductivity	Omega PHH-49A meter
	?

IV. PHOTOGRAPHS AND MAPS

01 TYPE ☒ GROUND ☐ AERIAL

02 IN CUSTODY OF NUS FIT 3 and EPA, Region III
(Name of organization or individual)

03 MAPS ☒ YES ☐ NO

04 LOCATION OF MAPS NUS FIT 3 (Wayne PA) and EPA RegionIII(Philadelphia PA)

V. OTHER FIELD DATA COLLECTED (Provide narrative description)

N/A

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sampling equipment, reports)

NUS FIT 3. Site Inspection. F3-8906-07. July 8, 1989.

ORIGINAL (Red)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 7 - OWNER INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
PA	788

II. CURRENT OWNER(S)

01 NAME	02 D+B NUMBER
Chevron USA, Incorporated	

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
P.O. Box 7408	

05 CITY	06 STATE	07 ZIP CODE
Philadelphia	PA	19101

01 NAME	02 D+B NUMBER
N/A	

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER
N/A	

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER
N/A	

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

PARENT COMPANY (If applicable)

08 NAME	09 D+B NUMBER

10 STREET ADDRESS (P.O. Box, RFD #, etc.)	11 SIC CODE

12 CITY	13 STATE	14 ZIP CODE

08 NAME	09 D+B NUMBER

10 STREET ADDRESS (P.O. Box, RFD #, etc.)	11 SIC CODE

12 CITY	13 STATE	14 ZIP CODE

08 NAME	09 D+B NUMBER

10 STREET ADDRESS (P.O. Box, RFD #, etc.)	11 SIC CODE

12 CITY	13 STATE	14 ZIP CODE

08 NAME	09 D+B NUMBER

10 STREET ADDRESS (P.O. Box, RFD #, etc.)	11 SIC CODE

12 CITY	13 STATE	14 ZIP CODE

III. PREVIOUS OWNER(S) (List most recent first)

01 NAME	02 D+B NUMBER
Gulf Oil Company, Incorporated	

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
30th and Penrose Avenue	

05 CITY	06 STATE	07 ZIP CODE
Philadelphia	PA	19145

01 NAME	02 D+B NUMBER
N/A	

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER
N/A	

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

IV. REALTY OWNER(S) (If applicable; list most recent first)

01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

PA DER. Preliminary Assessment Report, PA No. 786. February 18, 1987.
NUS FIT 3. Site Inspection. F3-8906-07. July 8, 1989.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 8 - OPERATOR INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
PA	788

II. CURRENT OPERATOR (Provide if different from owner)

01 NAME	02 D+B NUMBER	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	05 CITY	06 STATE	07 ZIP CODE	08 YEARS OF OPERATION	09 NAME OF OWNER
Chevron USA, Incorporated		P.O. Box 7808		Philadelphia	PA	19101	1985 to present	

OPERATOR'S PARENT COMPANY (If applicable)

10 NAME	11 D+B NUMBER	12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE	14 CITY	15 STATE	16 ZIP CODE

III. PREVIOUS OPERATOR(S) (List most recent first; provide only if different from owner)

01 NAME	02 D+B NUMBER	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	05 CITY	06 STATE	07 ZIP CODE	08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD
Gulf Oil Company, Incorporated		30th and Penrose Avenue		Philadelphia	PA	19145	1950s to 1985	
N/A								
N/A								

PREVIOUS OPERATORS' PARENT COMPANIES (If applicable)

10 NAME	11 D+B NUMBER	12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE	14 CITY	15 STATE	16 ZIP CODE

IV. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

PA DER. Preliminary Assessment Report, PA No. 788. February 18, 1987.
NUS FIT 3. Site Inspection. F3-8906-07. July 8, 1989.

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 9 - GENERATOR/TRANSPORTER INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
PA	788

II. ON-SITE GENERATOR

01 NAME	02 D+B NUMBER
N/A	

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

III. OFF-SITE GENERATOR(S)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
Gulf Oil Refinery			

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
30th and Penrose Avenue			

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE
Philadelphia	PA	19145			

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE

IV. TRANSPORTER(S)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
N/A			

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
N/A			

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

PA DER. Preliminary Assessment Report, PA No. 786. February 18, 1987.

NUS FIT 3. Site Inspection. F3-8906-07. July 8, 1989.

ORIGINAL (Red)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
PA	788

II. PAST RESPONSE ACTIVITIES

01 ☐ A. WATER SUPPLY CLOSED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
N/A

01 ☐ B. TEMPORARY WATER SUPPLY PROVIDED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
N/A

01 ☐ C. PERMANENT WATER SUPPLY PROVIDED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
N/A

01 ☐ D. SPILLED MATERIAL REMOVED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
N/A

01 ☐ E. CONTAMINATED SOIL REMOVED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
N/A

01 ☐ F. WASTE REPACKAGED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
N/A

01 ☐ G. WASTE DISPOSED ELSEWHERE — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
N/A

01 ☐ H. ON SITE BURIAL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
N/A

01 ☐ I. IN SITU CHEMICAL TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
N/A

01 ☐ J. IN SITU BIOLOGICAL TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
N/A

01 ☐ K. IN SITU PHYSICAL TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
N/A

01 ☐ L. ENCAPSULATION — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
N/A

01 ☐ M. EMERGENCY WASTE TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
N/A

01 ☐ N. CUTOFF WALLS — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
N/A

01 ☐ O. EMERGENCY DIKING/SURFACE WATER DIVERSION — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
N/A

01 ☐ P. CUTOFF TRENCHES/SUMP — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
N/A

01 ☐ Q. SUBSURFACE CUTOFF WALL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
N/A

ORIGINAL (Red)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
PA	788

II PAST RESPONSE ACTIVITIES (Continued)

01 ☐ R. BARRIER WALLS CONSTRUCTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
N/A

01 ☐ S. CAPPING/COVERING — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
N/A

01 ☐ T. BULK TANKAGE REPAIRED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
N/A

01 ☐ U. GROUT CURTAIN CONSTRUCTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
N/A

01 ☐ V. BOTTOM SEALED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
N/A

01 ☐ W. GAS CONTROL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
N/A

01 ☐ X. FIRE CONTROL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
N/A

01 ☐ Y. LEACHATE TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
N/A

01 ☐ Z. AREA EVACUATED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
N/A

01 ☐ 1. ACCESS TO SITE RESTRICTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
N/A

01 ☐ 2. POPULATION RELOCATED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
N/A

01 ☐ 3. OTHER REMEDIAL ACTIVITIES — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
N/A

III. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

PA DER. Preliminary Assessment Report, PA No. 786. February 18, 1987.

NUS FIT 3. Site Inspection. F3-8906-07. July 8, 1989.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 11 - ENFORCEMENT INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
PA	788

II. ENFORCEMENT INFORMATION

01 PAST REGULATORY/ENFORCEMENT ACTION ☐ YES ☒ NO

02 DESCRIPTION OF FEDERAL, STATE, LOCAL REGULATORY/ENFORCEMENT ACTION

NONE

III. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

PA DER. Preliminary Assessment Report, PA No. 786. February 18, 1987.
NUS FIT 3. Site Inspection. F3-8906-07. July 8, 1989.

ORIGINAL (Red)

SECTION 6

6.0 REFERENCES FOR SECTIONS 1.0 THROUGH 5.0

1. United States Geological Survey. Lansdowne, Pennsylvania Quadrangle, 7.5 Minute Series. Topographic Map. 1967, photorevised 1973. Combined with Bridgeport, New Jersey - Pennsylvania Quadrangle, 7.5 Minute Series. Topographic Map. 1967, photorevised 1986.

2. NUS Corporation, FIT 3. Non-sampling site reconnaissance report. TDD No. F3-8811-22, February 8, 1989.

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4. Pennsylvania Department of Environmental Resources. Preliminary Assessment. March 30, 1987.

5. Robb, Phoebe, Project Monitor, United States Environmental Protection Agency, and Gannett Fleming Environmental Engineers, Incorporated. Folcroft Landfill - Tinicum Marsh Special Study. Draft Site Investigation Report. December 1988.

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7. Caputo, D.L., Coordinator Environmental Affairs, Gulf Oil Chemicals Company. Notification of Hazardous Waste Site. EPA Form 200-0138, June 5, 1981.

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9. Bulkin, Shirley D., Chief, RCRA Administrative Support Section, United States Environmental Protection Agency, to R.E. Wohlgemuth, Gulf Oil Corporation. Correspondence. December 30, 1981.

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11. Philadelphia Suburban Water Company. Water - Our Most Precious Resource. April 1987.

12. Brown, Drew, Public Education, Philadelphia Water Company, with Mary Gardner, NUS FIT 3. Telecon. January 7, 1988.

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16. Greenman, D.W., D.R. Rima, W.N. Lockwood, and H. Meisler, Pennsylvania Geological Survey. Groundwater Resources of the Coastal Plain Area of Southeastern Pennsylvania. Bulletin W13, 1961.

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21. Poth, Charles, Pennsylvania Department of Environmental Resources, Bureau of Topographic and Geologic Survey. Hydrology of the Metamorphic and Igneous Rocks of Central Chester County. Water Resource Report 25, 1968.

ORIGINAL (Red)

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24. United States Department of the Interior, Fish and Wildlife Service. Bridgeton, Pennsylvania - New Jersey Quadrangle. National Wetlands Inventory Map. March 1972.

25. United States Department of Commerce, National Climatic Data Center. Climatography of the United States. Local Climatological Data, Philadelphia, Pennsylvania. Asheville, North Carolina. 1983.

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27. Rand McNally and Company. Road Atlas of North America. Chicago, Illinois. 1989.

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ORIGINAL (Red)

SECTION 7

7.0 LABORATORY DATA

7.1 Sample Data Summary

The attached data summary contains only compounds which were identified as detected in at least one sample. The complete list of compounds analyzed for, their results, and the associated detection limits are located as an appendix. Results for tentatively identified compounds appear following the organic data section of this report.

The following codes are used in the data summary to indicate the confidence in the laboratory results:

CODES RELATING TO IDENTIFICATION
(confidence concerning presence or absence of compounds):

U = Not detected. The associated number indicates approximate sample concentration necessary to be detected.

(NO CODE) = Confirmed identification.

B = Not detected substantially above the level reported in laboratory or field blanks.

R = Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

N = Tentative identification. Consider present. Special methods may be needed to confirm its presence or absence in future sampling efforts.

CODES RELATED TO QUANTITATION
(can be used for both positive results and sample quantitation limits):

J = Analyte present. Reported value may not be accurate or precise.

K = Analyte present. Reported value may be biased high. Actual value is expected to be lower.

L = Analyte present. Reported value may be biased low. Actual value is expected to be higher.

UJ = Not detected, quantitation limit may be inaccurate or imprecise.

UL = Not detected, quantitation limit is probably higher.

OTHER CODES

Q = No analytical result.

SELECTED SAMPLE ORDER

SITE NAME: Gulf Oil Darby Creek Tank Farm
SAMPLING DATE(s): 7-8-89
STATE/COUNTY CODE:
TDD NUMBER: F3-8906-07
CASE NUMBER: 12281
EPA NUMBER: PA-788
LAB NAMES: IT CERRITOS (organics) SKINNER & SHERMAN LABS (inorganics)

SAMPLE NUMBER:	CCM21	CCM22	CCM23	CCM24	CCM25	CW504
SAMPLE ID:	sw-1	sw-2	sw-3	sw-4	sw-5	mw-66
LOCATION:	SE part of site; west bank of Darby Creek	duplicate of sw-1	Darby Creek upstream recreation clear no odr	on site runoff pond no uses cldy-no odor	on site SW pond no uses clear no odr	On site mw-66 purged oily sheen
PH:	7.2	7.2	6.8	8.7	8.6	6.2
FIELD MEASUREMENTS:	no readings	no readings	no readings	no readings	no readings	no readings
PERCENT SOLIDS:						

TYPE OF DATA: ****** VOLATILES **********

DILUTION FACTOR:	1.0	1.0	1.0	1.0	1.0	1.6
DET. LIMIT CRQL (*=IDL) / SAMPLE NUMBER: UNITS:	CCM21 ug/l	CCM22 ug/l	CCM23 ug/l	CCM24 ug/l	CCM25 ug/l	CW504 ug/l
5.00 methylene chloride	3.00 B	3.00 B	4.00 B	4.00 B	4.00 B	28.00 B
10.00 acetone	2.00 B	2.00 B	3.00 B	2.00 B	2.00 B	10.00 B
5.00 carbon disulfide						
5.00 1,1-dichloroethene						
5.00 1,1-dichloroethane						
5.00 1,1,1-trichloroethane						
5.00 benzene						190.00
5.00 toluene						5.00 J
5.00 ethylbenzene						8.00 J
5.00 total xylenes						12.00

TYPE OF DATa: ****** SEMIVOLATILES **********

DILUTION FACTOR:	1.0	1.0	1.0	1.0	1.0	4.0
DET. LIMIT CRQL (*=IDL) / SAMPLE NUMBER: UNITS:	CCM21 ug/l	CCM22 ug/l	CCM23 ug/l	CCM24 ug/l	CCM25 ug/l	CW504 ug/l
10.00 naphthalene						10.00 J
10.00 acenaphthene						
10.00 dibenzofuran						
10.00 diethyl phthalate						
10.00 fluorene						
10.00 phenanthrene						
10.00 anthracene						
10.00 fluoranthene						
10.00 pyrene						
10.00 benzo(a)anthracene						
10.00 chrysene						
10.00 bis(2-ethylhexyl) phthalate						
10.00 benzo(b)fluoranthene						
10.00 benzo(k)fluoranthene						
10.00 benzo(a)pyrene						
10.00 indeno(1,2,3-cd)pyrene						
10.00 benzo(g,h,i)perylene						

TYPE OF DATa: ****** PESTICIDES **********

DILUTION FACTOR:	1.0	1.0	1.0	1.0	1.0	4.0
DET. LIMIT CRQL (*=IDL) / SAMPLE NUMBER: UNITS:	CCM21 u /l	CCM22 ug/l	CCM23 ug/l	CCM24 ug/l	CCM25 ug/l	CW504 ug/l

Comments: **********
DUPLICATES: aq: CCM21,CCM22; sol: CCM26,CCM27

SELECTED SAMPLE ORDER

SITE NAME: Gulf Oil Darby Creek Tank Farm
SAMPLING DATE(s): 7-8-89
STATE/COUNTY CODE:
TDD NUMBER: F3-8906-07
CASE NUMBER:12281
EPA NUMBER: PA-788
LAB NAMES: IT CERRITOS (organics) SKINNER & SHERMAN LABS (inorganics)

SAMPLE NUMBER:	CCM17	CW505	CN939	CCM19	CCM20	CCM33
SAMPLE ID:	mw-67	mw-68	mw-69	mw-107	mw-109	AqBlk
LOCATION:	on site mw-67 purged cloudy no od	on site mw-68 purged clear no odr	On site mw-69 purged clear no odr	On site mw-107 purged clear no odr	On site mw-109 purged sed in smpl	aqueous blank
PH:	5.5	6.3	6.3	6.3	5.0	6.7
FIELD MEASUREMENTS:	no readings	no readings	no readings	Hnu-4ppm	no readings	
PERCENT SOLIDS:						

TYPE OF DATA: ****** VOLATILES **********

DILUTION FACTOR:	1.0	1.0	1.0	1.0	1.0	1.0
DET. LIMIT CRQL (*=IDL) / SAMPLE NUMBER:	CCM17	CW505	CN939	CCM19	CCM20	CCM33
UNITS:	ug/l	ug/l	ug/l	ug/l	ug/l	ug/kg
5.00 methylene chloride	4.00 B	5.00 B	4.00 B	3.00 B	3.00 B	4.00 J
10.00 acetone	3.00 B		2.00 B	4.00 B		
5.00 carbon disulfide	2.00 J					
5.00 1,1-dichloroethene		2.00 J				
5.00 1,1-dichloroethane		2.00 J				
5.00 1,1,1-trichloroethane		1.00 J				
5.00 benzene						
5.00 toluene						
5.00 ethylbenzene						
5.00 total xylenes						

TYPE OF DATa: ****** SEMIVOLATILES **********

DILUTION FACTOR:	1.0	1.0	1.0	1.0	1.0	1.0
DET. LIMIT CRQL (*=IDL) / SAMPLE NUMBER:	CCM17	CW505	CN939	CCM19	CCM20	CCM33
UNITS:	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
10.00 naphthalene						
10.00 acenaphthene	17.00					
10.00 dibenzofuran	3.00 J					
10.00 diethyl phthalate				22.00		
10.00 fluorene	3.00 J					
10.00 phenanthrene						
10.00 anthracene						
10.00 fluoranthene						
10.00 pyrene						
10.00 benzo(a)anthracene						
10.00 chrysene						
10.00 bis(2-ethylhexyl) phthalate						
10.00 benzo(b)fluoranthene						
10.00 benzo(k)fluoranthene						
10.00 benzo(a)pyrene						
10.00 indeno(1,2,3-cd)pyrene						
10.00 benzo(g,h,i)perylene						

TYPE OF DATa: ****** PESTICIDES **********

DILUTION FACTOR:	1.0	1.0	1.0	1.0	1.0	1.0
DET. LIMIT CRQL (*=IDL) / SAMPLE NUMBER:	CCM17	CW505	CN939	CCM19	CCM20	CCM33
UNITS:	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l

Comments: **********
DUPLICATES: aq: CCM21,CCM22; sol: CCM26,CCM27

ORIGINAL (Red)

SELECTED SAMPLE ORDER

SITE NAME: Gulf Oil Darby Creek Tank Farm
SAMPLING DATE(s): 7-8-89
STATE/COUNTY CODE:
TDD NUMBER: F3-8906-07
CASE NUMBER: 12281
EPA NUMBER: PA-788
LAB NAMES: IT CERRITOS (organics) SKINNER & SHERMAN LABS (inorganics)

SAMPLE NUMBER:	CQ623	CQ624	CP743	CP744	CN938	CCM26
SAMPLE ID:	s-1	s-2	s-3	s-4	s-5	sd-1
LOCATION:	on site 1 to 2 feet fine gray drk blk mtl	on site dispsl area brown-gray sndy-pbbly	ons S ofD-71 0 to 14inchs silt loam oily smell	on-site ind-accs brown sandy pbbls-bricks	on site ind-acss stress veg brown sandy	Darby Creek downstream matches SW-1 brown silty
PH:	4.1	4.2	7.5	7.4	8.2	7.1
FIELD MEASUREMENTS:	Hnu-5to10ppm	Hnu-5ppm	no readings	no readings	no readings	no readings
PERCENT SOLIDS:	54.0%	76.0%	83.0%	90.0%	74.0%	37.0%

TYPE OF DATA: ****** VOLATILES **********

DILUTION FACTOR:	1.9	1.3	1.2	1.1	1.4	2.7

DET. LIMIT CRQL (*=IDL)	SAMPLE NUMBER: / UNITS:	CQ623 ug/kg	CQ624 ug/kg	CP743 ug/kg	CP744 ug/kg	CN938 ug/kg	CCM26 ug/kg
5.00	methylene chloride	17.00 B	11.00 B	24.00 B	15.00 B	9.00 B	17.00 B
10.00	acetone			2.00 B	2.00 B		
5.00	carbon disulfide						
5.00	1,1-dichloroethene						
5.00	1,1-dichloroethane						
5.00	1,1,1-trichloroethane						
5.00	benzene	10.00 J					
5.00	toluene						
5.00	ethylbenzene						
5.00	total xylenes						

TYPE OF DATa: ****** SEMIVOLATILES **********

DILUTION FACTOR:	617.3	438.6	401.6	370.4	450.4	653.6

DET. LIMIT CRQL (*=IDL)	SAMPLE NUMBER: / UNITS:	CQ623 ug/kg	CQ624 ug/kg	CP743 ug/kg	CP744 ug/kg	CN938 ug/kg	CCM26 ug/kg
10.00	naphthalene				470.00 L		
10.00	acenaphthene						
10.00	dibenzofuran						
10.00	diethyl phthalate						
10.00	fluorene			900.00 L			
10.00	phenanthrene	2200.00 J	3400.00 J	840.00 L		1400.00 J	670.00 L
10.00	anthracene		710.00 J	430.00 L		490.00 J	
10.00	fluoranthene	1200.00 J	3300.00 J	1500.00 L		1100.00 J	1200.00 L
10.00	pyrene	2400.00 J	2500.00 J	3800.00 L		1100.00 J	1300.00 L
10.00	benzo(a)anthracene	1400.00 J	1200.00 J				450.00 L
10.00	chrysene	2100.00 J	1600.00 J	3000.00 L		750.00 J	740.00 J
10.00	bis(2-ethylhexyl) phthalate						
10.00	benzo(b)fluoranthene		230.00 J	1500.00 L			
10.00	benzo(k)fluoranthene	990.00 N	230.00 J				
10.00	benzo(a)pyrene		720.00 J	1600.00 L		780.00 N	
10.00	indeno(1,2,3-cd)pyrene						
10.00	benzo(g,h,i)perylene			1500.00 L	450.00 L		

TYPE OF DATa: ****** PESTICIDES **********

DILUTION FACTOR:	4444.0	3158.0	964.0	3556.0	3243.0	314.0

DET. LIMIT CRQL (*=IDL)	SAMPLE NUMBER: / UNITS:	CQ623 ug/kg	CQ624 ug/kg	CP743 ug/kg	CP744 ug/kg	CN938 ug/kg	CCM26 ug/kg

Comments: **********
DUPLICATES: aq: CCM21,CCM22; sol: CCM26,CCM27

ORIGINAL (Red)

SELECTED SAMPLE ORDER

SITE NAME: Gulf Oil Darby Creek Tank Farm
SAMPLING DATE(s): 7-8-89
STATE/COUNTY CODE:
TDD NUMBER: F3-8906-07
CASE NUMBER: 12281
EPA NUMBER: PA-788
LAB NAMES: IT CERRITOS (organics) SKINNER & SHERMAN LABS (inorganics)

SAMPLE NUMBER:	CCM27	CCM28	CCM29	CCM30	CCM31	CCM32
SAMPLE ID:	sd-2	sd-3	sd-4	sd-5	sd-6	s-0
LOCATION:	Darby Creek downstream dup of sd-1 brown silty	Darby Creek upstream matches SW-3 brown sandy	run-off pond northeastern matches SW-4 brown sandy	run-off pond southwestern matches SW-5 tan silty	drainage out run-off pond no aq samp brown sandy	off-site bkg cemetary grass veg brown clay
PH:	7.1	7.2	7.9	7.4	7.2	6.7
FIELD MEASUREMENTS:	no reading	no reading	no readings	no readings	no readings	no readings
PERCENT SOLIDS:	58.0%	41.0%	84.0%	49.0%	28.0%	82.0%

TYPE OF DATA: ****** VOLATILES **********

DILUTION FACTOR:	1.7	2.4	1.2	2.0	3.6	1.2
DET. LIMIT CRQL (*=IDL) / SAMPLE NUMBER:	CCM27	CCM28	CCM29	CCM30	CCM31	CCM32
UNITS:	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
5.00 methylene chloride	24.00 B	23.00 B	8.00 B	12.00 B	32.00 B	5.00 B
10.00 acetone	6.00 B	3.00 B		4.00 B	22.00 B	
5.00 carbon disulfide						
5.00 1,1-dichloroethene						
5.00 1,1-dichloroethane						
5.00 1,1,1-trichloroethane						
5.00 benzene						
5.00 toluene						
5.00 ethylbenzene						
5.00 total xylenes						

TYPE OF DATa: ****** SEMIVOLATILES **********

DILUTION FACTOR:	574.7	92.6	79.4	497.5	555.6	81.3
DET. LIMIT CRQL (*=IDL) / SAMPLE NUMBER:	CCM27	CCM28	CCM29	CCM30	CCM31	CCM32
UNITS:	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
10.00 naphthalene						
10.00 acenaphthene					690.00 L	
10.00 dibenzofuran						
10.00 diethyl phthalate						
10.00 fluorene						
10.00 phenanthrene		410.00 J			7900.00 L	
10.00 anthracene					1500.00 L	
10.00 fluoranthene	1000.00 L	620.00 J	190.00 J		9800.00 L	88.00 J
10.00 pyrene	1000.00 L	560.00 J	190.00 J		7900.00 L	91.00 J
10.00 benzo(a)anthracene	680.00 L	320.00 J	120.00 J		4600.00 L	
10.00 chrysene	620.00 J	350.00 J	130.00 J		4900.00 L	
10.00 bis(2-ethylhexyl) phthalate		280.00 B			2300.00 R	
10.00 benzo(b)fluoranthene		300.00 J			4300.00 L	
10.00 benzo(k)fluoranthene					3400.00 L	
10.00 benzo(a)pyrene		290.00 J	90.00 N		3600.00 L	
10.00 indeno(1,2,3-cd)pyrene					2300.00 L	
10.00 benzo(g,h,i)perylene		200.00 J			2400.00 L	

TYPE OF DATa: ****** PESTICIDES **********

DILUTION FACTOR:	222.0	276.0	190.0	1194.0	1333.0	195.0
DET. LIMIT CRQL (*=IDL) / SAMPLE NUMBER:	CCM28	CCM28	CCM29	CCM30	CCM31	CCM32
UNITS:	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg

Comments: **********
DUPLICATES: aq: CCM21,CCM22; sol: CCM26,CCM27

SELECTED SAMPLE ORDER

SITE NAME: Gulf Oil Darby Creek Tank Farm
SAMPLING DATE(s): 7-8-89
STATE/COUNTY CODE:
TDD NUMBER: F3-8906-07
CASE NUMBER: 12281
EPA NUMBER: PA-788
LAB NAMES: IT CERRITOS (organics) SKINNER & SHERMAN LABS (inorganics)

SAMPLE NUMBER: CCM34
SAMPLE ID: Solblk
LOCATION: TRIP BLANK

voa only

PH:
FIELD MEASUREMENTS:
PERCENT SOLIDS:

TYPE OF DATA: ****** VOLATILES **********
DILUTION FACTOR: 1.0

DET. LIMIT CRQL (*=IDL)	SAMPLE NUMBER: CCM34 UNITS: ug/l
5.00 methylene chloride	5.00 J
10.00 acetone	1.00 J
5.00 carbon disulfide	
5.00 1,1-dichloroethene	
5.00 1,1-dichloroethane	
5.00 1,1,1-trichloroethane	
5.00 benzene	
5.00 toluene	
5.00 ethylbenzene	
5.00 total xylenes	

TYPE OF DATa: ****** SEMIVOLATILES **********
DILUTION FACTOR: 0.0

DET. LIMIT CRQL (*=IDL)	SAMPLE NUMBER: CCM34 UNITS: n /a
10.00 naphthalene	
10.00 acenaphthene	
10.00 dibenzofuran	
10.00 diethyl phthalate	
10.00 fluorene	
10.00 phenanthrene	
10.00 anthracene	
10.00 fluoranthene	
10.00 pyrene	
10.00 benzo(a)anthracene	
10.00 chrysene	
10.00 bis(2-ethylhexyl) phthalate	
10.00 benzo(b)fluoranthene	
10.00 benzo(k)fluoranthene	
10.00 benzo(a)pyrene	
10.00 indeno(1,2,3-cd)pyrene	
10.00 benzo(g,h,i)perylene	

TYPE OF DATa: ****** PESTICIDES **********
DILUTION FACTOR: 0.0

DET. LIMIT CRQL (*=IDL)	SAMPLE NUMBER: CCM34 UNITS: n /a

Comments: **********
DUPLICATES: aq: CCM21,CCM22; sol: CCM26,CCM27

SELECTED SAMPLE ORDER

SITE NAME: Gulf Oil Darby Creek Tank Farm
SAMPLING DATE(s): 7-8-89
STATE/COUNTY CODE:
TDD NUMBER: F3-8906-07
CASE NUMBER: 12281
EPA NUMBER: PA-788
LAB NAMES: IT CERRITOS (organics) SKINNER & SHERMAN LABS (inorganics)

SAMPLE NUMBER:	MCBD12	MCBD13	MCBD14	MCBD15	MCBD16	MCW073
SAMPLE ID:	sw-1	sw-2	sw-3	sw-4	sw-5	mw-66
LOCATION:	se part of site, west bank of Darby Creek	duplicate of MCBD12	Darby Creek upstream recreation clear no odr	on site runoff pond no uses cldy-no odor	on site SW pond no uses clear no odr	On site mw-66 purged oily sheen
PH:	7.2	7.2	6.8	8.7	8.6	6.2
FIELD MEASUREMENTS:		no readings	no readings	no readings	no readings	no readings
PERCENT SOLIDS:						
TYPE OF DATA: INORGANICS						
DILUTION FACTOR: : GFAA	1.000	1.000	1.000	1.000	1.000	1.000
: ICP	1.000	1.000	1.000	1.000	1.000	1.000
: Hg	1.000	1.000	1.000	1.000	1.000	1.000
: CN	1.000	1.000	1.000	1.000	1.000	1.000

DET. LIMIT CRQL (@=IDL)	SAMPLE NUMBER: / UNITS:	MCBD12 ug/l	MCBD13 ug/l	MCBD14 ug/l	MCBD15 ug/l	MCBD16 ug/l	MCW073 ug/l
29.50	aluminum	174.00	138.00 B	717.00	344.00	146.00 B	92000.00
26.60	antimony						
1.60	arsenic						27.90 B
1.60	barium	62.00	62.30	87.50	10.60 B	55.80	277.00
1.50	beryllium						5.20
3.40	cadmium						6.00
26.90	calcium	30000.00	30100.00	31800.00	32500.00	23200.00	142000.00
3.90	chromium			8.00 B			191.00
5.00	cobalt						392.00
3.10	copper	7.30 B	6.40 B	56.50	8.20 B	6.90 B	156.00
6.80	iron	575.00	517.00	1990.00	606.00	745.00	139000.00
1.00	lead (anal. by GFAA)	3.60	3.00	16.00	4.90	3.50	165.00
27.40	lead (anal. by ICP)						
34.40	magnesium	12200.00	12200.00	13000.00	7840.00	6150.00	87700.00
1.70	manganese	61.90	60.70	110.00	115.00	111.00	2380.00
0.20	mercury						6.10 J
8.10	nickel	8.20 B		13.40 B	11.80 B	8.80 B	174.00
132.00	potassium	4040.00	4110.00	4230.00	4590.00	3530.00	21900.00
8.40	silver						
48.70	sodium	20700.00	20900.00	21600.00	14600.00	7130.00	127000.00
1.30	thallium						
5.00	vanadium	7.50 B		8.20 B	25.30 B	11.20 B	455.00
4.50	zinc	27.90 B	9.40 B	48.00 B	8.80 B	11.30 B	1550.00
10.00	cyanide						17.60 J

Comments:
DUPLICATES: aq: CCM21,CCM22; sol: CCM26,CCM27

SELECTED SAMPLE ORDER

SITE NAME: Gulf Oil Darby Creek Tank Farm
SAMPLING DATE(s): 7-8-89
STATE/COUNTY CODE:
TDD NUMBER: F3-8906-07
CASE NUMBER: 12281
EPA NUMBER: PA-788
LAB NAMES: IT CERRITOS (organics) SKINNER & SHERMAN LABS (inorganics)

SAMPLE NUMBER:	MCBD04	MCBD00	MCBD05	MCW074	MCBD06	MCP962
SAMPLE ID:	mwf66	mw-67	mwf67	mw-68	mwf68	mw-69
LOCATION:	see mw-66	on site mw-67 purged cloudy no od	see mw-67	on site mw-68 purged clear no odr	see mw-68	On site mw-69 purged clear no odr
PH:	6.2	5.5	5.5	6.3	6.3	6.3
FIELD MEASUREMENTS:		no readings		no readings		no readings
PERCENT SOLIDS:						
TYPE OF DATA: INORGANICS						
DILUTION FACTOR: : GFAA	1.000	1.000	1.000	1.000	1.000	1.000
: ICP	1.000	1.000	1.000	1.000	1.000	1.000
: Hg	1.000	1.000	1.000	1.000	1.000	1.000
: CN		1.000		1.000		1.000

DET. LIMIT CRQL (@=IDL)	SAMPLE NUMBER: / UNITS:	MCBD04 ug/l	MCBD00 ug/l	MCBD05 ug/l	MCW074 ug/l	MCBD06 ug/l	MCP962 ug/l
29.50	aluminum	32.10 B	58800.00		2090.00		993000.00
26.60	antimony						
1.60	arsenic	14.10 B	18.30	2.50 B	2.90 B		
1.60	barium	98.60 J	485.00	69.10 J	56.50	33.30 J	2850.00
1.50	beryllium		4.70				12.50
3.40	cadmium		3.70				18.50
26.90	calcium	58000.00	88500.00	77700.00	38800.00	38000.00	133000.00
3.90	chromium	9.10 B	167.00		11.20 B		179.00
5.00	cobalt	72.20	65.40				156.00
3.10	copper	7.00 B	75.20	3.20 B	9.20 B	17.40 B	363.00
6.80	iron	98.70 B	219000.00	32000.00	18100.00	28.80 B	177000.00
1.00	lead (anal. by GFAA)	8.80	47.30		4.80		607.00
27.40	lead (anal. by ICP)						
34.40	magnesium	72400.00	30500.00	12200.00	15900.00	15500.00	66000.00
1.70	manganese	310.00	5290.00	2750.00	1470.00	1470.00	5150.00
0.20	mercury						0.30
8.10	nickel	61.80 B	102.00		26.80 B		974.00
132.00	potassium	16100.00	25200.00	7940.00	6280.00	5800.00	16800.00
8.40	silver						
48.70	sodium	128000.00	12900.00	12400.00	74100.00	85500.00	34100.00
1.30	thallium						2.10
5.00	vanadium	7.10 B	184.00		9.40 B		2320.00
4.50	zinc	79.20 B	311.00	9.90 B	44.20 B	7.40 B	1280.00
10.00	cyanide						

Comments:
DUPLICATES: aq: CCM21,CCM22; sol: CCM26,CCM27

SELECTED SAMPLE ORDER

SITE NAME: Gulf Oil Darby Creek Tank Farm
SAMPLING DATE(s): 7-8-89
STATE/COUNTY CODE:
TDD NUMBER: F3-8906-07
CASE NUMBER: 12281
EPA NUMBER: PA-788
LAB NAMES: IT CERRITOS (organics) SKINNER & SHERMAN LABS (inorganics)

SAMPLE NUMBER:	MCBD07	MCBD02	MCBD09	MCBD03	MCBD10	MCBD11
SAMPLE ID:	mwf69	mw-107	mwf107	mw-109	mwf109	blf
LOCATION:	see mw-69	On site mw-107 purged clear no odr	see mw-107	On site mw-109 purged sed in smpl	see mw-109	(AQ) filtered blk
PH:	6.3	6.3	6.3	5.0	5.0	
FIELD MEASUREMENTS:		Hnu-4ppm		no readings		
PERCENT SOLIDS:						
TYPE OF DATA: INORGANICS						
DILUTION FACTOR: : GFAA	1.000	1.000	1.000	1.000	1.000	1.000
: ICP	1.000	1.000	1.000	1.000	1.000	1.000
: Hg	1.000	1.000	1.000	1.000	1.000	1.000
: CN		1.000		1.000		

DET. LIMIT CRQL (@=IDL)	SAMPLE NUMBER: / UNITS:	MCBD07 ug/l	MCBD02 ug/l	MCBD09 ug/l	MCBD03 ug/l	MCBD10 ug/l	MCBD11 ug/l
29.50	aluminum		13000.00		8090.00		
26.60	antimony						
1.60	arsenic		10.70			3.00 B	
1.60	barium	73.70 J	248.00	132.00 J	72.20		
1.50	beryllium						
3.40	cadmium						
26.90	calcium	78700.00	38900.00	40500.00	2170.00	1840.00 B	385.00
3.90	chromium		22.60 B		23.70 B		
5.00	cobalt		8.90		13.60		
3.10	copper		18.80 B	5.40 B	22.30 B	4.80 B	
6.80	iron	128.00 B	63900.00	7290.00	18500.00		
1.00	lead (anal. by GFAA)		16.70	1.60	13.50		
27.40	lead (anal. by ICP)						
34.40	magnesium	39300.00	19700.00	18800.00	5550.00	1000.00	68.80
1.70	manganese	2320.00	6940.00	6610.00	244.00	30.00	
0.20	mercury						
8.10	nickel	27.70 B	16.50 B		26.20 B		
132.00	potassium	967.00	14700.00	14900.00	6230.00	880.00	
8.40	silver						
48.70	sodium	20600.00	23100.00	24300.00	8170.00	8830.00	32.00
1.30	thallium						
5.00	vanadium		30.10		26.00 B		
4.50	zinc	8.00 B	62.20 B	26.60 B	69.50 B	18.70 B	11.30
10.00	cyanide						

Comments:
DUPLICATES: aq: CCM21,CCM22; sol: CCM26,CCM27

SELECTED SAMPLE ORDER

SITE NAME: Gulf Oil Darby Creek Tank Farm
SAMPLING DATE(s): 7-8-89
STATE/COUNTY CODE:
TDD NUMBER: F3-8906-07
CASE NUMBER: 12281
EPA NUMBER: PA-788
LAB NAMES: IT CERRITOS (organics) SKINNER & SHERMAN LABS (inorganics)

SAMPLE NUMBER:	MCBD17	MCBD18	MCBD19	MCBD20	MCBD21	MCBD22
SAMPLE ID:	sd-1	sd-2	sd-3	sd-4	sd-5	sd-6
LOCATION:	Darby Creek downstream matches SW-1 brown silty	Darby Creek downstream dup of sd-1 brown silty	Darby Creek upstream matches SW-3 brown sandy	run-off pond northeastern matches SW-4 brown sandy	run-off pond southwestern matches SW-5 tan silty	drainage out run-off pond no aq samp brown sandy
PH:	7.1	7.1	7.2	7.9	7.4	7.2
FIELD MEASUREMENTS:	no readings	no reading	no reading	no readings	no readings	no readings
PERCENT SOLIDS:	45.4%	51.9%	72.2%	78.0%	67.5%	54.6%
TYPE OF DATA: INORGANICS						
DILUTION FACTOR: : GFAA	0.431	0.381	0.273	0.247	0.288	0.359
: ICP	0.432	0.376	0.274	0.249	0.290	0.385
: Hg	0.988	0.845	0.629	0.586	0.712	0.803
: CN	0.110	0.096	0.069	0.064	0.060	0.090

DET. LIMIT CROL (@=IDL)	SAMPLE NUMBER: / UNITS:	MCBD17 mg/kg	MCBD18 mg/kg	MCBD19 mg/kg	MCBD20 mg/kg	MCBD21 mg/kg	MCBD22 mg/kg
29.50	aluminum	34400.00	27300.00	8690.00	9950.00	4940.00	18800.00
26.60	antimony						
1.60	arsenic	18.30	12.40	4.00	2.20 B	2.30 B	3.40 B
1.60	barium	217.00	186.00	140.00	61.70	37.60	190.00
1.50	beryllium	2.40	1.90	0.44	0.58		1.00
3.40	cadmium	5.20	2.90				1.20
26.90	calcium	3150.00	2840.00	2370.00	34400.00	19200.00	6770.00
3.90	chromium	212.00	143.00	25.70	34.40	44.50	52.30
5.00	cobalt	20.90	16.20	7.70	7.40	4.60	14.00
3.10	copper	152.00	102.00	33.90	19.70	15.00	73.70
6.80	iron	32200.00	30200.00	15200.00	17800.00	11900.00	29100.00
1.00	lead (anal. by GFAA)	122.00	120.00	146.00	38.70	39.10	158.00
27.40	lead (anal. by ICP)						
34.40	magnesium	6630.00	6290.00	3830.00	22100.00	11100.00	8800.00
1.70	manganese	277.00	209.00	167.00	353.00	319.00	388.00
0.20	mercury	2.20	1.70		0.12		0.22
8.10	nickel	36.20	30.90	15.10 B	13.00 B	10.00 B	30.30
132.00	potassium	3670.00	4210.00	2440.00	2480.00	929.00	4840.00
8.40	silver						
48.70	sodium	233.00	210.00	162.00	103.00	56.50 B	198.00
1.30	thallium						
5.00	vanadium	70.40	59.00	26.00	28.90	22.30	59.30
4.50	zinc	457.00	456.00	158.00	133.00	50.00	257.00
10.00	cyanide						

Comments:
DUPLICATES: aq: CCM21,CCM22; sol: CCM26,CCM27

SELECTED SAMPLE ORDER

SITE NAME: Gulf Oil Darby Creek Tank Farm
SAMPLING DATE(s): 7-8-89
STATE/COUNTY CODE:
TDD NUMBER: F3-8906-07
CASE NUMBER: 12281
EPA NUMBER: PA-788
LAB NAMES: IT CERRITOS (organics) SKINNER & SHERMAN LABS (inorganics)

SAMPLE NUMBER:	MCBD23	MCQ102	MCQ103	MCN244	MCN245	MCP961
SAMPLE ID:	s-0	s-1	s-2	s-3	s-4	s-5
LOCATION:	off-site bkg cemetary grass veg brown clay	on site 1 to 2 feet fine gray drk blk mtl	on site dispsl area brown-gray sndy-pbbly	ons S ofD-71 0 to 14inchs silt loam oily smell	on-site ind-accs brown sandy pbbls-bricks	on site ind-acss stress veg brown sandy
PH:	6.7	4.1	4.2	7.5	7.4	8.2
FIELD MEASUREMENTS:	no readings	Hnu-5to10ppm	Hnu-5ppm	no readings	no readings	no readings
PERCENT SOLIDS:	84.0%	50.3%	76.8%	85.7%	87.9%	76.9%
TYPE OF DATA: INORGANICS						
DILUTION FACTOR: : GFAA	0.235	0.387	0.253	0.231	0.221	0.254
: ICP	0.232	0.391	0.254	0.228	0.229	0.253
: Hg	0.531	0.872	0.530	0.531	2.110	0.623
: CN	0.059	0.099	0.650	0.059	0.056	0.064

DET. LIMIT CRQL (@=IDL)	SAMPLE NUMBER: / UNITS:	MCBD23 mg/kg	MCQ102 mg/kg	MCQ103 mg/kg	MCN244 mg/kg	MCN245 mg/kg	MCP961 mg/kg
29.50	aluminum	15900.00	2520.00	8790.00	16400.00	6830.00	8520.00
26.60	antimony						6.80 L
1.60	arsenic	5.60	29.90	5.90 L	6.20	6.50	7.40 L
1.60	barium	80.60	59.00	64.00	165.00	98.50	86.80
1.50	beryllium	0.81		0.41	0.37	0.51	0.70
3.40	cadmium			1.10		1.10	
26.90	calcium	1520.00	556.00	18800.00	13000.00	5760.00	692.00
3.90	chromium	28.00	15.50	27.20	216.00	26.20	45.40
5.00	cobalt	7.30		10.30	90.10	16.20	6.30
3.10	copper	24.10	8.60 B	20.60	120.00	35.90	35.70
6.80	iron	22100.00	6300.00	15200.00	22400.00	15300.00	53300.00
1.00	lead (anal. by GFAA)	65.20	42.10	37.20		104.00	104.00
27.40	lead (anal. by ICP)				165.00		
34.40	magnesium	2070.00	501.00	2280.00	4270.00	2510.00	513.00
1.70	manganese	376.00	20.80	209.00	901.00	310.00	58.30
0.20	mercury		3.10	1.20	2.50	2.70	0.20
8.10	nickel	13.80 B	40.40	12.90 B	71.00	18.30	11.40 B
132.00	potassium	829.00	746.00	2480.00	1350.00	1010.00	1480.00
8.40	silver						4.20
48.70	sodium	81.50 B	137.00 B	238.00	304.00	134.00	368.00
1.30	thallium						
5.00	vanadium	40.60	10.10 B	25.30	215.00	23.20	40.10
4.50	zinc	62.30	13.40 B	59.60	273.00	143.00	32.60
10.00	cyanide						

Comments:
DUPLICATES: aq: CCM21,CCM22; sol: CCM26,CCM27

SELECTED SAMPLE ORDER

SITE NAME: Gulf Oil Darby Creek Tank Farm
TDD NUMBER: F3-8906-07
LAB NAMES: IT CERRITOS (organics) SKINNER & SHERMAN LABS (inorganics)

SAMPLING DATE(s): 7-8-89
CASE NUMBER: 12281

STATE/COUNTY CODE:
EPA NUMBER: PA-788

SAMPLE NUMBER:	MCBD24
SAMPLE ID:	AqBlk
LOCATION:	aqueous blank
PH:	6.7
FIELD MEASUREMENTS:	
PERCENT SOLIDS:	
TYPE OF DATA:	INORGANICS
DILUTION FACTOR: : GFAA	1.000
: ICP	1.000
: Hg	1.000
: CN	1.000

DET. LIMIT CRQL (@=IDL)		SAMPLE NUMBER: / UNITS:	MCBD24 ug/l
29.50	aluminum		
26.60	antimony		
1.60	arsenic		
1.60	barium		
1.50	beryllium		
3.40	cadmium		
26.90	calcium		70.20
3.90	chromium		
5.00	cobalt		
3.10	copper		5.80
6.80	iron		30.20
1.00	lead (anal. by GFAA)		
27.40	lead (anal. by ICP)		
34.40	magnesium		52.30
1.70	manganese		
0.20	mercury		
8.10	nickel		12.40
132.00	potassium		
8.40	silver		
48.70	sodium		74.60
1.30	thallium		
5.00	vanadium		5.60
4.50	zinc		7.60
10.00	cyanide		

SAMPLE DATA SUMMARY

1) F3-8906-07	7) CCM18-11	7) CCM18-12	7)
2) PA-799	8) MW-71	8) MW-71	8)
3) Gulf Oil Darby Creek Tank Farm	9) WML	9) WIM	9)
4) 42 045	10) mg/Kg	10) mg/Kg	10)
5) ORGANIC	11) 1.0J	11) 50J	11)
6) WRI	12) 7.0	12) 7.0	12)
	13)	13)	13)
	14) 100	14) 100	14)
	15) mg/Kg	15) mg/Kg	15)

COMPOUNDS DETECTED	DETECT. LIMIT	RESULTS	RESULTS	RESULTS
2-Methylnaphthalene	20		810 J	
Dibenzofuran	20		160 J	
Fluorene	20		510 J	
Phenanthrene	20		1100	
Anthracene	20		120 J	
Fluoranthene	20		360 J	
Pyrene	20		330 J	
Benzo(a)anthracene	20		110 J	
Chrysene	20		220 J	
Di-n-octylphthalate	20	22 B	220 B	
Benzo(a)pyrene	20		160 J	
Aroclor-1248	10		3.8 J	

KEY:

1) TDD NUMBER
2) EPA NUMBER
3) SITE NAME
4) STATE & COUNTY CODE
5) ORGANIC OR INORGANIC
6) LABORATORY NAME
7) TRAFFIC REPORT #
8) SAMPLE IDENTIFIER
9) PHASE
10) CONCENTRATION
11) DILUTION FACTOR (BNA)
12) PH
13) FIELD MEASUREMENTS
14) PERCENT phase
15) UNITS

WML = water miscible liquid
WIL = water immiscible liquid
VOA done only on WML phase; insufficient WIL volume for VOA analysis

SAMPLE DATA SUMMARY

1) F3-8906-07		7) MCBD-01A	7) MCBD-01B			7) MCBD08
2) PA-788		8) MW-71	8) MW-71			8) MWF-71
3) Gulf Bl Darby Creek		9) AQ-WML	9) OIL			9) AQ-WML
4) 42 045		10) high	10) high			10) High
5) Inorganic		11) .40/.80/1.0/5	11) .40/.80/1.0/5			11) .38/.76/1.0
6) ChemTech data 4208 I Set 47		12) 1.6	12) 1.6	JTC data 4208 I Set 49		12) 7.0
		13)	13)			13)
		14) 87	14) 13			14) 100
		15) mg/kg	15) mg/kg			15) mg/kg
COMPOUNDS DETECTED	**DETECT. LIMIT**	**RESULTS**	**RESULTS**	**COMPOUNDS DETECTED**	**Detection Limit**	**RESULTS**
Aluminum	60	850 J	4128	Calcium	476	789 B
Antimony	20		41.7 L	Chromium	4.0	12.0
Barium	20		14.5	Lead	24	25.1 B
Calcium	27.2	660	2650 L	Manganese	1.6	5.6
Chromium	4.8		8.72	Sodium	314	1100. J
Cobalt	3.6		4.36			
Copper	13.6	18.5	25.7			
Iron	6.8	133 J	1206			
Lead	70.8					
Magnesium	28.8	211	398 L			
Manganese	13.2		26.2			
Mercury	0.08	0.3	3.2 J			
Nickel	11.2		15.2			
Sodium	285.6		287			
Zinc	6.4	19.2 L	47.6 L			

KEY:

1) TDD NUMBER
2) EPA NUMBER
3) SITE NAME
4) STATE & COUNTY CODE
5) ORGANIC OR INORGANIC
6) LABORATORY NAME
7) TRAFFIC REPORT #
8) SAMPLE IDENTIFIER
9) PHASE
10) CONCENTRATION
11) DILUTION FACTOR → RP/hydride/Hg/CN (if applicable)
12) PH
13) FIELD MEASUREMENTS
14) PERCENT phase
15) UNITS

WML = water miscible liquid

7.2 Quality Assurance Review

7.2.1 Organic Data: Lab Case 12281

7.2.1.1 Introduction

Twelve aqueous and 12 solid samples were analyzed for volatile, base-neutral, acid, pesticide, and polychlorinated biphenyl (PCB) compounds through the EPA Contract Laboratory Program (CLP). Included in this sample set were an aqueous blank and duplicate pairs for the aqueous and solid matrices. One additional sample (the trip blank) was analyzed for volatile compounds only.

The data have been fully reviewed to determine the usability of results according to the National and Regional Guidelines. (Areas examined in detail are listed in the Support Documentation appendix.) A number of problems with shifting response factors (RFs) may have adversely affected detection limit capability for several volatile and semivolatile compounds. Poor surrogate standard recoveries indicate that some results and detection limits may be biased low. Several polycyclic aromatic hydrocarbons (PAHs) were added by the reviewer. Overall data quality, however, was acceptable.

The shifting response factors and the low surrogate recoveries are the major area of concern. Blank contamination affected results for three compounds, all common laboratory contaminants.

7.2.1.2 Qualifiers

- Several compounds were detected in field or laboratory blanks. Levels of these compounds that fall within the range of blank contamination in samples have therefore been flagged (B) on the data summary as probable artifacts of contamination. The following table lists compounds found in the blanks and the results indicated to be the results of contamination:

Compound	Samples Affected
methylene chloride	all samples
acetone	all samples
bis(2-ethylhexyl) phthalate	all samples except SD-6 (sample CCM31)

The (B) flag was not applied to results in field blanks CCM33 or CCM34.

- The bis(2-ethylhexyl) phthalate result in SD-6 (sample CCM31) has been flagged unreliable (R) on the data summary. In this sample, the instrument level of bis(2-ethylhexyl) phthalate was low (4 ug/l), although slightly above the level that would be directly questioned by the bis(2-ethylhexyl) phthalate levels found in the blanks associated with this case. A study of past CLP data has shown this compound to commonly be an artifact of contamination when detected at concentrations less than 10 ug/l. Therefore, a result in this concentration range should not be considered confident.

- The volatile fraction of sample CQ623 was re-analyzed because the recovery for the d_8-toluene surrogate was above contractual control limits (although not enough to indicate a deleterious effect on the data). In the re-analysis, the recovery for the d_8-toluene surrogate was significantly higher and the recovery for the bromofluorobenzene surrogate was below control limits. Also, while the internal standard recoveries for the original volatile analysis of CQ623 were all acceptable, all three internal standard recoveries in the CQ623 re-analysis were below control limits enough to indicate a significant effect on the data. Volatiles data for the one compound detected in both analyses, methylene chloride, were therefore reported for sample CQ623 from the original analysis, where the quality control data were better. Benzene, which was detected only in the re-analysis, has been reported on the data summary but has been flagged estimated (J) because of the poor quality control data in the re-analysis.

- The semivolatile fraction of SW-5 (sample CCM25) was re-analyzed because the d_{12}-perylene internal standard was below control limits (although not enough to indicate an effect on the data). In the re-analysis, the d_{12}-perylene recovery was similarly below control limits. No target compounds were detected in either analysis. Tentatively identified compounds (TICs) were reported on the TIC summary form if they were detected in either analysis. When the same TIC was detected in both analyses, the higher concentration was listed on the TIC summary form to allow for the strongest effects indicated by the data.

- All six semivolatile surrogates were low in SD-1 and SD-6 (samples CCM26 and CCM31); the 2-fluorobiphenyl recovery in sample CCM26 was below control limits. This demonstrates reduced analytical efficiency in the semivolatile analyses of these samples, possibly due to matrix suppression.

- Detection limits for all semivolatile compounds in these two samples should be considered higher than the detection limits reported by the laboratory. Additionally, the quantitation for reported results should also be considered biased low. With the exception of the bis(2-ethylhexyl) phthalate result in sample CCM31 (which has been flagged R, as mentioned earlier), the reported results in these samples have been flagged (L) on the data summary.

- In sample CCM19, the detection limits for all phenolic compounds should be considered higher than the detection limits reported by the laboratory because the recoveries for all three phenolic surrogates were very low, with one below control limits. The recovery for the terphenyl surrogate in CCM19 was also very low (below control limits), which indicates that detection limits for similar (PAH) compounds are also biased low. In the semivolatile analysis of SD-2, SD-5, S-3, and S-4 (samples CCM27, CCM30, CP743, and CP744), all six semivolatile surrogates were lower than in the other samples or blanks. The reported semivolatile results in these samples have been flagged biased low, and the detection limits for compounds not detected should also be considered biased low. See the Support Documentation appendix for a complete list of surrogate recoveries.

- The low (below control limits) recoveries for the terphenyl surrogate in MW-67, MW-107, MW-109, MW-69, and MW-68 (samples CCM17, CCM20, CN939, and CW504) demonstrate that the detection limits for late-eluting PAHs should be considered biased low in these samples. The compounds affected are phenanthrene, anthracene, fluoranthene, benz(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(b)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, dibenz(a,h)anthracene, and benzo(g,h,i)perylene.

- Recoveries for the three acid surrogates (d_5-phenol, 2-fluorophenol, and 2,4,6-tribromophenol) were very low in the semivolatile analysis of MW-68 (sample CW505). The laboratory re-analyzed this fraction to determine if the low recoveries were the result of an extraction efficiency problem. In the re-analyses, the surrogate recoveries were similarly low, indicating that matrix interferences had inhibited the analyses. Detection limits for all acidic (phenolic) compounds should be considered higher than the detection limits reported as a result of the matrix interferences. TICs have been reported on the TIC summary form if they were detected in either the original analysis or the re-analysis. For the one TIC detected in both analyses, the higher concentration (from the original analysis) has been reported to allow for the strongest effects indicated by the data.

- The 2,4-dinitrotoluene recovery in the matrix spike of CW504 was below control limits (21 percent) and the 2,4-dinitrotoluene recovery in the CW504 matrix spike duplicate was low (although within control limits) at 28 percent. The detection limit for this compound should be considered biased low in all similar (monitoring well) samples. The samples affected are MW-66, MW-67, MW-69, MW107, and MW109 (samples CW504, CCM17, CW505, CN939, CCM19, and CCM20).

- A high (65 percent) relative percent difference was observed between the matrix spike and matrix spike duplicate recoveries for 4-nitrophenol in the matrix spike analyses performed on S-5 (sample CN938). This indicates that the detection limit for 4-nitrophenol should be considered estimated in all similar (soil) samples. The samples affected are CQ623, CQ634, CP743, CP744, and CN938. Based on the sample description, the matrix of background sample S-0 (sample CCM32) was judged to be dissimilar from the others and, therefore unaffected by the low matrix spike recoveries.

- Because of the low (although within control limits) pentachlorophenol (PCP) recovery in the matrix spike of CW504 but the acceptable PCP recovery in the matrix spike duplicate, the detection limit for PCP should also be considered estimated in all monitoring well samples. The samples affected are CCM17, CCM19 CCM20, CN939, CW504, and CW505.

- The low (although within control limits) recovery for the d_5-phenol surrogate in SW-1 (sample CCM21) indicates that the detection limit for phenol should be considered biased low in this sample. The recoveries for the d_5-phenol surrogate were also low (although within control limits) in two of the three laboratory blanks associated with the semivolatile analysis of the aqueous samples, which suggests that the cause of the low recoveries was an intermittent laboratory extraction problem. Good recoveries for the d_5-phenol surrogate in other aqueous samples demonstrate that, in all other aqueous samples with the exception of samples CCM19 and CW505 (discussed earlier), the phenol detection limit should be considered confident.

- After a review of the data, a number of PAHs were added to the data summary by the reviewer. Two of these compounds should be considered tentatively identified, and quality control data indicate that the quantitation should be considered estimated for several others. The following table lists each compound added and gives the measure of confidence that can be assigned to the presence of the compound and to the accuracy of the quantitation.

Sample	Compound Added	Reasoning Involved
CCM26	benz(a)anthracene	1
CCM27	benz(a)anthracene	1
CCM29	benz(a)anthracene	1
	benzo(a)pyrene	2
CN938	benzo(a)pyrene	2
CQ623	benzo(k)fluoranthene	3
CQ624	benzo(b)fluoranthene	4
	benzo(k)fluoranthene	4
	benzo(a)pyrene	5

Decision Criteria

1. The spectrum matched well with the reference spectrum, and the retention time for this compound agreed with the expected retention time predicted by the daily standard. The presence of benz(a)anthracene [listed on the data summary under its common name of benzo(a)anthracene] should be considered confident, and its detection in field duplicate samples CCM26 and CCM27 at similar levels is further supporting evidence for the presence and quantitation of this compound in both samples.

2. The sample spectrum matched well with the reference spectrum. The instrument level, however, was low (approximately 1 ug/l), and the retention time was slightly shifted from the retention time of benzo(a)pyrene in the daily standard. Benzo(a)pyrene was detected in related samples in this case, which supports its presence. Because of the retention time shift and the low level found, the result for this compound has been flagged tentatively identified (N) on the data summary and should not be considered confident unless confirmed by further evidence.

3. The sample spectrum matched fairly well with the reference spectrum; however, some of the lower mass/charge (m/z) ions in the distinctive 248-252 m/z cluster were missing. The retention time for this compound agreed with the expected retention time predicted by the daily standard; however, the instrument level detected was low (less than two ug/l). The compound has been flagged tentatively identified (N) on the data summary because of the missing ion peaks and because the low level detected makes comparison of peak ratios difficult.

4. There was an extraneous peak in the spectrum; however, all the characteristic ions were present, and the ratio of the distinctive high m/z peaks matched well with the standard spectrum. In this sample, the instrumentation was not able to separate benzo(b)fluoranthene and benzo(k)fluoranthene (these two isomers also almost co-eluted in the daily standard). Therefore, when calculating their concentrations, the reviewer has assigned one-half of the area of the combined benzo(b)-benzo(k)fluoranthene peak to each of the isomers. This distribution of the area is an estimate, but there is no method, based on the available information, of determining the actual distribution of the peak area between the two isomers. The reported benzo(b) and benzo(k) values should be considered estimated.

5. The sample spectrum matched well with the reference spectrum, and the retention time for this compound agreed with the expected retention time predicted by the daily standard. The quantitation has been flagged (J) because the instrument level found was below the contract required quantitation limit (CRQL). The presence of this compound, however, should be considered confident.

- The benzo(k)fluoranthene result added in sample CQ624 should also be considered estimated because the large (53.4 percent) result in the daily standard RF indicates that the instrument response was unstable.

- Detection limits should be considered estimated in a number of samples because the RF in the daily standards for these results had a large shift from the RF in the associated initial calibration. The following table lists the compounds indicated to be estimated and gives the magnitude of the change in the RF.

Date Analyzed	Instrument ID	Compound	Rf % Shift	Samples Affected
July 19, 1989		acetone	44.0	CCM26 through CCM32, CP744, CQ624, and CN938
July 19, 1989		acetone	27.3	CQ623
		bromomethane	28.7	
		styrene	25.8	
July 20, 1989		methylene chloride	33.3	CCM17, CCM19 through CCM25, and CN939
		acetone	38.9	CW505
		carbon disulfide	33.6	
July 21, 1989		carbon tetrachloride	25.6	CW504
		1,1,2,2-dichloroethane	25.8	
July 18, 1989 07:30	I	3-nitroaniline	68.8	CCM33, CW505, and CW504
July 18, 1989	I	3-nitroaniline	99.9	CCM25 re-analysis
20:45		4-chloroaniline	55.7	
July 18, 1989	J	3-nitroaniline	72.6	CCM17, CCM19 through CCM25, and CN939
		4-chloroaniline	62.6	

Date Analyzed	Instrument ID	Compound	Rf % Shift	Samples Affected
July 21, 1989	I	2-nitroaniline	40.6	CW505 re-analysis
		3-nitroaniline	84.4	
		4-chloroaniline	18.6*	
		benzoic acid	29.5	
		2-methylnaphthalene	46.6	
		2,4-dinitrophenol	38.7	
July 24, 1989	K	2,4-dinitrophenol	56.5	CCM32
		3,3'-dichlorobenzidine	37.0	
July 25, 1989	K	benzoic acid	48.9	CCM28, CCM30, CCM31, and CP743
		3,3'-dichlorobenzidine	7.8**	CP744
		hexachlorocyclopentadi-ene	39.6	
August 10, 1989	J	benzoic acid	32.1	CN938
		4-chloroaniline	44.2	
		2-nitroaniline	50.0	
		3-nitroaniline	44.2	
		benzoic acid	32.1	
		4-nitroaniline	33.3	
		benz(a)anthracene	73.6	
		benzo(k)fluoranthene	26.9	

* shift from previous continuing calibration RF was 27.1

** shift from previous continuing calibration RF was 29.2

- Detection limits for 3-nitroaniline in samples analyzed on July 18, 1989, 3-nitroaniline in samples analyzed August 1, 1989, and 4-chloroaniline and 3-nitroaniline in samples analyzed on August 9, 1989 should be considered unreliable because the RF for these compounds on those days was low (less than 0.05). (A low RF indicates decreased instrument sensitivity.)

- The below control limit aldrin recovery in the matrix spike of MW-66 (sample CW504) and low (although within control limits) aldrin recovery in the CW504 matrix spike duplicate indicate that the reported detection limit for aldrin should be considered biased low in sample CW504 and other similar (monitoring well) samples. (An examination of the matrix spike chromatograms did not reveal any interferences that would explain the low recoveries.)

- The laboratory diluted the semivolatile fractions of all solid samples and the pesticide fractions of samples CCM30, CCM31, CP743, CP744, and CW504 because high levels of interferences were detected when those samples were screened. The laboratory analyzed S-1, S-2, and S-5 (samples CQ623, CQ624, and CN938) using the medium-level protocols because of the magnitude of the interference. The laboratory correctly elevated the detection limits in the applicable samples to account for the dilution and the use of the medium-level protocols. In the medium-level analysis of sample CQ624, however, the low (although within control limits) 24 percent recovery for the dibutylchlorendate surrogate suggests that the actual detection limits for all pesticides may be even higher. Again, an examination of the sample chromatogram did not reveal any interferences that would explain the low recovery.

- Results below the calibration range of the analysis have been flagged as estimated (J), where no other flag exists.

- TICs that are not demonstrated artifacts of laboratory contaminants are summarized immediately following this report.

7.2.1.3 Support Data

The Support Documentation appendix to this report documents the above findings associated with blank contamination, poor response factors, internal standards, surrogate and matrix spike recoveries, and compounds added by the reviewer. This report has been formatted to address only those issues directly affecting the application of the data to the subject investigations. Issues pertaining to contractual compliance have been itemized on a separate report addressed to the technical project officer for the laboratory.

Report prepared by [redacted] Not responsive due to revised scope [redacted]
(215) 687-9510

Report reviewed by [redacted] Not responsive due to revised scope [redacted]
(215) 687-9510

CASE 12281 SAMPLE DATA SUMMARY: ORGANIC TENTATIVELY IDENTIFIED COMPOUNDS
SDG CCM17 (AQUEOUS)

SAMPLE NUMBER	ANALYSIS FRACTION (VOA/BNA)	ESTIMATED CONCENTRATION VALUE	UNITS	QUALIFIER CODE	COMPOUND NAME
CCM17	VOA				None detected
	BNA	40	ug/L		HEXATHIEPANE (CH_2S_6) CAS# 17233-71-5
		14		ISO	1,2,4-TRITHIOLANE ($C_2H_4S_3$) CAS# 289-16-7
		40			MOLECULAR SULFUR (S_8)
		20		ISO	4,4'-BUTYLIDENE(BIS(2-1,1-DIMETHYLETHYL)-5-METHYL PHENOL ($C_{26}H_{38}O_2$) CAS# 85-60-9
		20		ISO	4-METHY-1,1-BIPHENYL ($C_{13}H_{12}$) CAS# 644-08-6
		8		ISO	3-METHYL-9H-FLUORENE ($C_{14}H_{12}$) CAS# 2523-37-9
		12		UNK	OXYGEN CONTAINING UNKNOWN
		36		~~TOT~~	SATURATED HC (3)
		38		~~TOT~~ ~~UNK~~	UNSATURATED HC (3)
		26		~~TOT~~ ~~UNK~~	UNKNOWN (2)
CCM19	VOA				None detected
	BNA	8	ug/L	UNK	OXYGEN CONTAINING UNKNOWN
		22		UNK	UNKNOWN
CCM20	VOA				
	BNA	8	ug/L	UNK	OXYGEN CONTAINING UNKNOWN
		16		UNK	UNKNOWN
CCM21	VOA				None detected
	BNA	34	ug/L	UNK	UNKNOWN

DEFINITIONS OF QUALIFIER CODES:

SUS = SUSPECTED FALSE POSITIVE RESULT: Compound is either a common laboratory contaminant, or else a possible reaction byproduct (artifact) attributable to the chemical reagents used for sample preparation and analysis. This result is suspect even though this compound was not found in any associated blanks.

UNK = UNKNOWN COMPOUND: Library search result unreasonable or of very low matching quality.

TOT = TOTAL CONCENTRATION REPORTED: Represents the sum of several compounds detected all belonging to the same chemical class.

ISO = OR ISOMER: Compound identification is not selective for this isomer only. This result may instead represent the presence of a similar compound comprised of the same atoms bonded together in a different arrangement or substitution pattern.

HC = hydrocarbon

mix = mixture of coeluting compounds

CASE 12281
DG- CAS17 (AQ.)

SAMPLE DATA SUMMARY: ORGANIC TENTATIVELY IDENTIFIED COMPOUNDS

SAMPLE NUMBER	ANALYSIS FRACTION (VOA/BNA)	ESTIMATED CONCENTRATION VALUE	ESTIMATED CONCENTRATION UNITS	QUALIFIER CODE	COMPOUND NAME
CCM22	VOA				None detected
	BNA	16	ug/l		TRANS-2,4-DIMETHYL OXETANE ($C_6H_{10}O$) CAS# 29424-94-6
	↓	26	↓	UNK	UNKNOWN
CCM23	VOA				None detected
	BNA	10	ug/l	UNK	AROMATIC HC, PROBABLY NITROGEN CONTAINING
	↓	18	↓	UNK	OXYGEN CONTAINING HC
CCM24	VOA				
	BNA	14	ug/l	UNK	OXYGEN CONTAINING AROMATIC, POSSIBLE PHENOL
	↓	12	↓	UNK	UNKNOWN
CCM25	VOA				None detected
	BNA	40	ug/l		3-METHY-2-FURANCARBOXALDEHYDE ($C_6H_6O_2$)
		20			6-METHYL-5-METHYLENE-2-HEPTANONE ($C_9H_{16}O$)
		26			HEXADECANOIC ACID ($C_{16}H_{32}O_2$) CAS# 57-10-3
		54		TOT UNK	OXYGEN CONTAINING AROMATIC, POSSIBLE PHENOL (2)
		8		ISO	1-METHY-3-PROPYL-CYCLOHEXANE ($C_{10}H_{20}$)
		40		UNK	UNSATURATED, PROBABLY CYCLIC HC
	↓	54	↓	TOT UNK	UNKNOWN (4)
CW939	VOA				None detected
	BNA	10	ug/l	ISO	4,4'-BUTYIDENE BIS(2-1,1-DIMETHYLETHYL)-5-METHXL-PHENOL ($C_{20}H_{38}O_2$) CAS# 85-60-9
	↓(cont)	↓(cont)			

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UNK = UNKNOWN COMPOUND: Library search result unreasonable or of very low matching quality.

TOT = TOTAL CONCENTRATION REPORTED: Represents the sum of several compounds detected all belonging to the same chemical class.

ISO = OR ISOMER: Compound identification is not selective for this isomer only. This result may instead represent the presence of a similar compound comprised of the same atoms bonded together in a different arrangement or substitution pattern.

HC = hydrocarbon

mix = mixture of coeluting compounds

CASE 12281 SAMPLE DATA SUMMARY: ORGANIC TENTATIVELY IDENTIFIED COMPOUNDS
DG CC M17 (AG)

SAMPLE NUMBER	ANALYSIS FRACTION (VOA/BNA)	ESTIMATED CONCENTRATION VALUE	ESTIMATED CONCENTRATION UNITS	QUALIFIER CODE	COMPOUND NAME
CW939 (cont)	BNA (cont)	8	ug/l		SULFUR (MOLECULAR: S_8)
		20		UNK	OXYGEN CONTAINING UNKNOWN
		42		UNK	UNSATURATED HC, POSSIBLY CYCLIC
		322		TOT UNK	UNSATURATED HC (12)
		82		TOT UNK	UNKNOWN (3)
CW504	VOA	78	ug/l	TOT ISO	CYCLOHEXANE (2) (C_6H_{12})
		9			CYCLOHEXENE (C_6H_{10})
		145		TOT	SATURATED HC (3)
	BNA	2600	ug/l	UNK	UNSATURATED HC, POSSIBLY SULFUR CONTAINING
		160		UNK	UNSATURATED HC, POSSIBLY OXYGEN CONTAINING
		80		ISO	2,2'-METHYLENE-BIS(1,1-DIMETHYLETHYL)-4-METHYL PHENOL
		—		—	— ($C_{23}H_{32}O_2$) CAS# 119-47-1
		1192		TOT	SATURATED HC (6)
		3120		TOT UNK	UNSATURATED HC (10)
		320		UNK	UNKNOWN
CW505	VOA				None detected
	BNA	18	ug/l	ISO	DODECANOIC ACID ($C_{12}H_{24}O_2$) CAS# 143-07-7
		14		ISO	4,4'-BUTYLIDENE-BIS(1,1-DIMETHYLETHYL)-4-METHYL-PHENOL ($C_{23}H_{32}O_2$) CAS# 85-60-9
		14			CYCLOHEXANONE ($C_6H_{10}O$) CAS# 108-94-1

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UNK = UNKNOWN COMPOUND: Library search result unreasonable or of very low matching quality.

TOT = TOTAL CONCENTRATION REPORTED: Represents the sum of several compounds detected all belonging to the same chemical class.

ISO = OR ISOMER: Compound identification is not selective for this isomer only. This result may instead represent the presence of a similar compound comprised of the same atoms bonded together in a different arrangement or substitution pattern.

HC = hydrocarbon

mix = mixture of coeluting compounds

CASE 12281 SAMPLE DATA SUMMARY: ORGANIC TENTATIVELY IDENTIFIED COMPOUNDS

SDG CCM26 (SOLID)

SAMPLE NUMBER	ANALYSIS FRACTION (VOA/BNA)	ESTIMATED CONCENTRATION VALUE	UNITS	QUALIFIER CODE	COMPOUND NAME
CCM26	VOA				None detected
	BNA	2600	mg/kg	UNK	UNSATURATED HC
CCM27	VOA				None detected
	BNA	2300	mg/kg	ISO	LANOST-8-EN-3-OL [$C_{30}H_{52}O$] CAS# 79-62-9
		4000		ISO	LANOST-7-EN-3-ONE [$C_{30}H_{50}O$] CAS# 555515-18-9
		2300			SULFUR (S_8) CAS# 10544-50-6
		6900		TOT	SATURATED HC (2)
		5700		TOT UNK	UNSATURATED HC (2)
CCM28	VOA				None detected
	BNA	650	mg/kg	ISO	CHOLESTEROL ($C_{22}H_{46}O$) CAS# 57-88-5
		460			CHOLESTEROL DERIVITIVE
		740			SULFUR (S_8) CAS# 10544-50-6
		370		UNK	UNSATURATED HC
CCM29	VOA				None detected
	BNA				None detected
CCM30	VOA				None detected
	BNA	5500	mg/kg	TOT	TRITERPANE HC (2)
		2000			SULFUR (S_8) CAS# 10544-50-6
		2500		UNK	UNSATURATED HC

DEFINITIONS OF QUALIFIER CODES:

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UNK = UNKNOWN COMPOUND: Library search result unreasonable or of very low matching quality.

TOT = TOTAL CONCENTRATION REPORTED: Represents the sum of several compounds detected all belonging to the same chemical class.

ISO = OR ISOMER: Compound identification is not selective for this isomer only. This result may instead represent the presence of a similar compound comprised of the same atoms bonded together in a different arrangement or substitution pattern.

HC = hydrocarbon

mix = mixture of coeluting compounds

CASE 12281
SDG CCm26(SCL10)

SAMPLE DATA SUMMARY: ORGANIC TENTATIVELY IDENTIFIED COMPOUNDS

SAMPLE NUMBER	ANALYSIS FRACTION (VOA/BNA)	ESTIMATED CONCENTRATION VALUE	UNITS	QUALIFIER CODE	COMPOUND NAME
CCm31	VOA				None detected
	BNA	10000	ug/kg	ISO	Cholesterol ($C_{27}H_{46}O$) CAS# 57-88-5
		6700		ISO	Gamma. SITOSTEROL ($C_{29}H_{50}O$) CAS# 83-47-6
		4400		ISO	CHOLESTAN-3-OL ($C_{27}H_{48}O$) CAS# 516-95-0
		3300		ISO	BENZO (J) FLUORANTHENE ($C_{20}H_{12}$) CAS# 205-82-3
		20500		TOT	SATURATED HC (3)
CCm32	VOA				
	BNA	650	ug/kg	ISO	GAMMA. SITOSTEROL ($C_{29}H_{50}O$) CAS # 83-47-6
		410		ISO	STIGMASTEROL ($C_{29}H_{48}O$)
		330		ISO	ERGOST-5-EN-3-OL [$C_{28}H_{48}O$] CAS# 4651-51-8
		740		TOT UNK	UNKNOWN STEROL (2)
		1600			SATURATED HC
		3540		TOT UNK	UNSATURATED HC (3)
CN938	VOA				None detected
	BNA	3200	ug/kg	ISO	1,4-DICHLORO-2-ISOCYANATO-BENZENE ($C_7H_3ONCL_2$)
					CAS# 5392-82-5
		4100		ISO	1,2,4,5-TETRAKIS-(1-METHYLETHYL) BENZENE ($C_{18}H_{30}$) CAS# 635-11-0
		7200		TOT ISO	TRIS (1-METHYLETHYL) BENZENE ($C_{15}H_{24}$) CAS# 27322-34-5 (2)
		2300		ISO	HEXAHYDRO-1,6-DIMETHYL-4-(1,METHYL ETHYL)—
					NAPHTHALENE ($C_{15}H_{24}$) CAS# 16728-99-7
		9900		TOT ISO	1,1-DIMETHYL BUTYL BENZENE ($C_{12}H_{18}$) CAS# 885-57-5 (2)
		2700		ISO	1-METHYLETHYL BENZENE (C_9H_{12}) CAS# 98-82-8
		2300		ISO	1-(ETHYL PROPYL)-2-PROPYL BENZENE ($C_{14}H_{22}$) CAS# 54789-15-0
(cont)	(cont)	2700		ISO	1-(2,4,5-TRIMETHYL PHENYL) ETHANONE ($C_{11}H_{14}O$) CAS# 2040-07-5

DEFINITIONS OF QUALIFIER CODES:

SUS = SUSPECTED FALSE POSITIVE RESULT: Compound is either a common laboratory contaminant, or else a possible reaction byproduct (artifact) attributable to the chemical reagents used for sample preparation and analysis. This result is suspect even though this compound was not found in any associated blanks.

UNK = UNKNOWN COMPOUND: Library search result unreasonable or of very low matching quality.

TOT = TOTAL CONCENTRATION REPORTED: Represents the sum of several compounds detected all belonging to the same chemical class.

ISO = OR ISOMER: Compound identification is not selective for this isomer only. This result may instead represent the presence of a similar compound comprised of the same atoms bonded together in a different arrangement or substitution pattern.

HC = hydrocarbon

mix = mixture of coeluting compounds

CASE 12281
SDG Com26 (SC110)

SAMPLE DATA SUMMARY: ORGANIC TENTATIVELY IDENTIFIED COMPOUNDS

SAMPLE NUMBER	ANALYSIS FRACTION (VOA/BNA)	ESTIMATED CONCENTRATION VALUE	ESTIMATED CONCENTRATION UNITS	QUALIFIER CODE	COMPOUND NAME
CN938	BNA	5600	ug/kg	UNK	AROMATIC ALDEHYDE e.g. 2,5-DIMETHYL BENZALDEHYDE
(Cont)	(Cont)	3200		UNK	PHENOL, UNKNOWN STRUCTURE
		2300		UNK	OXYGEN CONTAINING UNKNOWN, POSSIBLE STEROL
		7700		TOT UNK	POSSIBLE $C_{15}H_{24}$ NAPHTHALENE DERIVITIVE (2)
		9900		TOT UNK	UNSATURATED HC (3)
		4100		TOT UNK	UNKNOWN (2)
CP743	VOA	18	ug/kg	TOT ISO	CYCLOHEXANE ISOMER (C_6H_{12}) (2)
		10		TOT UNK	UNSATURATED HC (2)
	BNA	4400		ISO	1,1':2',1''-TERPHENYL ($C_{18}H_{14}$) CAS# 1812-51-7
		4400		ISO	2,3-DIMETHYL-PHENANTHRENE ($C_{16}H_{14}$) CAS# 3674-65-5
		2800		ISO	2-METHYL-ANTHRACENE ($C_{15}H_{12}$) CAS# 613-12-7
		3200		ISO	2-ETHYL-1,1'-BIPHENYL ($C_{14}H_{14}$) CAS# 1812-51-7
		11600		TOT ISO	2-METHYL-PYRENE ($C_{17}H_{12}$) CAS# 3442-78-2 (2)
		4000		ISO	5,8-DIMETHYL-BENZO(C) PHENANTHRENE ($C_{20}H_{16}$) ~~CAS#~~
					— CAS# 54986-63-9
		8000		ISO	3-METHYL-CHRYSENE ($C_{19}H_{14}$) CAS# 3351-31-3
		5200		UNK	MOLECULAR WEIGHT 224 AROMATIC, POSSIBLY $C_{19}H_{16}$
		2000		ISO	1,4,6-TRIMETHYL-NAPHTHALENE ($C_{13}H_{14}$) CAS# 2131-42-2
		17600		TOT UNK	OXYGEN CONTAINING UNKNOWN (4)
		3200			SATURATED HC
		8400		TOT UNK	UNSATURATED HC (2)
		6400		TOT UNK	UNKNOWN (2)
CP744	VOA				None detected
	BNA				None detected

DEFINITIONS OF QUALIFIER CODES:

SUS = SUSPECTED FALSE POSITIVE RESULT: Compound is either a common laboratory contaminant, or else a possible reaction byproduct (artifact) attributable to the chemical reagents used for sample preparation and analysis. This result is suspect even though this compound was not found in any associated blanks.

UNK = UNKNOWN COMPOUND: Library search result unreasonable or of very low matching quality.

TOT = TOTAL CONCENTRATION REPORTED: Represents the sum of several compounds detected all belonging to the same chemical class.

ISO = OR ISOMER: Compound identification is not selective for this isomer only. This result may instead represent the presence of a similar compound comprised of the same atoms bonded together in a different arrangement or substitution pattern.

HC = hydrocarbon

mix = mixture of coeluting compounds

CASE 12281
SDG CCM26 (SA10)

SAMPLE DATA SUMMARY: ORGANIC TENTATIVELY IDENTIFIED COMPOUNDS

SAMPLE NUMBER	ANALYSIS FRACTION (VOA/BNA)	ESTIMATED CONCENTRATION VALUE	UNITS	QUALIFIER CODE	COMPOUND NAME
CQ623	VOA				None detected
	BNA	33400	ug/kg	TOT ISO	TRIS(1-METHYLETHYL) BENZENE ($C_{15}H_{24}$) CAS# 27322-34-5
		4900		ISO	1,1,2-TRIMETHYL PROPYL-BENZENE ($C_{12}H_{18}$) CAS# 26356-11-6 (2)
		88800		TOT ISO	1-METHYL PENTYL BENZENE ($C_{12}H_{18}$) CAS# 6031-02-3 (4)
		10500		TOT ISO	1-(1-METHYLETHENYL)-3-(1-METHYLETHYL)-
					BENZENE ($C_{12}H_{16}$) CAS# 1129-29-9 (2)
		8600		ISO	1,1'-[1,1,2,2-TETRAMETHYL)-1,2-ETHANEDIYL]-BIS-
					BENZENE ($C_{18}H_{22}$) CAS# 1889-67-4
		15,000		ISO	1,1'-(1-METHYLETHYLIDENE)-BIS-BENZENE [$C_{15}H_{16}$) CAS# 778-22-3
		8600		ISO	1,1-DIMETHYL PROPYL BENZENE ($C_{11}H_{16}$) CAS# 2049-95-8
		32,000		ISO	2,3-DIHYDRO-1,1,3-TRIMETHYL-3-PHENYL-1H-INDENE
					($C_{18}H_{20}$) CAS# 3910-35-8
		6800		ISO	1-METHYL ETHYL BENZENE (C_9H_{12}) CAS# 98-82-8
		35,000		ISO	1-(2,4,5-TRIMETHYL PHENYL) ETHANONE ($C_{11}H_{14}O$) CAS# 2040-07-5
		16,000		ISO	3-(2,66-TRIMETHYL-1-CYCLOHEXEN-1-YL)-2-PROPENAL
					+ COELUTING UNKNOWN ($C_{12}H_{18}O$) CAS# 4951-40-0
		64 600		TOT UNK	OXYGEN CONTAINING AROMATIC (4)
CQ624	VOA				None detected
	BNA	3 900	ug/kg	ISO	2,3-DIHYDRO-1,1,3-TRIMETHYL-3-PHENYL-1H-INDENE
					($C_{18}H_{20}$) CAS# 3910-35-8
		1800		ISO	BENZO(J) FLUORANTHENE ($C_{20}H_{12}$) CAS# 205-82-3
		4400		TOT ISO	1,3,5-TRIS-(1-METHYLETHYL) BENZENE ($C_{15}H_{24}$) CAS# 717-74-8 (2)
		17100		TOT ISO	1,3-BIS(1-METHYLETHYL) BENZENE ($C_{12}H_{18}$) CAS# 99-62-7 (5)
		1800		ISO	1-METHYLETHYL BENZENE (C_9H_{12}) CAS# 98-82-8
		1800		UNK	UNSATURATED HC

DEFINITIONS OF QUALIFIER CODES:

SUS = SUSPECTED FALSE POSITIVE RESULT: Compound is either a common laboratory contaminant, or else a possible reaction byproduct (artifact) attributable to the chemical reagents used for sample preparation and analysis. This result is suspect even though this compound was not found in any associated blanks.

UNK = UNKNOWN COMPOUND: Library search result unreasonable or of very low matching quality.

TOT = TOTAL CONCENTRATION REPORTED: Represents the sum of several compounds detected all belonging to the same chemical class.

ISO = OR ISOMER: Compound identification is not selective for this isomer only. This result may instead represent the presence of a similar compound comprised of the same atoms bonded together in a different arrangement or substitution pattern.

HC = hydrocarbon

mix = mixture of coeluting compounds

7.2.2 Inorganic Data: Lab Case 12281

7.2.2.1 Summary

Twelve solid samples and 12 unfiltered aqueous samples were analyzed for total metals and cyanide through the EPA CLP under case 12281. Included in the sample set were two duplicate pairs and one field blank. In addition, seven filtered aqueous samples (including one blank and one duplicate pair) were submitted only for metals analysis. The sample set was divided into two sample delivery groups (SDG). With the exception of blank data, no quality control information has been cross-applied.

The data have been fully reviewed to determine the usability of results according to the National and Regional guidelines. (Areas examined in detail are listed in the Support Documentation appendix.) Data quality was good for most metals and for cyanide. Detection limit capability was demonstrated for most analytes by meeting criteria for holding times, spike recoveries, calibration check standards, low-level standards, and linear range analyses. Other than blank contamination, there were a few quality control problems, which affected some results.

Areas of concern include blank contamination, several low matrix spike and post-digestion spike recoveries, several miscalculated results, and serial dilution imprecision for two metals.

7.2.2.2 Qualifiers

- The reviewer corrected a number of results that were either miscalculated, misreported, or not reported by the laboratory. The following table summarizes the changes made by the reviewer to the data summary and the reasons for these changes.

Sample	Element	Result Reported by Laboratory	Result Reported by Reviewer	Reason
MCP961	arsenic	2.7 mg/kg	7.4 mg/kg	1
MCN244	lead	79.4 mg/kg	165.0 mg/kg	2
MCN245	mercury	10.4 mg/kg	2.7 mg/kg	3
MCW073	mercury	not detected (elevated detection limit)	6.1 ug/l	4
MCP962	mercury	not detected	0.3 ug/l	5

Reasons:

1. The post-digestion spike recovery for the initial analysis was zero percent. The laboratory diluted and re-analyzed the sample, which yielded a 74 percent post-digestion spike recovery. The laboratory did not use this analysis to report the result; however, this result was reported by the reviewer and flagged (L), biased low, because of the slightly low recovery.

2. The result for lead in the plasma analysis of this sample was 165 mg/kg, and the initial furnace result was 200 mg/kg, with a 124 percent post-digestion spike recovery (suggesting that the result may be slightly lower). The laboratory re-analyzed this sample by the method of standard additions (MSA) and seemed to omit an additional dilution factor of two upon calculating the result. Therefore, the reviewer has reported the result from the plasma data, which represent a confident value.

3. The laboratory diluted the sample by a factor of four before the digestion process for mercury. When the sample result was being calculated, the laboratory multiplied the instrument level result by 16, not by 4. Therefore, the actual sample result should be one-fourth the result reported by the laboratory.

4. The result for mercury in this sample was just above the calibration range of the analysis. Because there was only limited sample volume remaining after analysis, the laboratory used a smaller sample aliquot (one-fiftieth of the original sample weight), which caused the resulting instrument level value to be below the contract required quantitation limit (CRQL). The laboratory reported a not-detected result that was 50 times the CRQL (10 U) to take the dilution factor into account. The reviewer calculated a result based on the peak height displayed on the raw data for the initial undiluted analysis and reported this result and flagged it (J), estimated, because the result is greater than the highest calibration standard.

5. The instrument level result for this sample was greater than the CRQL for mercury (0.2 ug/l) but was not reported by the laboratory. The reviewer has reported the positive result on the data summary.

- Several metals were detected in the laboratory and field blanks. Consequently, several results have been flagged as undetected due to blank contamination (B) because the levels of the following metals in the associated samples are not significantly higher than the levels of these metals in all associated blanks. The following table lists each metal and all affected results.

Metal	Affected Samples
aluminum	MCBD04, MCBD13, and MCBD16
arsenic	MCBD04, MCBD05, MCBD10, MCBD20 through MCBD22, MCWO73, and MCW074
barium	MCBD15
copper	solid sample MCQ102 and all aqueous results except MCBD00, MCBD14, MCW073, MCP962, and MCBD24 (the field blank)
calcium	MCBD10
chromium	MCBD02, MCBD03, MCBD04, MCBD14, and MCWD74
iron	MCBD04, MCBD06, and MCBD07
nickel	MCBD02 through MCBD04, MCBD07, MCBD14 through MCBD16, MCBD12, MCBD19, MCBD20, MCBD21, MCBD23, MCP961, MCQ103, and MCW074
sodium	MCBD21, MCBD23, and MCQ102
vanadium	all aqueous samples, except MCW073, MCBD00, MCBD24, and MCP962; solid sample MCQ102
zinc	all aqueous samples except MCBD00, MCBD11, MCP962, MCBD24, and MCW073; solid sample MCQ102

- The matrix spike and post-digestion spike recoveries were both slightly low for thallium in filtered aqueous sample MCBD04. This indicates sample-specific matrix effects that suppressed the instrument response to this element. The detection limit may be higher than reported for thallium for this sample.

- The matrix spike and post-digestion spike recoveries for arsenic and selenium were zero for filtered aqueous sample MCBD04. Even upon dilution and re-analysis, the post-digestion spike recoveries were still quite low. This suggests substantial matrix effects for this sample, and detection limits for selenium may be much higher than reported for MCBD04 and the positve result for arsenic, even though flagged (B), may be higher than reported. Slightly low post-digestion spike recoveries were observed for selenium in filtered samples MCBD05 and MCBD10; detection limits for selenium may be slightly higher than reported in these two samples.

- Substantial matrix effects were also seen for these two metals (arsenic and selenium) in unfiltered aqueous sample MCW073, which represents the unfiltered counterpart of sample MCBD04. Both the matrix spike and post-digestion spike recoveries were zero, and, upon dilution and re-analysis, the post-digestion spike recoveries were still at or near zero percent. Therefore, the detection limit for selenium may be much higher than reported in this sample, and the positive result for arsenic, even though flagged (B), may be higher than reported as well. A low post-digestion spike recovery was seen for selenium in sample MCBD02; the detection limit may be higher than reported for selenium in this sample.

- A 54 percent matrix spike recovery was obtained for silver in aqueous filtered sample MCBD04. Detection limits for silver may be slightly higher than reported in all filtered aqueous samples.

- A low matrix spike recovery was observed for antimony in solid sample MCBD17. Consequently, the positive result for sample MCP961 has been flagged as biased low (L), and the detection limits for antimony may be higher than reported in all other solid samples.

- The antimony result in sample MCP961 may be further considered estimated because of the substantial variation between the three intensity readings seen for the plasma analysis of this sample. (Two of the readings were below the instrument detection limit.) Further information may be useful in establishing the actual level for antimony in this sample.

- The matrix spike recovery for thallium in solid sample MCBD17 was just under 10 percent, whereas the corresponding post-digestion spike recovery was 100 percent. Because these data indicate digestion loss, the detection limits for thallium may be higher than reported in all solid samples.

- The post-digestion spike recovery for arsenic was zero percent in aqueous sample MCP692. The laboratory diluted the sample 5 times and then 10 times, and the recovery in the 10-times dilution was 100 percent. The laboratory reported the detection limit as 7.0 U ug/l. However, the more accurate detection limit is 10 times the instrument detection limit (IDL) or 14 U ug/l.

- Low post-digestion spike recoveries were noted for selenium in samples MCBD00 and MCP962. Even upon dilution and re-analysis, the recoveries were still quite low, suggesting that the detection limits for selenium may be much higher than reported in both samples because of substantial matrix effects.

- A low post-digestion spike recovery (although not low enough to require dilution and re-analysis) was observed for arsenic in solid sample MCQ103. The positive result for this metal may be higher than reported and is flagged (L).

- All filtered aqueous results for barium have been flagged as estimated because of serial dilution imprecision for sample MCBD04. The initial, undiluted result was higher than the diluted result, suggesting matrix enhancement of the signal for barium in filtered samples.

- Laboratory duplicate imprecision was noted for cyanide in aqueous sample MCW073. The result has been flagged as estimated (J). Suspended solid content may have contributed to the large difference in results. (Cyanide ions, when present, are often bound to particulate matter.) The laboratory analyzed this sample and the laboratory duplicate twice, with nearly identical results.

- All lead results (except for MCW244) were reported from the furnace analysis. Good agreement was seen between the furnace and plasma results for all solid samples and for aqueous samples MCP692 and MCW073. The instrument levels for these samples were at least 100 ug/l.

7.2.2.3 Support Data

The Support Documentation appendix to this report documents the above findings associated with blank contamination, misreported and miscalculated results, laboratory duplicate and serial dilution imprecision, and low spike recoveries. This report has been formatted to address those issues directly affecting the application of the data to the subject investigation. (Issues pertaining to laboratory contractual compliance are addressed on a separate form directed to the laboratory technical project officer.)

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SAS

SAMPLE DATA SUMMARY: ORGANIC TENTATIVELY IDENTIFIED COMPOUNDS

SAMPLE NUMBER	ANALYSIS FRACTION (VOA/BNA)	ESTIMATED CONCENTRATION VALUE	ESTIMATED CONCENTRATION UNITS	QUALIFIER CODE	COMPOUND NAME
CCM18-11	VOA	4	mg/kg	MIX/ISO	Mixture of $C_{10}H_{12}$ aromatic, such as cyclobutylbenzene, and $C_{11}H_{14}$ aromatic, such as 1-ethyl-2,3-dihydro indene.
CCM18-11	BNA	5	mg/kg	UNK	unknown
CCM18-12	BNA	1700	mg/kg	TOT	saturated hydrocarbons, C_{14} or larger (3)
		2200		TOT/ISO	$C_{12}H_{12}$ aromatic - such as 1,7-dimethylnaphthalene (3)
		1200		TOT/ISO	$C_{13}H_{12}$ aromatic - such as methyl ethyl naphthalene (2)
		700		ISO	$C_{13}H_{12}$ aromatic - such as 1-(2-propenyl)-naphthalene
		1400		TOT/ISO	$C_{15}H_{12}$ PAH - such as 2-methyl anthracene (3)
		2500		TOT/ISO	$C_{16}H_{14}$ PAH - such as 2,5-dimethyl phenanthrene (4)
		1700		TOT/ISO	$C_{17}H_{14}$ PAH - such as 2,3,5-trimethyl phenanthrene (2)
		600		ISO	$C_{18}H_{14}$ PAH such as 1,1',2',1''-terphenyl
		400		UNK	poss aromatic
		300,000	mg/kg	-	unresolved HC matrix

DEFINITIONS OF QUALIFIER CODES:

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UNK = UNKNOWN COMPOUND: Library search result unreasonable or of very low matching quality.

TOT = TOTAL CONCENTRATION REPORTED: Represents the sum of several compounds detected all belonging to the same chemical class.

ISO = OR ISOMER: Compound identification is not selective for this isomer only. This result may instead represent the presence of a similar compound comprised of the same atoms bonded together in a different arrangement or substitution pattern.

ND = none detected

(un) Sat'd = (un) saturated

HC = hydrocarbon

PAH = polynuclear aromatic HC

7.2.3 High-Concentration Organic Data: SAS 4368I Set 41

7.2.3.1 Introduction

One high-concentration organic sample consisting of two phases (water-miscible liquid and water-immiscible liquid) was submitted to be analyzed for volatile, acid extractable, base-neutral extractable, polychlorinated biphenyl (PCB), and pesticide compounds through the Special Analytical Services (SAS) provision of the EPA CLP, utilizing the February 1988 revision of the Organic High Concentration Statement of Work (SOW).

The data have been fully reviewed to determine the usability of results according to the National and Regional guidelines. (Areas that were examined in detail are listed in the Support Documentation appendix.) Overall, data quality was good, with detection limit capability demonstrated for nearly all compounds by meeting criteria for surrogate and matrix spike recoveries and instrument tuning and calibrations. Few problems were associated with these data, and few results were affected by the minor problems that were found.

7.2.3.2 Qualifiers

- Only the water-miscible phase was analyzed for volatile organic compounds (VOCs); the volatile containers contained only this phase (as noted on the traffic report by the laboratory). Two phases were present in the semivolatile sample containers, and both phases were analyzed for semivolatile compounds.

- Di-n-octyl phthalate was detected in the laboratory extraction blank at a level high enough to question the results for this compound in both phases. Therefore, both results for di-n-octyl phthalate have been flagged (B) and are considered to be artifacts of laboratory contamination.

- A slightly low control matrix spike recovery was observed for pentachlorophenol. The detection limit for this compound may be slightly higher than reported in both phases, especially the water-immiscible phase.

- A low response factor (RF) was seen for 2-butanone. Detection limits may be higher than reported for this compound for the water-miscible phase. This low RF is a common problem with this compound because EPA requires the use of a quantitation ion that is a minor component of the mass spectrum for this compound.

- Results that are below the range of accurate quantitation have been flagged as estimated (J), where no other flag exists.

- The result for Aroclor 1248 in the water-immiscible phase is considered confident. This compound exhibited the characteristic multi-peak pattern on both chromatographic columns, and all peaks exhibited an excellent match with the reference standards in terms of retention times and peak areas. The instrument level concentration was too low to be verified by gas chromatography/mass spectrometry (GC/MS).

- Tentatively identified compounds (TICs) that are not artifacts of laboratory contamination are summarized immediately following this report.

7.2.3.3 Support Data

The Support Documentation appendix to this report documents the above findings associated with blank contamination, the low recovery for the surrogate, and the low 2-butanone RF. This report has been formatted to address only those issues directly affecting the application of the data to the subject investigation. Issues pertaining to contractual compliance have been itemized on a separate report, addressed to the technical project officer for the laboratory.

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7.2.4 Inorganic Data: SAS 4208I Set 47

7.2.4.1 Summary

One liquid sample consisting of an aqueous phase and an oil phase were submitted for metals, cyanide, and sulfide through the SAS provision of the CLP. These samples were to be analyzed according to the most recent revision of the High Concentration Inorganic SOW.

The data have been fully evaluated to determine the usability of results according to the National and Regional guidelines. (Areas examined in detail are listed in the Support Documentation appendix.) Data quality was acceptable for most analytes for the aqueous phase (A) but was not as good in general for the oil phase analyses (B). Areas of concern include low spike recoveries, contractual deviations, and laboratory and field duplicate imprecision.

It should be noted that the laboratory misidentified the water-immiscible phase of sample MCBD01-B as a solid sample on the data report form, spike recovery form, and duplicate analysis form. This misidentification has no effect on the data, however.

7.2.4.2 Qualifiers

- Under this SAS, one bi-phasic sample was shipped to the CLP laboratory to be analyzed for total metals, and a bi-phasic sample from the same sampling location was shipped to a different CLP laboratory to be analyzed for dissolved metals (the narrative discussing that data, SAS 4208I Set 49, follows this report.) Due to a miscommunication with the Sample Management Office (SMO), the aqueous phase of the sample in set 49 was also analyzed for total metals, not dissolved metals. Therefore, the data for MCBD01A in this sample set should be equivalent to the data for sample MCBD08 in set 49. In effect, these two samples can be considered field duplicates. The two sets of results indicate imprecision for aluminum, iron, and zinc; these elements were detected in sample MCBD01A at levels substantially higher than the method detection limits for both analyses, but these three metals were not detected in sample MCBD08. Consequently, these three results have been flagged as estimated (J) for sample MCBD01A [except zinc, which is flagged (L) and discussed later in this report]. Sodium was detected only in sample MCBD08, set 49, and has also been flagged (J).

- No results were reported for molybdenum, silicon, and titanium. The Target Analyte List and the SAS request specifically include these three metals. The raw instrument data do not indicate that these three elements were analyzed for in any sample. If these three metals are suspected to be present, re-analysis may be necessary.

- The laboratory did not perform an analytical duplicate for either sample. The SOW clearly indicates that "one sample dissolution must be analyzed twice to estimate the analysis precision."[1] Consequently, analysis precision (how well two analyses of the same sample digestate agree with each other) cannot be determined. However, an estimate of method precision (agreement between two separate digestions of the same sample) was obtained through the use of a method duplicate. (Method duplicates measure both analysis precision and preparation homogeneity and did not reveal any problems.)

- The laboratory did not perform an analytical spike for any of the non-hydride metals, except mercury. Consequently, no information regarding possible post-preparation matrix effects on the recovery of most metals is available, and no conclusions about possible effects on the data can be drawn. This analysis is also required by the SOW.[1] However, a method spike was done that monitors the accuracy of sample preparation and instrument effects.

- The laboratory did not analyze either sample for sulfide; this analysis was also requested in the SAS request.

- Very low pre-fusion (matrix) spike recoveries were noted for antimony and selenium in sample MCBD01A. Because the post-digestion spike recoveries were good, loss of these analytes may have occurred during the hydride preparation step or the low recoveries may be attributable to the lack of effectiveness of the fusion process in dissolving this metal from the matrix. Detection limits for both metals may be much higher than reported in this sample.

- The arsenic detection limit may be slightly higher than reported in sample MCBD01A. The pre-digestion matrix spike recovery was slightly low, at 56 percent. The post-digestion spike recovery was acceptable, which again suggests loss during the hydride preparation step or lack of effectiveness of the fusion process in dissolving this metal from the matrix.

- The pre-fusion spike recoveries were low for antimony, calcium, magnesium, selenium, silver, thallium, and zinc for sample MCBD01B (oil phase). Because analytical spikes were not performed for calcium, magnesium, silver, thallium, or zinc, it is not possible to determine if the fusion process was able to dissolve these elements or their complexes from the matrix or if a post-fusion matrix effect caused these low recoveries. Consequently, the positive results for antimony, calcium, magnesium, and zinc have been flagged as biased low (L) in sample MCBD01B, and the detection limits for selenium, silver, and thallium may be higher than reported.

[1]Inorganic High Hazard Analysis Statement of Work, February 1985, page D-42.

ORIGINAL (Red)

- The zinc result in sample MCBD01-A has been flagged (L), biased low. The matrix spike recovery for this metal was slightly low, suggesting that the sample result may be higher than reported.

- Substantial laboratory duplicate imprecision was seen for mercury for sample MCBD01B. The initial analysis indicated that mercury was not detected, whereas the method duplicate analysis indicated that 3.2 mg/kg of this metal was detected. As a worst-case approach, the reviewer has reported the positive value for mercury, flagged as estimated (J). Because it cannot be determined if the aliquot used for the duplicate was accidentally spiked by the laboratory, or if a different sample was mislabeled, further information would be necessary to verify the mercury level in this sample.

7.2.4.3 Support Data

The Support Documentation appendix to this report documents the above findings associated with blank contamination, duplicate imprecision, and low spike recoveries. The text of this report has been formatted to address only those issues directly affecting the application of the data to the subject investigation. (Issues pertaining to laboratory contractual compliance are addressed on a separate form directed to the technical project officer.)

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ORIGINAL (Red)

7.2.5 High-Hazard Inorganic Data: SAS 4208I Set 49

7.2.5.1 Introduction

One liquid sample consisting of two phases (water and oil) were submitted for a dissolved metals analysis under the SAS provision of the CLP. This was to be accomplished by the separation of the phases by the laboratory, followed by filtration and analysis only of the aqueous phase. The phase separation was done but, because of a miscommunication with SMO, the sample was not filtered. Therefore, the results for MCBD08 represent total metals and, in principle, should be equivalent to sample MCBD01A, analyzed under SAS 4208I, set 47 (both samples represent the same sampling location and, in effect, are field duplicates).

The data have been fully reviewed to determine the usability of results according to the National and Regional guidelines (areas examined in detail are listed in the Support Documentation appendix). Overall, data quality was acceptable. The principal area of concern is some disagreement with the results between the field duplicates (MCBD01A and MCBD08). Although analyzed by the same method, results for set 49 were somewhat different than those obtained in set 47.

7.2.5.2 Qualifiers

- Under this SAS, one bi-phasic sample was shipped to the CLP laboratory for phase separation followed by filtration and subsequent analysis of only the aqueous phase. The laboratory did perform the phase separation but, due to a miscommunication with SMO, did not filter the aqueous phase. Therefore, a total metals analysis was done on the aqueous phase of sample MCBD08. At the same time, another bi-phasic sample from the same location was sent to a different CLP laboratory for a total metals analysis on both phases, which was done and is discussed in the preceding text (SAS 4208I Set 47). Therefore, the data for MCBD01A in sample set 47 should be equivalent to the data for sample MCBD08 in this sample set. In effect, these two samples can be considered field duplicates. The two sets of results indicate imprecision for aluminum, iron, sodium, and zinc. Aluminum, iron, and zinc were detected in sample MDBD01A at levels substantially higher than the method detection limits for both analysis, but these three metals were not detected in sample MCBD08. Consequently, these three results have been flagged as estimated (J) for sample MCBD01A (set 47). Sodium, however, was detected only in sample MCBD08 at a level high enough that this metal should have been detected in sample MCBD01-A. Consequently, this result has been flagged (J) as well.

ORIGINAL (Red)

- The results for lead and calcium have been flagged as undetected due to blank contamination (B). The instrument level results for these metals in sample MCBD08 were not substantially higher than all associated laboratory blanks.

- No results were reported for molybdenum, silicon, and titanium. The Target Analyte List and the SAS request specifically include these three metals. The raw instrument data do not indicate that these three elements were analyzed for in any sample. If these three metals are suspected to be present, re-analysis may be necessary.

- The laboratory did not perform an analytical duplicate for the sample. The SOW clearly indicates that "one sample dissolution must be analyzed twice to estimate the analysis precision."[1] Consequently, analysis precision (how well two analyses of the same sample digestate agree with each other) cannot be determined. However, an estimate of method precision (agreement between two separate digestions of the same sample) was obtained through the use of a method duplicate. (Method duplicates measure both analysis precision and preparation homogeneity and did not reveal any problems.)

- Low pre-fusion spike recoveries were noted for cadmium, cobalt, nickel, and silver. Good post-fusion (analytical) spike recoveries indicate that the fusion process was not able to dissolve these analytes from the sample matrix or that these elements were lost during the fusion process. The detection limits for these metals may be higher than reported for sample MCBD08, especially for silver (which exhibited no spike recovery) and nickel.

7.2.5.3 Support Data

The Support Documentation appendix to this report documents the above findings associated with blank contamination and low spike recoveries. Also included are method duplicate data and other relevant quality control information. The text of this report has been formatted to address only those issues directly affecting the application of the data to the subject investigation. (Issues pertaining to laboratory contractual compliance are addressed on a separate form directed to the technical project officer.)

Report prepared by Not responsive due to revised scope
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Report reviewed by Not responsive due to revised scope
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[1] Inorganic High Hazard Analysis Statement of Work, February 1985, page D-42.

ORIGINAL
(Red)

SECTION 8

ORIGINAL (Red)

8.0 TOXICOLOGICAL EVALUATION

8.1 Summary

On-site samples were collected of soil, ponded water and sediment from three different areas that allegedly received different kinds of contaminants, and drainage ditch sediment. Polycyclic aromatic hydrocarbons (PAHs) and benzene were detected in soil and sediment at levels not expected to result in significant noncarcinogenic impacts; some PAHs and benzene can pose an increased cancer risk. Tentatively identified compounds (TICs) were detected in soil, surface water, and sediment. For those compounds for which toxicological information could be found, there was no evidence of a significant health threat, but little information was available for most TICs. Cadmium was detected in soil and drainage ditch sediment and cobalt was measured in soil at levels not expected to pose a significant health or environmental hazard. Lead and aluminum were detected in ponded surface water in excess of Ambient Water Quality Criteria (AWQCs).

In one unfiltered nonpotable monitoring well (MW) containing an oil layer, levels of PAHs, polychlorinated biphenyls (PCBs), mercury, chromium, copper, cobalt, nickel, barium, sodium, iron, manganese, aluminum, and zinc exceeded drinking water criteria, risk reference doses (RfDs) (based on estimated intake), and/or reported toxic levels. This well would not be fit for a potable source, based on reported data.

In other on-site MWs, toluene, ethylbenzene (EB), 1,1-dichloroethene (1,1-DCE), and 1,1,1-trichloroethane (1,1,1-TCEA) were detected below drinking water criteria. The estimated intakes from reported levels of carbon disulfide and diethyl phthalate (DEP) were below RfDs. Benzene and 1,1-dichloroethane (1,1-DCEA) were detected at levels that could potentially pose increased cancer risks if the water were contacted. PAHs and TICs were detected at levels for which little toxicological information existed; where some information was available, there was no evidence to suggest significant impacts. Lead and cobalt were detected in filtered MWs below drinking water criteria or reported toxic levels. Sodium, iron, and manganese levels in filtered MWs exceeded recommended dietary-based guidelines or aesthetic criteria.

Aluminum, lead, copper, and iron were detected in Darby Creek surface water above AWQCs. Possible effects on sensitive aquatic species could not be ruled out. PAHs and cadmium were detected in Darby Creek sediment at levels not expected to pose a significant health hazard.

ORIGINAL (Red)

8.2 Support Data

According to the site history, the following materials were handled or disposed on site: in area no. 1, acid catalysts, possibly including nickel, molybdenum, aluminum, vanadium, platinum, and palladium; in area no. 2, mechanical parts, possibly acid contaminated; and in area no. 3, oil and metals wastes (see sections 1.3 and 4.0). Chromium and lead are alleged contaminants of separator waste stored on site (see section 4.0).

Local industrial operations include a recycling complex, a metal works, a sewage-treatment plant, and a brick and cement manufacturing plant (see section 2.2). Contaminants reportedly associated with two local landfills include methylene chloride, vinyl chloride, chloroethane, chlorobenzene (CB), cyanide, lead, and cadmium (Folcroft Landfill) and PAHs, chromium, and vanadium (Clearview Landfill) (see section 1.3).

Of special concern is the proximity of Tinicum Environmental Center, a recreational and wildlife refuge area containing a marsh, creek, and woodlands.

8.2.1 Organics

Benzene was detected in on-site soil at 10 ug/kg. Benzene is a volatile organic solvent not expected to pose a significant hazard at the reported level.[1] Benzene is also a Group A carcinogen; any contact with carcinogens can theoretically increase cancer risk.

PAHs were confidently and tentatively identified in area no. 1 soil (up to 19,590 ug/kg), area no. 2 sediment (up to 720 ug/kg), area no. 3 soil (up to 52,270 ug/kg), and drainage ditch sediment (up to 56,590 ug/kg), compared to 179 ug/kg in background soil. Area no. 3 soil, where the oil was reportedly dumped, was described as having an oily smell. PAHs are typically persistent, nonvolatile compounds found in coal, tar, oil, and organic combustion products.[1] PAHs can cause dermatitis at high levels; such impacts are not indicated at these levels.[1] Some PAHs have been classified as Group B2 (probable human) carcinogens, including benzo(a)pyrene, benz(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(g,h,i)perylene, chrysene, pyrene, dibenz(a,h)anthracene, and indeno(1,2,3-c,d)pyrene.[2] A cancer potency of 11.5 was once listed for benzo(a)pyrene, and other PAHs were given potencies relative to benzo(a)pyrene.[2,3] Although this potency has been withdrawn and the calculation of cancer risks from soil and sediment can be extremely imprecise because of difficulty determining soil exposure, absorption from soil, variability of vegetation, snow, and (in the case of sediment) water cover, adsorption characteristics, etc., EPA Region III recommends calculation of PAH cancer risks as a rough estimate. Access to this site is well restricted, but personnel associated with the operation of the tank farm could conceivably come into contact with soil or drainage sediment. Estimated cancer risks could theoretically range from 1.2×10^{-7} in background soil to 1.0×10^{-4} in drainage sediment based on 100-mg daily exposure to a 70-kilogram adult.

ORIGINAL (Red)

8.2.2 Inorganics

Two soil samples in area no. 1, the acid-catalyst area, had reported pH levels of 4.1 and 4.2. Background soil pH was 6.7, and other soil and sediment pH levels ranged from 7.1 to 8.2. Low soil pH can increase the mobility of metals and their uptake by plants. Stressed vegetation was found in this area, although no notable levels of metals were noted except for cadmium (1.1 mg/kg). Even this cadmium level is not expected to produce significant impacts. Cadmium was also detected in drainage ditch sediment at 1.2 mg/kg. Cadmium has been seen to affect the kidney, prostate, and blood, usually after high-level industrial inhalation exposure.[5]

In area no. 2, lead was detected in both ponds up to 4.9 ug/l. Lead has a chronic AWQC of 3.2 ug/l.[14] Bioconcentration factors (BCFs) of 17.5 to 2,570 have been reported for lead.[15] Aluminum was detected in one pond at 344 ug/l, exceeding the AWQC of 150 ug/l.[16] Potential effects on sensitive aquatic organisms could not be ruled out.

In area no. 3 soil, many metals (aluminum, chromium, copper, manganese, nickel, and vanadium) were detected at higher levels than in background or other on-site soil samples. However, they were still below upper-range levels for typical eastern United States soils, and significant impacts are not indicated.[17] Cobalt was detected in area no. 3 soil at 90.1 mg/kg. Cobalt is an essential element for which no RfDs have been developed.[1] Cobalt has a reported oral rat LDLo of 1,500 mg/kg and an oral rabbit LDLo of 750 mg/kg.[5] The reported soil level is not expected to pose a significant environmental or health threat.

Inorganic elements were measured in filtered and unfiltered MW samples. In many unfiltered MW samples, metals were detected above drinking water criteria. In all these cases except those noted below, the metal was not detected or was detected below drinking water criteria in the corresponding filtered sample. Metals tend to adsorb onto particulates, which are removed during filtering; particulate adsorption reduces the metals' availability and mobility. Total and dissolved metals were supposed to be measured by the laboratory for MW no. 71, but the laboratory neglected to filter the samples. Therefore, they were treated as duplicate unfiltered samples. Metals in MW no. 71 are likely to be particulate bound.

Lead was detected in filtered MW no. 66 at 8.8 ug/l and in filtered MW no. 107 at 1.6 ug/l. Lead has a proposed MCL of 5 ug/l but a National Interim Primary Drinking Water Regulation (NIPDWR) of 50 ug/l.[6] Lead has been associated with effects on the hematopoietic, gastrointestinal, and nervous systems and is classified as a Group B2 human carcinogen.[5,7] If this water were potable, significant health effects would not necessarily be expected, but it is considered desirable to minimize all lead contact.

ORIGINAL (Red)

Mercury was detected in the WM phase of MW no. 71 at 300 ug/l and in the WIM phase at 3,200 ug/l. Mercury has a proposed MCL and MCLG of 2 ug/l.[6] Two-liter daily consumption of this water by a 70-kilogram adult would also exceed the RfD.[7]. Chromium was detected in the WM phase at 8,720 ug/l. Chromium has a proposed MCL and MCLG of 100 ug/l and a NIPDWR of 50 ug/l.[6] Daily consumption of 2 liters of this water by a 70-kilogram adult would exceed the RfDs for hexavalent chromium and for trivalent chromium.[7] Copper was measured in MW no. 71 at 18,500 ug/l (WM phase) and 25,700 ug/l (WIM phase). Copper has a Secondary MCL (SMCL) and RfD of 1,300 ug/l, based on gastrointestinal effects.[6,7] Cobalt was detected in WIM no. 71 at 4,360 ug/l and in filtered MW no. 66 at 72.2 ug/l. Cobalt has been reported to cause gastrointestinal irritation after high-level ingestion and cardiotoxicity after chronic ingestion of beer containing at least 1,000 ug/l.[5,18] Antimony was detected in the WIM phase of MW no. 71 at 41,700 ug/l; the estimated intake if this water were potable would exceed the RfD, as well as a tentative MCLG of 3 ug/l.[6,7] Nickel, measured in the WIM phase of MW no. 71 at 15,200 ug/l, exceeded the tentative MCLG of 100 ug/l.[6] Estimated nickel intake from this water would exceed the RfD.[7] Barium was detected in WIM MW no. 71 at 14,500 ug/l, exceeding the NIPDWR of 1,000 ug/l, the proposed MCL and MCLG of 5,000 ug/l, and the RfD (based on estimated intake if this water were potable).[6,7] These metals can cause a variety of effects at high levels, including dermal and gastrointestinal irritation.[5] It is clear once again that MW no. 71 would not be fit as a potable source, although it is not known what percentage of these metals could be dissolved.

Sodium was detected in filtered MW no. 66, 68, 107, and 69 up to 128,000 ug/l and in MW no. 71 (WM, 1,100,000 ug/l; WIM, 287,000 ug/l). These levels exceed a guideline of 20,000 ug/l recommended by the American Heart Association to minimize sodium intake, which can be important for persons on a sodium-restricted diet but is not expected to adversely affect the general population.[18] No toxicological data are available for sodium ingestion, but an oral human TDLo for subchronic consumption of sodium chloride (table salt) of 12,357 mg/kg has been reported, with cardiovascular effects.[5]

Reported levels of iron in filtered MW no. 107 and filtered MW no. 67 (up to 32,000 ug/l) and manganese in all filtered MWs but no. 109 (up to 6,610 ug/l) exceeded the SMCLs of 300 ug/l and 50 ug/l, respectively.[6] SMCLs are organoleptic criteria based on properties such as taste and staining and have no toxicological significance. Reported levels of iron (WM, 133,000 ug/l; WIM, 1,206,000 ug/l) and manganese (WM, 5,600 ug/l; WIM, 26,200 ug/l) in MW no. 71 also exceeded the SMCLs. However, iron toxicity has been described after chronic exposure to 50 to 100 mg per day.[5] Estimated intake of manganese from the WIM fraction of this water would exceed the RfD.[7] Aluminum (WM, 850,000 ug/l; WIM, 4,128,000 ug/l) and zinc (WM, 19,200 ug/l; WIM, 47,600 ug/l) levels in MW no. 71 exceeded the SMCLs of 50 ug/l and 5,000 ug/l, respectively.[6] Estimated intake based on the zinc level would also exceed the RfD for zinc.[7] Although this water is not recommended for potable use, it would probably be extremely unpalatable.

ORIGINAL (Red)

In Darby Creek, aluminum was detected at 717 ug/l upstream of the site and up to 174 ug/l downstream, exceeding the AWQC of 150 ug/l.[16] Lead was detected at 16 ug/l upstream and up to 3.6 ug/l downstream of the site, exceeding the AWQC of 3.2 ug/l.[14] Copper (56.5 ug/l) and iron (1,990 ug/l) were detected in upstream creek water above the AWQCs of 12 ug/l and 1,000 ug/l, respectively.[14] Aluminum, copper, and iron are basically essential metals not usually noted for toxicity, but possible effects on sensitive aquatic organisms could not be completely ruled out. BCFs of 17.5 to 2,570 have been reported for lead.[14] A 1986 guideline for the protection of human health for water used both for ingestion and the support of edible fish was 50 ug/l.[14] Significant human health impacts are not indicated for reported levels of these metals, although potential effects on sensitive aquatic life cannot be ruled out. These metals in surface water are likely to be at least partly particulate bound; particulate-bound metals are less available for uptake and absorption than dissolved metals.

Cadmium was detected in downstream Darby Creek sediment up to 5.2 mg/kg (not detected in upstream sediment). Sensitive aquatic species can be affected by cadmium in water, but cadmium tends to adsorb onto sediments and was, indeed, not measured in the water here. BCFs for aquatic organisms are reported to range from 3 to 4,190, depending upon species.[15] This cadmium level is not expected to pose a direct-contact threat.

Report prepared by [redacted]
[redacted], Toxicologist

Report reviewed by [redacted]
[redacted], Senior Toxicologist

ORIGINAL (Red)

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ORIGINAL (Red)

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ORIGINAL
(Red)

APPENDIX A

PROJECT NAME: GULF OIL-DARBY CREEK
TDD NO.: F3-8906-07

EPA SITE NO.: PA-788
REGION: III

ORIGINAL (Red)

SUPPORT DOCUMENTATION FOR THE REVIEW OF ORGANIC ANALYSIS LAB DATA PACKAGE

CASE/SAS NO.: 12281
TYPE OF ANALYSIS: ORGANICS VOA/BNA/PEST
CONTRACT LABORATORY: IT: CERRITOS
APPLICABLE IFB OR SOW: 1/87
REVIEWER: Not responsive due to revised scope
REVIEW DATE:

APPLICABLE SAMPLE NO's.: CCM17, CCM19-CCM34, CN938, CN939, CP743, CP744, CQ623, CQ624, CN504, CN505

THE FOLLOWING TABLE INDICATES AREAS WHICH WERE EXAMINED IN DETAIL, THE IDENTIFIED PROBLEM AREAS, AND SUPPORT DOCUMENTATION ATTACHMENTS:

	AREAS EXAMINED IN DETAIL (CHECK (✓) IF YES OR FOOTNOTE LETTER FOR COMMENTS BELOW)				PROBLEM AREAS IDENTIFIED (CHECK (✓) IF YES OR FOOTNOTE NUMBER FOR COMMENTS BELOW)				SUPPORT DOCUMENTATION ATTACHMENTS (CHECK (✓) IF YES OR IDENTIFY ATTACHMENT NO)			
	ALL APPLICABLE ANALYSES	VOA	BNA	PEST/PCB	ALL APPLICABLE ANALYSES	VOA	BNA	PEST/PCB	ALL APPLICABLE ANALYSES	VOA	BNA	PEST/PCB
HOLDING TIMES	X											
BLANK ANALYSIS RESULTS: TARGET COMPOUNDS	X					X	X		X			
BLANK ANALYSIS RESULTS: TENTATIVE I.D.s	X								X			
SURROGATE SPIKE RESULTS	X					X	X		X			
MATRIX SPIKE RESULTS	X						X	X	X			
DUPLICATE ANALYSIS RESULTS	X											
TARGET COMPOUND MATCHING QUALITY	X						X		X			
TENTATIVELY IDENTIFIED COMPOUNDS	X											
DFTPP & BFB SPECTRUM TUNE RESULTS	X											
GC INSTRUMENT PERFORMANCE	X					X			X			
INITIAL CALIBRATIONS	X											
CONTINUING CALIBRATIONS	X					X	X		X			
QUANTITATION OF RESULTS	X											
OTHERS												

COMMENTS: SUPPORT DOCUMENTATION FOR TWO HIGH HAZARD SAMPLES IS COVERED UNDER A SEPARATE COVER SHEET

CASE 12281
SDG CCM17(49)

BLANK ANALYSIS RESULTS FOR TARGET COMPOUNDS

pg 1

ORIGINAL (Red)

FRACTION	TYPE	CONC	MATRIX	SAMPLE #	SOURCE OF H_2O	CONTAMINANTS (CONCENTRATION / DETECTION LIMIT)
VOA	LAB	LOW	AQ	VBLK1 7/20/89	LAB	Methylene chloride (7 ug/l / 5 ug/l) acetone (0.91 ug/l(2) / 10 ug/l) *Toluene (0.74 ug/l / 5 ug/l)
				VBLK2 7/21/89		Methylene chloride (8 ug/l / 5 ug/l) acetone (1.1 ug/l / 10 ug/l) 1,1-Dichloroethane (0.11 ug/l(2) / 5 ug/l) TOLUENE (0.20 ug/kg(2) / 5 ug/kg)
	FIELD	LOW	AQ	CCM33 7/20/89	NVS	Methylene Chloride (4 ug/l / 5 ug/l) 1,1-DICHLOROETHANE (0.19 ug/l(2) / 5 ug/l
	FIELD	LOW	SOL	CCM34 7/20/89		METHYLENE CHLORIDE (5 ug/kg / 5 ug/kg) *ACETONE (1.3 ug/kg / 10 ug/kg) 1,1-DICHLOROETHANE (0.22 ug/kg(2) / 5 ug/kg)
BNA	LAB	LOW	AQ	SBLK1 7/18/89	LAB	*diethylphthalate (0.13 ug/l(2) / 10 ug/l) di-n-butylphthalate (0.39 ug/l(2) / 10 ug/l) bis(2-ethylhexyl) phthalate (0.21 ug/l(2) / 10 ug/l)
				SBLK2 7/18/89		diethyl phthalate (0.075 ug/l(2) / 10 ug/l) *di-n-butyl phthalate (0.82 ug/l(2) / 10 ug/l) bis(2-ethylhexyl) phthalate (0.20 ug/l(2) / 10 ug/l)
				SBLK3 7/21/89		di-n-butyl phthalate (0.32 ug/l(2) / 10 ug/l) bis(2-ethylhexyl) phthalate (0.24 ug/l(2) / 10 ug/l
	FIELD	LOW	AQ	CCM33 7/18/89	NVS	diethyl phthalate (0.086 ug/l(2) / 10 ug/l) di-n-butyl phthalate (0.37 ug/l(2) / 10 ug/l) bis(2-ethylhexyl) phthalate (0.33 ug/l(2) / 10 ug/l)
PEST	LAB	LOW	AQ	PBLK1 7/17/89	LAB	None detected
	FIELD	LOW	AQ	CCM33	NVS	None detected

LABORATORY REPORTED FIELD BLANK DATA IS COMPARED WITH THE SAMPLE DATA IN A TABULATION FORM WITHIN THE SAMPLE ANALYTICAL DATA SUMMARY. TENTATIVELY IDENTIFIED COMPOUNDS IN BLANKS ARE LISTED ON A SEPARATE FORM.

COMMENTS:

(1) RESULT REPORTED BY LABORATORY AND CONFIRMED BY REVIEWER.

(2) RESULT INFERRED FROM QUANTITATION LIST, DIAGNOSTICS, CHROMATOGRAM AND/OR SPECTRA.

* highest level found in any blank

CASE 12281

BLANK ANALYSIS RESULTS FOR TENTATIVELY IDENTIFIED COMPOUNDS

DG CCM17 (AQ)

ALL TENTATIVELY IDENTIFIED COMPOUNDS FOUND IN BLANK ANALYSES ARE LISTED BELOW:

SAMPLE #	FRACTION	SCAN #(S) OR R.T	ESTIMATED CONCENTRATION	COMPOUND NAME	COMMENTS ORIGINAL (Red)
VBLK1	VOA	38	2% ISe133		
VBLK2		37	7% ISe133		
CCM33		36	3% ISe132		
CCM34		36	3% ISe132		
SBLK1	BNA	438	20 ng/l		main peaks: 39, 41, 42-44, 45, 53-55, 57*, 56, 67, 68, 71-72, 82, 99 100
		441	4% ISe602	NLS	ISe 602, 812, 1129, 1396, 1891, 2140
		454	3% ISe602		
		493	2% ISe602		
		514	1% ISe602		
		659	3% ISe602		
		674	2% ISe602		
		765	1% ISe812		
		902	2% ISe812		
		941	<1% ISe812		
		1002	5% ISe1129		
		1146	1% ISe1129		
		1241	<1% ISe1129		
		1543	1% ISe1396		
SBLK2		565	14 ng/l	2-methyl cyclopentanol ($C_6H_{12}O$)	main peaks: 39, 41-45, 53-57*, 67, 71-72, 82*
		799	2% ISe741	NLS	ISe 741, 964, 1304, 1595, 2119, 2395
		929	2% ISe964		
		1060	1% ISe964		
		1339	1% ISe1304		
		2162	1% ISe2119		
		2424	2% ISe2395		
		2445	1% ISe2395		
SBLK3		417	6% ISe586	NLS	ISe 586, 799, 1116, 1382, 1876, 2126
		425	6% ISe586		
		433	<	Ketene:	main peaks: 39-41, d, 43*-44, 53-55, 57, 85*-86, 99
		490	4% ISe586	NLS	
		623	<1% ISe586		
		1150	<1% ISe1116		
		2066	1% ISe2126		
CCM33		439	7% ISe604	NLS	ISe 604, 813, 1129,
		452	20 ng/l	Ketene:	main peaks: 39-41d, 43*, 50-1, 53, 55, 57a, 61, 67, 69-71, 85*, 99-100
		481	7% ISe604	NLS	
		496	7% ISe604		
		524	4% ISe604		
		584	40 ng/l	TRIMETHYL BENZENE (C_9H_{12})	MAIN PEAKS: 39, 41, 50-53, 59, 62-3, 65-6, 77-80, 91, 103, 105*, 106, 115-106*, 121
		594	12 ng/l	C_9H_{14} isomer	main peaks: 39, 41, 51, 53, 65, 67, 79, 81, 91*-93, 105, 107*, 121*
		629	2% ISe604	NLS	
		665	7% ISe604		
		680	2% ISe604		

(Cont) (Cont)

NLS = no library search conducted

BLANK ANALYSIS RESULTS FOR TENTATIVELY IDENTIFIED COMPOUNDS

CASE 12281
SDG CCm17 (AQ)

pg 2 of 2

ALL TENTATIVELY IDENTIFIED COMPOUNDS FOUND IN BLANK ANALYSES ARE LISTED BELOW:

SAMPLE #	FRACTION	SCAN #(S) OR R.T	ESTIMATED CONCENTRATION	COMPOUND NAME	COMMENTS ORIGINAL (Red)
CCm33 [Cont]	BNA [Cont]	877	2% ISe813	NLS	
		891	2% ISe813	↓	
		928	8 ng/l	Unknown: main peaks 39, 4-42*, 43, 45, 53, 55, 79, 81, 137	
		962	3% ISe813	NLS	
		975	3% ISe1129		
		980	1% ISe1129		
		1050	49% ISe1129		
		1058	2% ISe1129		
		1069	7% ISe1129		
		1077	3% ISe1129		
		1091	2% ISe1129		
		1106	1% ISe1129		
		1165	2% ISe1129		
		1941	2% ISe1889		
		1002	40 ng/l	Unknown: main peaks: 37, 39, 41a, 77, 79, 91, 93, 105, 107, 119-126*	
		700	18 ng/l	Ketone: main peaks: 39, 41, 43*, 51, 53, 55*, 56, 58, 65, 67*, 69, 79, 81, 83, 85, 86, 101, 107, 122, 123, 125, 140	

NLS = no library search conducted

CASE 12281
SDG CCM76 (Solid)

BLANK ANALYSIS RESULTS FOR TARGET COMPOUNDS

FRACTION	TYPE	CONC	MATRIX	SAMPLE #	SOURCE OF H_2O	CONTAMINANTS (CONCENTRATION / DETECTION LIMIT)
VOA	LAB/LOW/SOL			VBLK1 7/19/89	LAB	METHYLENE CHLORIDE (9 ug/kg / 5 ug/kg) 1,1-DICHLOROETHANE (0.22 ug/kg(2) / 5 ug/kg) TOLUENE (0.22 ug/kg(2) / 5 ug/kg) Acetone (0.82 ug/kg / 10 ug/kg) ORIGINAL (Red)
				VBLK2 7/19/89		Methylene chloride (9 ug/kg / 5 ug/kg) *1,1-DICHLOROETHANE (0.23 ug/kg(2) / 5 ug/kg) TOLUENE (0.08 ug/kg(2) / 5 ug/kg) Acetone (0.88 ug/kg(2) / 10 ug/kg)
				VBLK3 7/20/89		*METHYLENE CHLORIDE (15 ug/kg / 5 ug/kg) acetone (.76 ug/kg / 10 ug/kg) TOLUENE (0.161 ug/kg(2) / 5 ug/kg)
BNA	LAB/LOW/SOL			SBLK1 7/24/89	LAB	di-n-butyl phthalate (8.0 ug/kg(2) / 660 ug/kg) *butyl benzyl phthalate (13.7 ug/kg(2) / 660 ug/kg)
				SBLK2 8/1/89		di-n-butyl phthalate (46.2 ug/kg(2) / 3300 ug/kg) bis(2-ethyl hexyl) phthalate (56.4 ug/kg(2) / 3300 ug/kg)
				SBLK3 8/10/89		di-n-butyl phthalate (132 ug/kg(2) / 3300 ug/kg) *chrysene (205 ug/kg(2) / 3300 ug/kg) *bis(2-ethyl hexyl) phthalate (211 ug/kg(2) / 3300 ug/kg)

LABORATORY REPORTED FIELD BLANK DATA IS COMPARED WITH THE SAMPLE DATA IN A TABULATION FORM WITHIN THE SAMPLE ANALYTICAL DATA SUMMARY. TENTATIVELY IDENTIFIED COMPOUNDS IN BLANKS ARE LISTED ON A SEPARATE FORM.

COMMENTS:

(1) RESULT REPORTED BY LABORATORY AND CONFIRMED BY REVIEWER.

(2) RESULT INFERRED FROM QUANTITATION LIST, DIAGNOSTICS, CHROMATOGRAM AND/OR SPECTRA.

* highest level found in any blank

CASE 12281

BLANK ANALYSIS RESULTS FOR TENTATIVELY IDENTIFIED COMPOUNDS

DF CCM26

pg 1 of 1

ALL TENTATIVELY IDENTIFIED COMPOUNDS FOUND IN BLANK ANALYSES ARE LISTED BELOW:

SAMPLE #	FRACTION	SCAN #(S) OR R.T	ESTIMATED CONCENTRATION	COMPOUND NAME	COMMENTS
VBLK1	VOA	40	3 ug Ise 134	NLS	
VBLK2		37	3 ug Ise 132	NLS	
VBLK3		37	3 ug Ise 131	NLS	
		147	190 Ise 131		
SBLK1	BNA	543	2 ug Ise 795	NLS	Ise 795
SBLK2		456	10000 ug/kg	Unknown: main peaks 39-43*, 44, 55-59*, 66, 101-102	Ise 700
SBLK3		683	8 ug Ise 691	NLS	
		791	4 ug Ise 691		Ise 691, 908

NLS = no library search conducted

2A

WATER VOLATILE SURROGATE RECOVERY

ORIGINAL 00127

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

	EPA SAMPLE NO.	S1 (TOL)#	S2 (BFB)#	S3 (DCE)#	OTHER	TOT OUT
01	CCM17	99	102	91		0
02	CCM19	105	111	97		0
03	CCM20	103	107	97		0
04	CCM21	103	107	96		0
05	CCM22	101	105	95		0
06	CCM23	102	106	96		0
07	CCM24	102	107	97		0
08	CCM25	101	108	95		0
09	CCM33	100	104	94		0
10	CCM34	102	107	97		0
11	CN939	102	107	98		0
12	CW504	100	101	92		0
13	CW504MS	100	96	94		0
14	CW504MSD	88	90	96		0
15	CW505	101	106	97		0
16	VBLK1	107	111	97		0
17	VBLK2	109	112	99		0

		QC LIMITS
S1 (TOL)	= Toluene-d8	(88-110)
S2 (BFB)	= Bromofluorobenzene	(86-115)
S3 (DCE)	= 1,2-Dichloroethane-d4	(76-114)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

ORIGINAL (Red)

2B
SOIL VOLATILE SURROGATE RECOVERY

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM26

Level: (low/med) LOW

	EPA SAMPLE NO.	S1 (TOL)#	S2 (BFB)#	S3 (DCE)#	OTHER	TOT OUT
01	CCM26	89	80	83		0
02	CCM27	105	90	100		0
03	CCM28	102	94	98		0
04	CCM29	100	96	94		0
05	CCM30	97	92	92		0
06	CCM31	95	86	89		0
07	CCM32	98	89	92		0
08	CCM32MS	85	74	85		0
09	CCM32MSD	95	85	96		0
10	CN938	95	83	89		0
11	CP743	86	82	84		0
12	CP744	96	87	94		0
13	CQ623	131 *	78	88		1
14	CQ623RE	179 *	44 *	96		2
15	CQ624	101	80	90		0
16	VBLK1	98	97	91		0
17	VBLK2	104	106	96		0
18	VBLK3	99	100	96		0

results taken from original analysis because QC better

		QC LIMITS
S1 (TOL)	= Toluene-d8	(81-117)
S2 (BFB)	= Bromofluorobenzene	(74-121)
S3 (DCE)	= 1,2-Dichloroethane-d4	(70-121)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

FORM II VOA-2

3A

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Matrix Spike - EPA Sample No.: CW504

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC LIMI REC
1,1-Dichloroethene	78.0	0	81.4	104	61-1
Trichloroethene	78.0	0	77.2	99	71-1
Benzene	78.0	187	261	95	76-1
Toluene	78.0	4.73	76.9	93	76-1
Chlorobenzene	78.0	0	80.2	103	75-1

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	REC
1,1-Dichloroethene	78.0	88.3	113	-8	14	61-1
Trichloroethene	78.0	85.5	110	-11	14	71-1
Benzene	78.0	259	92	3	11	76-1
Toluene	78.0	74.6	90	3	13	76-1
Chlorobenzene	78.0	78.0	100	3	13	75-1

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits
Spike Recovery: 0 out of 10 outside limits

COMMENTS: CW504
GCMSC VOA 16ML:25ML--5ML

3B

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

ORIGINAL (Red)

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM26

Matrix Spike - EPA Sample No.: CCM32 Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
1,1-Dichloroethene	61.0	0	46.3	76	59-172
Trichloroethene	61.0	0	57.6	94	62-137
Benzene	61.0	0	46.3	76	66-142
Toluene	61.0	0	50.4	83	59-139
Chlorobenzene	61.0	0	57.9	95	60-133

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,1-Dichloroethene	61.0	48.5	80	-5	22	59-172
Trichloroethene	61.0	61.1	100	-6	24	62-137
Benzene	61.0	50.0	82	-8	21	66-142
Toluene	61.0	54.0	89	-7	21	59-139
Chlorobenzene	61.0	62.6	103	-8	21	60-133

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits
Spike Recovery: 0 out of 10 outside limits

COMMENTS: CCM32
GCMSC VOA-CASE#12281-SDG#CCM26-5G

2C

WATER SEMIVOLATILE SURROGATE RECOVERY

00400

ORIGINAL (Red)

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

dls for late eluting PAHs biased low

	EPA SAMPLE NO.	S1 (NBZ)#	S2 (FBP)#	S3 (TPH)#	S4 (PHL)#	S5 (2FP)#	S6 (TBP)#	OTHER	TOT OUT
01	CCM17	77	61	16 *	67	65	55		1
02	CCM19	73	69	23 *	22	17 *	15		2
03	CCM20	75	70	23 *	59	60	60		1
04	CCM21	74	73	68	23	61	75		0
05	CCM22	78	78	71	54	62	79		0
06	CCM23	79	75	76	74	79	87		0
07	CCM24	85	77	38	72	75	80		0
08	CCM25	86	86	54	49	67	84		0
09	CCM25RE	113	106	68	62	85	134 *		1
10	CCM33	90	84	89	84	89	116		0
11	CN939	80	67	20 *	72	72	64		1
12	CW504	53	55	24 *	98 *	91	37		2
13	CW504MS	52	54	24 *	103 *	92	30		2
14	CW504MSD	64	73	37	105 *	91	48		1
15	CW505	65	67	71	8 *	6 *	9 *		3
16	CW505RE	65	70	66	13	6 *	12		1
17	SBLK1	72	78	74	16	83	105		0
18	SBLK2	80	77	84	13	71	87		0
19	SBLK3	63	60	71	80	64	87		0

dls for late eluting PAHs biased low

OK - good recovery

dls for all phenolic (acid) compounds biased low

phenol dl biased low

dls biased low - acidic compounds

phenol dl biased low - bias effect on data

		QC LIMITS
S1 (NBZ)	= Nitrobenzene-d5	(35-114)
S2 (FBP)	= 2-Fluorobiphenyl	(43-116)
S3 (TPH)	= Terphenyl	(33-141)
S4 (PHL)	= Phenol-d5	(10-94)
S5 (2FP)	= 2-Fluorophenol	(21-100)
S6 (TBP)	= 2,4,6-Tribromophenol	(10-123)

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogates diluted out

2D

SOIL SEMIVOLATILE SURROGATE RECOVERY

ORIGINAL (Red)

00396

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM26

Level: (low/med) LOW

	EPA SAMPLE NO.	S1 (NBZ)#	S2 (FBP)#	S3 (TPH)#	S4 (PHL)#	S5 (2FP)#	S6 (TBP)#	OTHER	TOT OUT
01	CCM26	25	29 *	31	30	39	30		1
02	CCM27	28	36	40	35	44	41		0
03	CCM28	87	91	99	91	106	89		0
04	CCM29	85	98	104	103	130 *	105		1
05	CCM30	31	34	35	32	39	46		0
06	CCM31	33	33	35	34	39	36		0
07	CCM32	71	76	91	87	107	89		0
08	CN938	74	99	96	85	84	86		0
09	CN938MS	93	101	91	92	82	61		0
10	CN938MSD	64	87	82	76	58	49		0
11	CP743	38	37	39	36	43	38		0
12	CP744	34	38	37	35	42	54		0
13	CQ623	105	132 *	90	76	81	75		1
14	CQ624	82	88	80	57	43	50		0
15	SBLK1	64	63	69	69	89	58		0
16	SBLK2	99	114	103	97	93	82		0
17	SBLK3	92	97	89	81	90	79		0

		QC LIMITS
S1 (NBZ)	= Nitrobenzene-d5	(23-120)
S2 (FBP)	= 2-Fluorobiphenyl	(30-115)
S3 (TPH)	= Terphenyl	(18-137)
S4 (PHL)	= Phenol-d5	(24-113)
S5 (2FP)	= 2-Fluorophenol	(25-121)
S6 (TBP)	= 2,4,6-Tribromophenol	(19-122)

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogates diluted out

3C

WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Matrix Spike - EPA Sample No.: CW504

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC LIMITS REC.
Phenol	200	0	207	104 *	12- 89
2-Chlorophenol	197	0	186	94	27-123
1,4-Dichlorobenzene	101	0	80.8	80	36 97
N-Nitroso-di-n-prop.(1)	107	0	143	134 *	41 116
1,2,4-Trichlorobenzene	104	0	69.8	67	39 98
4-Chloro-3-methylphenol	199	0	160	80	23 97
Acenaphthene	102	0	66.2	65	46-118
4-Nitrophenol	200	0	194	97 *	10- 80
2,4-Dinitrotoluene	103	0	21.7	21 *	24- 96
Pentachlorophenol	207	0	28.7	14	9-103
Pyrene	105	0	54.0	51	26-127

dl biased low

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Phenol	200	224	112 *	-7	42	12- 89
2-Chlorophenol	197	193	98	-4	40	27-123
1,4-Dichlorobenzene	101	96.8	96	-18	28	36 97
N-Nitroso-di-n-prop.(1)	107	150	140 *	-4	38	41 116
1,2,4-Trichlorobenzene	104	92.0	88	-27	28	39 98
4-Chloro-3-methylphenol	199	173	87	-8	42	23 97
Acenaphthene	102	86.4	85	-27	31	46-118
4-Nitrophenol	200	250	125 *	-25	50	10- 80
2,4-Dinitrotoluene	103	28.4	28	-29	38	24- 96
Pentachlorophenol	207	99.2	48	-110 *	50	9-103
Pyrene	105	86.4	82	-47 *	31	26-127

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 2 out of 11 outside limits
Spike Recovery: 7 out of 22 outside limits

COMMENTS: CW504
GCMSI-EPA 1L:2ML 200UL:800UL CASE:12281 SDG:CCM17

ORIGINAL (Red)

3D

SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM26

Matrix Spike - EPA Sample No.: CN938 Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
Phenol	9000	0	3680	41	26- 90
2-Chlorophenol	8860	0	8330	94	25-102
1,4-Dichlorobenzene	4550	0	4130	91	28 104
N-Nitroso-di-n-prop.(1)	4820	0	5580	116	41 126
1,2,4-Trichlorobenzene	4660	0	4030	86	38 107
4-Chloro-3-methylphenol	8960	0	6660	74	26 103
Acenaphthene	4610	0	4550	99	31-137
4-Nitrophenol	9000	0	2510	28	11-114
2,4-Dinitrotoluene	4630	0	3830	83	28- 89
Pentachlorophenol	9320	0	3070	33	17-109
Pyrene	4710	1130	4180	65	35-142

dl for 4-nitrophenol estimated

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Phenol	9000	5670	63	-42 *	35	26- 90
2-Chlorophenol	8860	6710	76	21	50	25-102
1,4-Dichlorobenzene	4550	2960	65	33 *	27	28 104
N-Nitroso-di-n-prop.(1)	4820	3320	69	51 *	38	41 126
1,2,4-Trichlorobenzene	4660	3510	75	14	23	38 107
4-Chloro-3-methylphenol	8960	6620	74	0	33	26 103
Acenaphthene	4610	4280	93	6	19	31-137
4-Nitrophenol	9000	4910	55	-65 *	50	11-114
2,4-Dinitrotoluene	4630	2940	64	26	47	28- 89
Pentachlorophenol	9320	4640	50	-41	47	17-109
Pyrene	4710	4020	61	6	36	35-142

ok - both recovery & RPD

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 4 out of 11 outside limits
Spike Recovery: 0 out of 22 outside limits

COMMENTS: CN938
GCMSJ-CASE#12281-SDG#CCM26-EXT,30G:10ML::7.5ML,7/31/89

2F

SOIL PESTICIDE SURROGATE RECOVERY

01127 ORIGINAL (Red)

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No: _____ SDG No.: CCM26

Level:(low/med) LOW

	EPA SAMPLE NO.	S1 (DBC)#	OTHER
1	CCM26	93	0
2	CCM27	76	0
3	CCM28	87	0
4	CCM29	99	0
5	CCM30	128	0
6	CCM31	125	0
7	CCM32	86	0
8	CCM32MS	99	0
9	CCM32MSD	73	0
10	CP743	132	0
11	CP744	509 *	0
12	PBLK1	65	0
13	PBLK2	154 *	0
14	PBLK5	113	0
15			
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23			
24			
25			
26			
27			
28			
29			
30			

interference observable in the chromatogram; doesn't effect any detection limits

OK - no effect on data

ADVISORY QC LIMITS (20-150)

S1 (DBC) = Dibutylchlorendate

Column to be used to flag recovery values

* Values outside of QC limits

D Surrogates diluted out

FORM II PEST-2 1/87 Rev.

ORIGINAL
011128

2F
SOIL PESTICIDE SURROGATE RECOVERY

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No: _____ SDG No.: CCM26

Level:(low/med) MED

	EPA SAMPLE NO.	S1 (DBC)#	OTHER
1	CN938	91	0
2	CN938MS	149	0
3	CN938MSD	146	0
4	CQ623	104	0
5	CQ624	24	0
6	PBLK3	104	0
7	PBLK4	121	0
8			
9			
10			
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29			
30			

detection limits for late eluting pesticides elevated

ADVISORY QC LIMITS (20-150)

S1 (DBC) = Dibutylchlorendate

Column to be used to flag recovery values

* Values outside of QC limits

D Surrogates diluted out

FORM II PEST-2 1/87 Rev.

3F

01129

SOIL PESTICIDE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

ORIGINAL (Red)

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM26

Matrix Spike - EPA Sample No.: CCM32 Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
gamma-BHC (Lindane)	33.3	0.0	32.4	97	46-127
Heptachlor	33.1	0.0	33.8	102	35-130
Aldrin	33.1	0.0	33.1	100	34-132
Dieldrin	81.4	0.0	84.9	104	31-134
Endrin	81.1	0.0	79.3	98	42-139
4,4'-DDT	81.1	0.0	79.9	99	23-134

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
gamma-BHC (Lindane)	33.3	24.3	73	29	50	46-127
Heptachlor	33.1	29.0	87	15	31	35-130
Aldrin	33.1	24.3	73	31	43	34-132
Dieldrin	81.4	63.9	78	28	38	31-134
Endrin	81.1	59.2	73	29	45	42-139
4,4'-DDT	81.1	61.0	75	27	50	23-134

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 6 outside limits
Spike Recovery: 0 out of 12 outside limits

COMMENTS: _____

OMB

3F

SOIL PESTICIDE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: IT CERRITOS Contract: 68-W8-0048

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM26

Matrix Spike - EPA Sample No.: CN938 Level:(low/med) MED

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
gamma-BHC (Lindane)	2798	0	3148	112	46-127
Heptachlor	2785	0	3857	139 *	35-130
Aldrin	2785	0	3825	137 *	34-132
Dieldrin	6839	0	8597	126	31-134
Endrin	6811	0	8864	130	42-139
4,4'-DDT	6811	0	7208	106	23-134

OK - interferences would not be expected to effect detection & no trends reported

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
gamma-BHC (Lindane)	2798	3244	116	3	50	46-127
Heptachlor	2785	3622	130	6	31	35-130
Aldrin	2785	3644	131	5	43	34-132
Dieldrin	6839	8260	121	4	38	31-134
Endrin	6811	8533	125	4	45	42-139
4,4'-DDT	6811	7170	105	1	50	23-134

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 6 outside limits
Spike Recovery: 2 out of 12 outside limits

COMMENTS: _____

ORIGINAL (Red)

2E

WATER PESTICIDE SURROGATE RECOVERY

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No: _____ SDG No.: CCM17

	EPA SAMPLE NO.	S1 (DBC)#	OTHER
1	CCM17	55	0
2	CCM19	66	0
3	CCM20	57	0
4	CCM21	51	0
5	CCM22	70	0
6	CCM23	61	0
7	CCM24	63	0
8	CCM25	50	0
9	CCM33	71	0
10	CN939	105	0
11	CW504	65	0
12	CW504MS	78	0
13	CW504MSD	71	0
14	CW505	59	0
15	PBLK1	71	0
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
30			

ADVISORY QC LIMITS (24-154)

S1 (DBC) = Dibutylchlorendate

Column to be used to flag recovery values

* Values outside of QC limits

D Surrogates diluted out

FORM II PEST-1 1/87 Rev.

ORIGINAL (Red)

3E

WATER PESTICIDE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Matrix Spike - EPA Sample No.: CW504

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC LIMITS REC.
gamma-BHC (Lindane)	0.205	0.000	0.200	98	56-123
Heptachlor	0.204	0.000	0.190	93	40-131
Aldrin	0.204	0.000	0.100	49	40-120
Dieldrin	0.501	0.000	0.370	74	52-126
Endrin	0.499	0.000	0.480	96	56-121
4,4'-DDT	0.499	0.000	0.300	60	38-127

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
gamma-BHC (Lindane)	0.205	0.180	88	11	15	56-123
Heptachlor	0.204	0.160	78	17	20	40-131
Aldrin	0.204	0.080	39 *	22	22	40-120
Dieldrin	0.501	0.300	60	21 *	18	52-126
Endrin	0.499	0.300	60	46 *	21	56-121
4,4'-DDT	0.499	0.250	50	18	27	38-127

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Aldrin detection limit based low due to low recovery

RPD: 2 out of 6 outside limits
Spike Recovery: 1 out of 12 outside limits

COMMENTS: MATRIX EFFECT

MS

7A

VOLATILE CONTINUING CALIBRATION CHECK

00333 ORIGINAL (Red)

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Instrument ID: GCMSC Calibration date: 07/21/89 Time: 0945

Lab File ID: LWVEC753 Init. Calib. Date(s): 07/06/89 07/06/89

Matrix:(soil/water) WATER Level:(low/med) LOW Column:(pack/cap) PACK

Min RRF50 for SPCC(#) = 0.300 (0.250 for Bromoform) Max %D for CCC(*) = 25.

COMPOUND		RRF	RRF50	%D	
Chloromethane	#	0.644	1.501	-99.9	#
Bromomethane		1.154	1.378	-19.4	
Vinyl Chloride	*	1.632	1.676	-2.7	*
Chloroethane		1.247	1.082	13.2	
Methylene Chloride		1.630	2.127	-30.5	
Acetone		1.044	1.296	-24.1	
Carbon Disulfide		4.189	2.927	30.1	
1,1-Dichloroethene	*	1.201	1.342	-11.7	*
1,1-Dichloroethane	#	2.928	3.026	-3.3	#
1,2-Dichloroethene (total)		1.423	1.448	-1.8	
Chloroform	*	2.527	2.613	-3.4	*
1,2-Dichloroethane		1.723	2.063	-19.7	
2-Butanone		0.327	0.263	19.6	
1,1,1-Trichloroethane		0.419	0.481	-14.8	
Carbon Tetrachloride		0.309	0.388	-25.6	
Vinyl Acetate		1.183	0.798	32.5	
Bromodichloromethane		0.513	0.521	-1.6	
1,2-Dichloropropane	*	0.512	0.501	2.1	*
cis-1,3-Dichloropropene		0.729	0.675	7.4	
Trichloroethene		0.414	0.445	-7.5	
Dibromochloromethane		0.371	0.395	-6.5	
1,1,2-Trichloroethane		0.366	0.375	-2.5	
Benzene		1.178	1.245	-5.7	
trans-1,3-Dichloropropene		0.334	0.339	-1.5	
Bromoform	#	0.300	0.261	13.0	#
4-Methyl-2-Pentanone		0.700	0.543	22.4	
2-Hexanone		0.724	0.543	25.0	
Tetrachloroethene		0.405	0.480	-18.5	
1,1,2,2-Tetrachloroethane	#	0.768	0.570	25.8	#
Toluene	*	0.823	0.754	8.4	*
Chlorobenzene	#	0.958	0.880	8.1	#
Ethylbenzene	*	0.486	0.408	16.1	*
Styrene		0.797	0.606	24.0	
Xylenes (Total)		0.486	0.396	18.5	
Toluene-d8		1.247	1.215	2.6	
Bromofluorobenzene		0.741	0.576	22.3	
1,2-Dichloroethane-d4		1.395	1.737	-24.5	

detection limits estimated

ORIGINAL (Red)

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Instrument ID: GCMSC Calibration date: 07/20/89 Time: 1338

Lab File ID: LWVEC751 Init. Calib. Date(s): 07/06/89 07/06/89

Matrix:(soil/water) WATER Level:(low/med) LOW Column:(pack/cap) PACK

Min RRF50 for SPCC(#) = 0.300 (0.250 for Bromoform) Max %D for CCC(*) = 25.

COMPOUND		RRF	RRF50	%D	
Chloromethane	#	0.644	0.529	17.9	#
Bromomethane		1.154	1.365	-18.3	
Vinyl Chloride	*	1.632	1.430	12.4	*
Chloroethane		1.247	1.092	12.4	
Methylene Chloride		1.630	2.172	-33.3	
Acetone		1.044	1.450	-38.9	
Carbon Disulfide		4.189	2.781	33.6	
1,1-Dichloroethene	*	1.201	1.301	-8.3	*
1,1-Dichloroethane	#	2.928	2.920	0.3	#
1,2-Dichloroethene (total)		1.423	1.424	-0.1	
Chloroform	*	2.527	2.497	1.2	*
1,2-Dichloroethane		1.723	1.984	-15.2	
2-Butanone		0.327	0.291	11.0	
1,1,1-Trichloroethane		0.419	0.463	-10.5	
Carbon Tetrachloride		0.309	0.366	-18.5	
Vinyl Acetate		1.183	0.879	25.7	
Bromodichloromethane		0.513	0.490	4.5	
1,2-Dichloropropane	*	0.512	0.487	4.9	*
cis-1,3-Dichloropropene		0.729	0.653	10.4	
Trichloroethene		0.414	0.435	-5.1	
Dibromochloromethane		0.371	0.376	-1.3	
1,1,2-Trichloroethane		0.366	0.382	-4.4	
Benzene		1.178	1.210	-2.7	
trans-1,3-Dichloropropene		0.334	0.328	1.8	
Bromoform	#	0.300	0.256	14.7	#
4-Methyl-2-Pentanone		0.700	0.607	13.3	
2-Hexanone		0.724	0.582	19.6	
Tetrachloroethene		0.405	0.460	-13.6	
1,1,2,2-Tetrachloroethane	#	0.768	0.605	21.2	#
Toluene	*	0.823	0.734	10.8	*
Chlorobenzene	#	0.958	0.853	11.0	#
Ethylbenzene	*	0.486	0.403	17.1	*
Styrene		0.797	0.631	20.8	
Xylenes (Total)		0.486	0.384	21.0	
Toluene-d8		1.247	1.282	-2.8	
Bromofluorobenzene		0.741	0.608	18.0	
1,2-Dichloroethane-d4		1.395	1.786	-28.0	

detection limits exceeded

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM26

Lab File ID (Standard): LSVEC749 Date Analyzed: 07/19/89

Instrument ID: GCMSC Time Analyzed: 2120

Matrix:(soil/water) SOIL Level:(low/med) LOW Column:(pack/cap) PACK ORIGINAL (Red)

	IS1(BCM) AREA #	RT	IS2(DFB) AREA #	RT	IS3(CBZ) AREA #	RT
12 HOUR STD	47600	4.47	154000	11.87	125000	15.94
UPPER LIMIT	95200		308000		250000	
LOWER LIMIT	23800		77000		62500	
EPA SAMPLE NO.						
01 CQ623	39400	4.33	111000	11.80	62600	15.90
02 VBLK2	45800	4.40	143000	11.84	113000	15.94

IS1 (BCM) = Bromochloromethane
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene

UPPER LIMIT = + 100% of internal standard area.
LOWER LIMIT = - 50% of internal standard area.

Column used to flag internal standard area values with an asterisk

Comparison of internal standard areas for CQ623 and CQ623RE showing CZ623 QC data better

00152

8A

VOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM26

Lab File ID (Standard): LSVEC750 Date Analyzed: 07/20/89

Instrument ID: GCMSC Time Analyzed: 0905

Matrix:(soil/water) SOIL Level:(low/med) LOW Column:(pack/cap) PACK

	IS1(BCM) AREA #	RT	IS2(DFB) AREA #	RT	IS3(CBZ) AREA #	RT
12 HOUR STD	50600	4.50	178000	11.87	139000	15.94
UPPER LIMIT	101200		356000		278000	
LOWER LIMIT	25300		89000		69500	
EPA SAMPLE NO.						
01 CP743	43000	4.50	142000	11.87	106000	15.94
02 CQ623RE	14900 *	4.43	33800 *	11.84	9730 *	15.97
03 VBLK3	48100	4.37	161000	11.80	126000	15.90

All Internal Standards outside limits

UPPER LIMIT = + 100%

	IS1(DCB) AREA #	RT	IS2(NPT) AREA #	RT	IS3(ANT) AREA #	RT
12 HOUR STD	17300	12.35	66200	16.07	34000	21.74
UPPER LIMIT	34600		132400		68000	
LOWER LIMIT	8650		33100		17000	
EPA SAMPLE NO.						
01 CCM17	18600	12.42	72700	16.12	36500	21.79
02 CCM19	15700	12.40	66500	16.10	32300	21.80
03 CCM20	18600	12.45	73800	16.15	37800	21.84
04 CCM21	19300	12.45	78300	16.15	39300	21.82
05 CCM22	14500	12.35	60100	16.05	28600	21.74
06 CCM23	18800	12.42	79500	16.14	37900	21.82
07 CCM24	14600	12.42	59400	16.15	30300	21.77
08 CCM25	15700	12.39	63800	16.09	28800	21.79

ORIGINAL (Red)

8C

00418

SEMIVOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Lab File ID (Standard): BDCEJ739 Date Analyzed: 07/18/89

Instrument ID: GCMSJ Time Analyzed: 0939

CCM25 INTERNAL STANDARDS — 1 low

	IS4(PHN) AREA #	RT	IS5(CRY) AREA #	RT	IS6(PRY) AREA #	RT
12 HOUR STD	65300	26.59	45200	35.31	35200	39.91
UPPER LIMIT	130600		90400		70400	
LOWER LIMIT	32650		22600		17600	
EPA SAMPLE NO.						
01 CCM17	68000	26.61	45100	35.34	32300	39.92
02 CCM19	60000	26.49	38600	35.34	26500	39.94
03 CCM20	71900	26.52	51600	35.39	38200	39.96
04 CCM21	75300	26.52	53200	35.39	39100	39.87
05 CCM22	57200	26.57	40300	35.24	29700	39.84
06 CCM23	75500	26.51	53200	35.34	27600	39.92
07 CCM24	57400	26.51	41000	35.32	30800	39.86
08 CCM25	59800	26.47	41000	35.29	12200 *	39.91
09 CN939	64000	26.47	40800	35.29	28600	39.87
10 SBLK2	58100	26.59	41200	35.32	31500	39.91

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

UPPER LIMIT = + 100% of internal standard area.
LOWER LIMIT = - 50% of internal standard area.

SEMIVOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: IT CERRITOS Contract: 68-W8-0068

ORIGINAL (Red)

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Lab File ID (Standard): BDCEI229 Date Analyzed: 07/18/89

Instrument ID: GCMSI Time Analyzed: 2045

	IS1(DCB) AREA #	RT	IS2(NPT) AREA #	RT	IS3(ANT) AREA #	RT
12 HOUR STD	29000	9.95	112000	13.47	54200	18.70
UPPER LIMIT	58000		224000		108400	
LOWER LIMIT	14500		56000		27100	
EPA SAMPLE NO.						
01 CCM25RE	28700	9.90	116000	13.44	48400	18.70

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

UPPER LIMIT = + 100% of internal standard area.
LOWER LIMIT = - 50% of internal standard area.

Column used to flag internal standard area values with an asterisk

8C

00414

SEMIVOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Lab File ID (Standard): BDCEI229 Date Analyzed: 07/18/89

Instrument ID: GCMSI Time Analyzed: 2045

CCM25Reanalysis
Internal Stnd recovery low

	IS4(PHN) AREA #	RT	IS5(CRY) AREA #	RT	IS6(PRY) AREA #	RT
12 HOUR STD	109000	23.14	76500	31.37	59900	35.51
UPPER LIMIT	218000		153000		119800	
LOWER LIMIT	54500		38250		29950	
EPA SAMPLE NO.						
01 CCM25RE	96800	23.14	77400	31.37	25900 *	35.52

IS4 (PHN) = Phenanthrene-d10

UPPER LIMIT = + 100%

(Red)

00808

7B

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Instrument ID: GCMSI Calibration date: 07/18/89 Time: 0730

Lab File ID: BDCEI228 Init. Calib. Date(s): 06/15/89 06/16/89

Min RRF50 for SPCC(#) = 0.050 Max %D for CCC(*) = 25.0%

COMPOUND		RRF	RRF50	%D		
Phenol	*	1.848	1.675	9.4	*	
bis(2-Chloroethyl)Ether		1.662	1.742	-4.8		
2-Chlorophenol		1.409	1.346	4.5		
1,3-Dichlorobenzene		1.614	1.537	4.8		
1,4-Dichlorobenzene	*	1.556	1.443	7.3	*	
Benzyl Alcohol		0.781	0.793	-1.5		
1,2-Dichlorobenzene		1.512	1.561	-3.2		
2-Methylphenol		1.171	1.160	0.9		
bis(2-Chloroisopropyl)Ether		1.788	2.382	-33.2		Ok - CCC responses stable; little shift between days
4-Methylphenol		1.152	1.250	-8.5		
N-Nitroso-di-n-propylamine	#	0.895	1.016	-13.5	#	
Hexachloroethane		0.564	0.568	-0.7		
Nitrobenzene		0.328	0.385	-17.4		
Isophorone		0.695	0.804	-15.7		
2-Nitrophenol	*	0.170	0.194	-14.1	*	
2,4-Dimethylphenol		0.295	0.340	-15.3		
Benzoic Acid		0.146	0.144	1.4		
bis(2-Chloroethoxy)methane		0.447	0.502	-12.3		
2,4-Dichlorophenol	*	0.278	0.282	-1.4	*	
1,2,4-Trichlorobenzene		0.326	0.303	7.1		
Naphthalene		0.901	0.922	-2.3		
4-Chloroaniline		0.097	0.080	17.5		
Hexachlorobutadiene	*	0.179	0.164	8.4	*	
4-Chloro-3-methylphenol	*	0.292	0.329	-12.7	*	
2-Methylnaphthalene		0.715	0.710	0.7		
Hexachlorocyclopentadiene	#	0.250	0.252	-0.8	#	
2,4,6-Trichlorophenol	*	0.359	0.404	-12.5	*	
2,4,5-Trichlorophenol		0.381	0.424	-11.3		
2-Chloronaphthalene		1.210	1.312	-8.4		
2-Nitroaniline		0.249	0.393	-57.8		Ok - CCC response stable
Dimethylphthalate		1.440	1.447	-0.5		
Acenaphthylene		1.678	2.012	-19.9		
2,6-Dinitrotoluene		0.285	0.289	-1.4		
3-Nitroaniline		0.032	0.010	68.8		all estimated due to large shift, RRF < 0.05
Acenaphthene	*	1.125	1.168	-3.8	*	
2,4-Dinitrophenol	#	0.093	0.076	18.3	#	
4-Nitrophenol	#	0.105	0.104	1.0	#	

7C

SEMIVOLATILE CONTINUING CALIBRATION CHECK

00809

ORIGINAL (Red)

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Instrument ID: GCMSI Calibration date: 07/18/89 Time: 0730

Lab File ID: BDCEI228 Init. Calib. Date(s): 06/15/89 06/16/89

Min RRF50 for SPCC(#) = 0.050 Max %D for CCC(*) = 25.0%

COMPOUND	RRF	RRF50	%D
Dibenzofuran	1.628	1.755	-7.8
2,4-Dinitrotoluene	0.335	0.372	-11.0
Diethylphthalate	1.330	1.358	-2.1
4-Chlorophenyl-phenyl Ether	0.584	0.647	-10.8
Fluorene	1.300	1.407	-8.2
4-Nitroaniline	0.111	0.110	0.9
4,6-Dinitro-2-methylphenol	0.080	0.085	-6.3
N-Nitrosodiphenylamine (1) *	0.254	0.307	-20.9 *
4-Bromophenyl-phenyl Ether	0.202	0.212	-5.0
Hexachlorobenzene	0.216	0.204	5.6
Pentachlorophenol *	0.113	0.107	5.3 *
Phenanthrene	0.876	0.885	-1.0
Anthracene	0.902	0.895	0.8
Di-n-butylphthalate	1.303	1.361	-4.5
Fluoranthene *	0.961	1.018	-5.9 *
Pyrene	1.456	1.412	3.0
Butylbenzylphthalate	0.749	0.801	-6.9
3,3'-Dichlorobenzidine	0.193	0.180	6.7
Benzo(a)anthracene	1.141	1.229	-7.7
Chrysene	0.958	0.999	-4.3
bis(2-Ethylhexyl)phthalate	1.030	1.126	-9.3
Di-n-octylphthalate *	2.288	2.466	-7.8 *
Benzo(b)fluoranthene	1.435	1.367	4.7
Benzo(k)fluoranthene	1.354	1.472	-8.7
Benzo(a)pyrene *	1.255	1.277	-1.8 *
Indeno(1,2,3-cd)pyrene	1.211	1.306	-7.8
Dibenz(a,h)anthracene	0.959	0.997	-4.0
Benzo(g,h,i)perylene	1.043	1.083	-3.8
Nitrobenzene-d5	0.329	0.396	-20.4
2-Fluorobiphenyl	1.387	1.658	-19.5
Terphenyl-d14	1.129	1.167	-3.4
Phenol-d5	1.614	1.780	-10.3
2-Fluorophenol	1.357	1.576	-16.1
2,4,6-Tribromophenol	0.148	0.137	7.4

(1) Cannot be separated from Diphenylamine

00121

INTERNATIONAL TECHNOLOGY CORPORATION

ANALYTICAL SERVICES

ORIGINAL (Red)

CERTIFICATE OF ANALYSIS

USEPA Region III, CRL
839 Bestgate Road
Annapolis, MD 21401

Attn: Chuck Sands

August 8, 1989

SDG No: CCM17
Contract No: 68-W8-0068
Case: 12281

CASE NARRATIVE

Thirteen (13) water samples received on July 13, 1989 labeled:

CCM17	CCM19	CCM20	CCM21	CCM22	CCM23
CCM24	CCM25	CCM33	CCM34	CN939	CW504
CW505					

The samples, excluding sample CCM34, were received to be analyzed for full organic TCL's according to the methods outlined in SOW 2/88. Sample CCM34 was received to be analyzled for volatile organics only according to the methods outlined in SOW 2/88. A sample data summary package and computer readable data on floppy diskette has been included with the data package sent to SMO. A copy of the Chain of Custody Record has been included with each data package.

I. Data Receipt Information

The volatile organics portion of sample CN939 was received July 14, 1989. Per Sara Yount of SMO, the holding times for sample CN939 start on July 14, 1989.

Reviewed and Approved: Jennifer L. Roseberry
Jennifer L. Roseberry
Project Manager

004

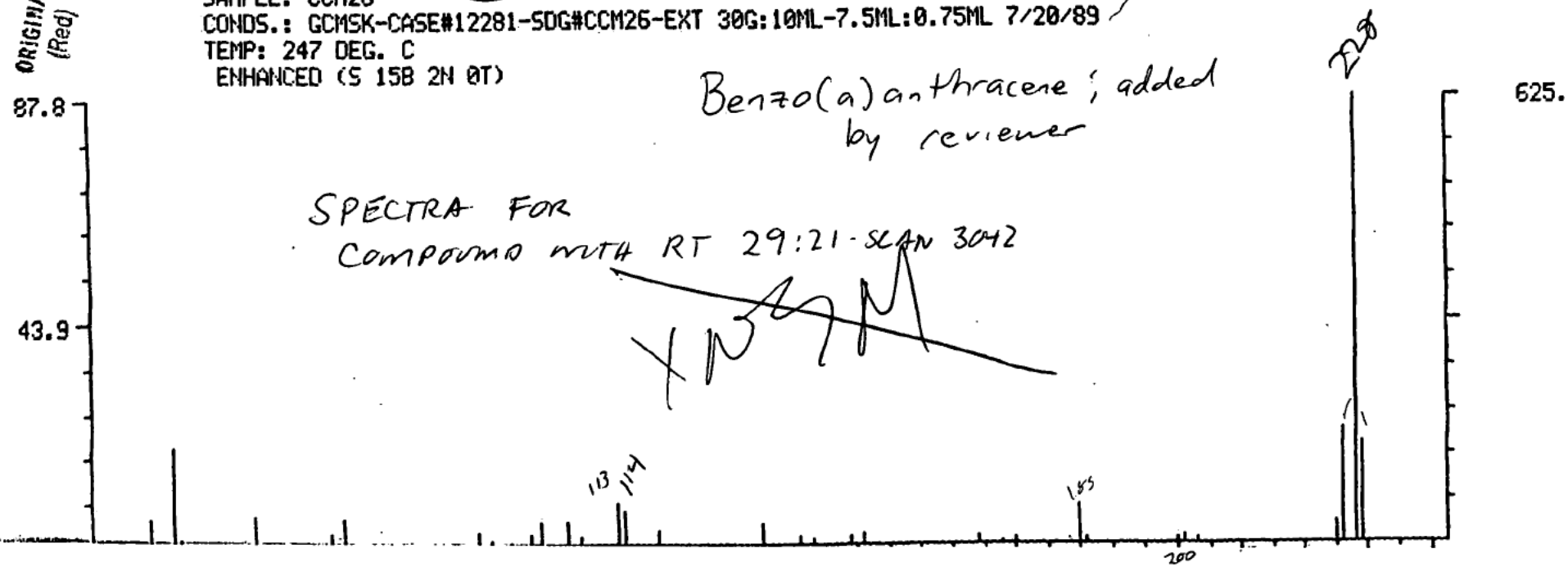
SAMPLE CCM26: SPECTRA FOR RT 29:21, SHOWING MATCH WITH BENZO(A)ANTHRACENE

DUAL MASS SPECTRUM
07/21/89 20:28:00 + 29:21
SAMPLE: CCM26
CONDS.: GCMSK-CASE#12281-SDG#CCM26-EXT 30G:10ML-7.5ML:0.75ML 7/20/89
TEMP: 247 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: 52610EK2 #3042
CALI: 52610EK2 #3

BASE M/Z: 228/ 228
RIC: 1698./ 6624.

ORIGINAL (Red)



Benzo(a)anthracene; added by reviewer

SPECTRA FOR COMPOUND WITH RT 29:21 - SCAN 3042

Quantitation

$$\frac{\text{area compound}}{\text{area internal std}} \times \text{Conc}_{\text{Int Std}} \times \frac{1000\ \text{g/kg}}{\text{grams used}} \times \frac{100\%}{\%\ \text{solids}} \times \text{dilution factor} \times \frac{1}{\text{Response factor}} = \text{concentration}$$

area comp = 4225
area Int std = 123735
Conc Int std = 40.0 mg/l
% solids = 51.0
Dil. factor = 10.0
Response factor = 1.021
grams used = 30.0

$$\text{CONC} = \frac{4225}{123735} \times 40\ \text{mg/l} \times \frac{1000\ \text{g/kg}}{30.0\ \text{g used}} \times 10.0 \times \frac{1}{1.021}$$

$$= 450\ \text{mg/kg}$$

RT SHIFT

	7/21/89 DAILY STANDARD	SAMPLE CCM26	Shift
IS #4	2209	2208	-0.01
Benz (A) ANTHRACENE	3046	3042	-0.04
IS #5	3052	3050	-0.02

REFERENCE SPECTRA FOR BENZ(A) ANTHRACENE

C18.H12
1000
M WT 228
B PK 228
RANK 1
IN 16048
PUR 626

BENZ[A]ANTHRACENE

SAMPLE CCM27: SPECTRUM FOR R.T 29:22, SHOWING MATCH WITH BENZO(A) ANTHRACENE

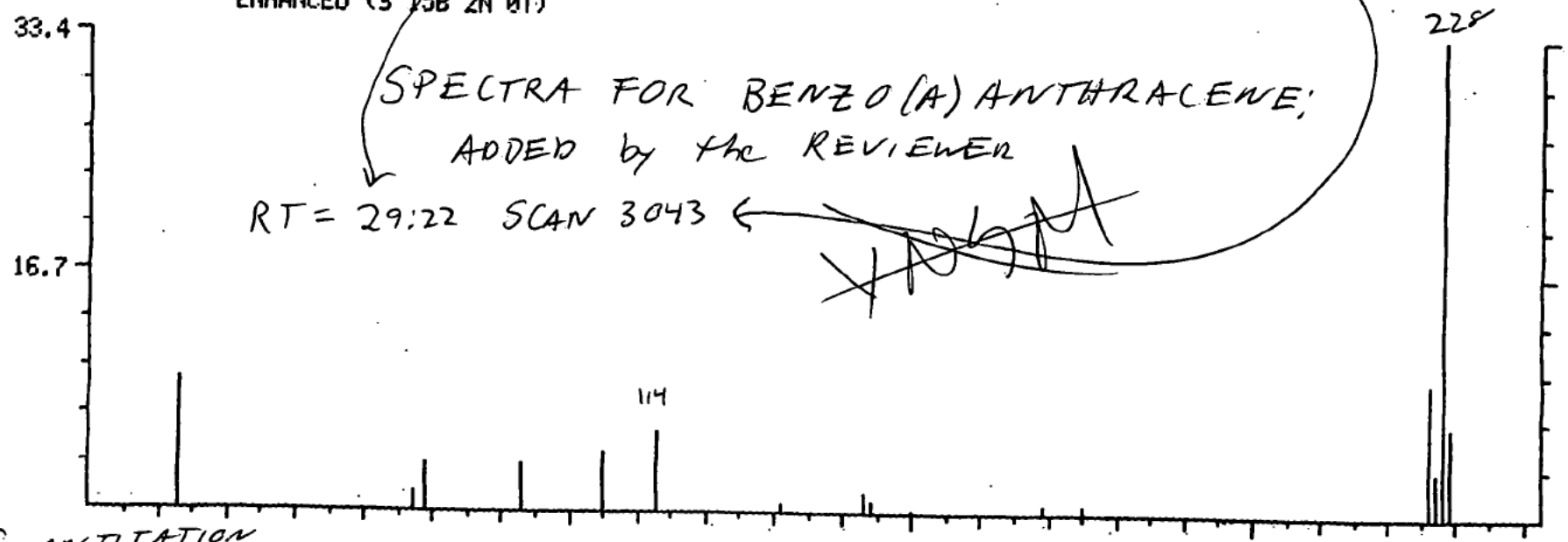
00464

ORIGINAL (Red)

DUAL MASS SPECTRUM
07/21/89 21:23:00 + 29:22
SAMPLE: CCM27
CONDS.: GCMSK-CASE#12281-SDG#CCM26-EXT 30G:10ML-7.5ML:0.75ML 7/20/89
TEMP: 247 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: 52610EK3 #3043
CALI: 52610EK3 #3

BASE M/Z: 228/ 240
RIC: 1234./ 11664



SPECTRA FOR BENZO(A) ANTHRACENE; ADDED by the REVIEWER

RT = 29:22 SCAN 3043

QUANTITATION

$$CONC = \frac{\text{area compound}}{\text{area internal standard}} \times \text{Conc}_{\text{Int Std}} \times \frac{1}{\text{response factor}} \times \frac{1000\ g/kg}{\text{grams used}} \times \frac{100\%}{\%\ \text{solids}} \times \text{Dilution factor}$$

area comp = 3406
area Int std #5 = 113386
conc Int std = 40.0 mg/l
% solids = 58.
Dilution factor = 10
response factor = 1.021
grams used = 20.0

$$CONC = \frac{3406}{113386} \times 40.0\ mg/l \times \frac{1}{1.021} \times \frac{1000}{30} \times \frac{100\%}{58\%} \times 10$$

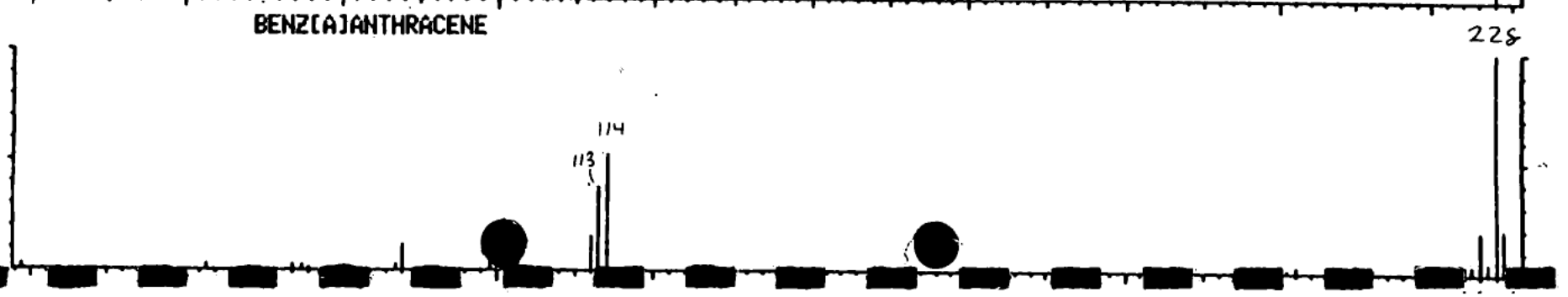
$$= \boxed{680\ mg/kg}$$

RT SHIFT

	DAILY Standard	SAMPLE CCM27	shift
IS #4	2209	2207	-0.02
benz (a) anthracene	3046	3043	-003
IS #5	3052	3049	-003

REFERENCE SPECTRUM FOR BENZ (A) ANTHRACENE

C18.H12
BENZ[A]ANTHRACENE
1000
M WT 228
B PK 228
RANK 1
IN 16048
PUR 626



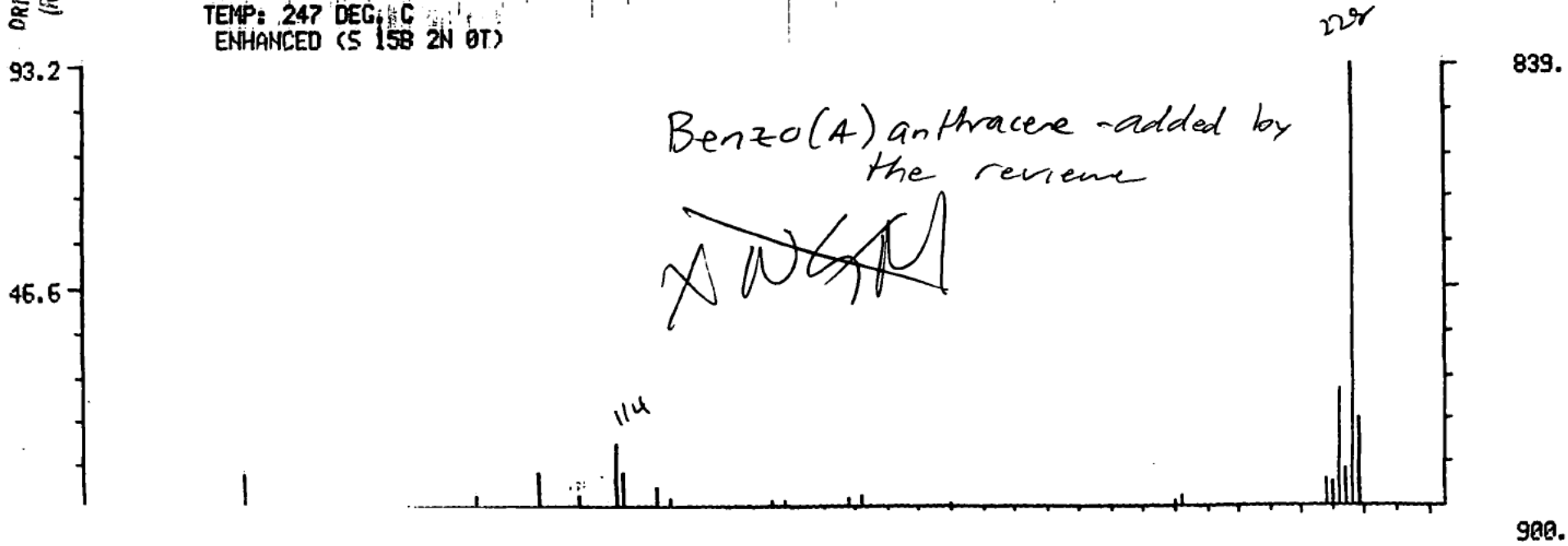
00529

SAMPLE CCM29: SPECTRA FOR R.T. 29:21 SHOWING MATCH WITH BENZO(A) ANTHRACENE

DUAL MASS SPECTRUM
07/21/89 22:18:00 + 29:21
SAMPLE: CCM29
CONDS.: GCMSK-CASE#12281-SDG#CCM26-30G:10ML::7.5ML:1.5ML 7/20/89
TEMP: 247 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: 52610EK4 #3042 BASE M/Z: 228/ 228
CALI: 52610EK4 #3 RIC: 1896./ 6176.

ORIGINAL (Red)



Benzo(A) anthracene - added by the reviewer

QUANTITATION

$$CONC = \frac{\text{area compound}}{\text{area INTERNAL STANDARD}} \times \text{CONCENTRATION INT. STND} \times \frac{1}{\text{RESPONSE FACTOR}} \times \frac{1000\ g/kg}{\text{grams used}} \times \frac{100\%}{\%\ \text{solids}} \times \text{dilution factor}$$

Reference spectra for benzo(A) anthracene

area comp. = 4749
area Int Stnd #5 = 119828
Conc Int Stnd #5 = 40 ng/l
% solids = 84%
dilution factor = 2.0
response factor = 1.021
grams used = 30.0

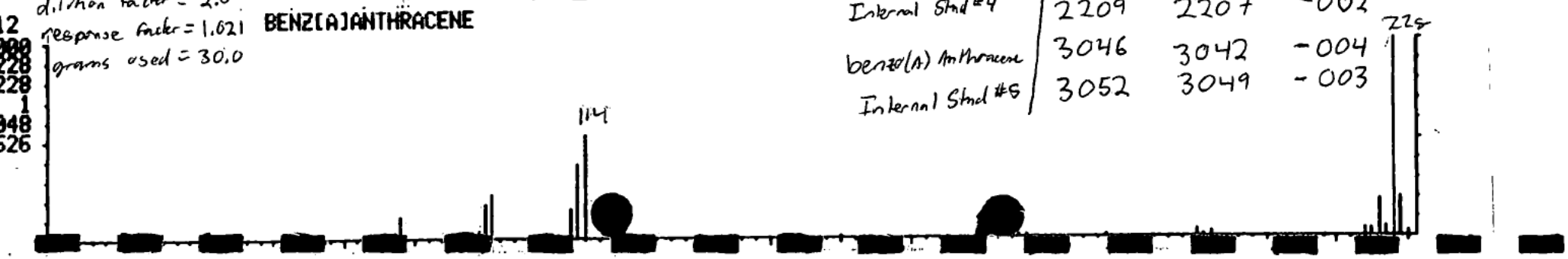
$$CONC = \frac{4749}{119828} \times 40\ ng/l \times \frac{1}{1.021} \times \frac{1000\ g/kg}{30.0\ g} \times \frac{100\%}{84\%} \times 2$$

$$= \boxed{120\ ng/kg}$$

R.T. SHIFT

	DAILY STANDARD	SAMPLE CCM29	shift
Internal Stnd #4	2209	2207	-002
benzo(A) Anthracene	3046	3042	-004
Internal Stnd #5	3052	3049	-003

BENZ[A]ANTHRACENE

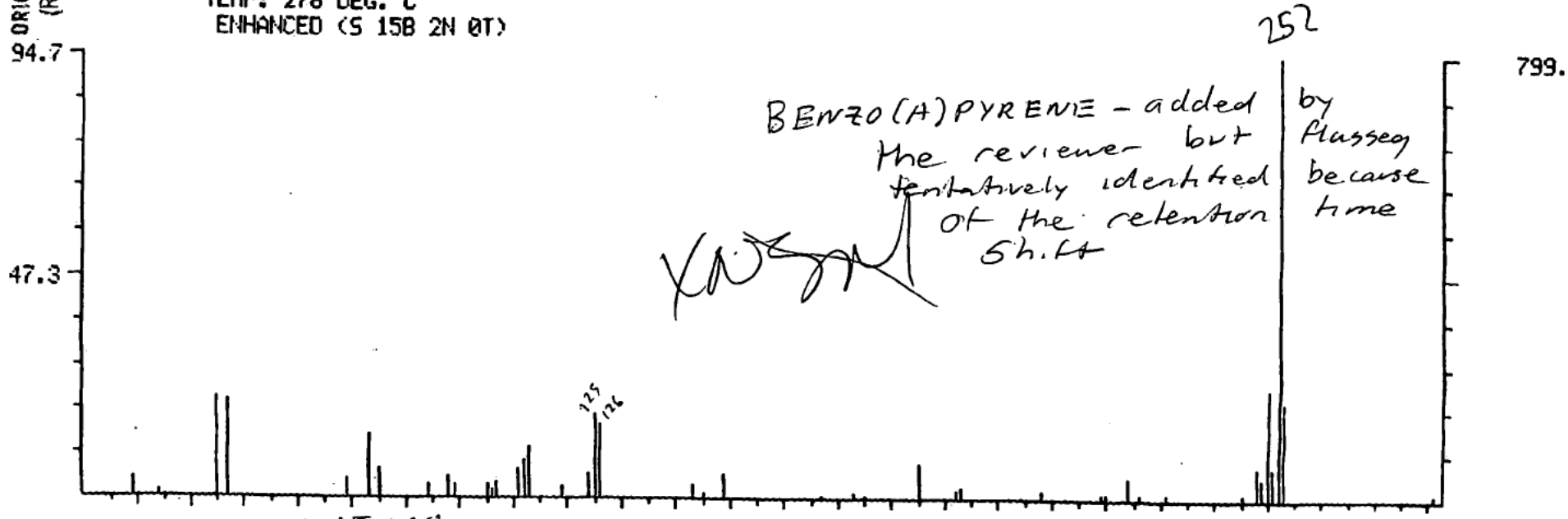


SAMPLE CCM291 SPECTRA FOR R.T. 33:16 SHOWING MATCH WITH BENZO(A) PYRENE

DUAL MASS SPECTRUM
07/21/89 ~~22:18~~:00 + 33:16
SAMPLE: CCM29
CONDS.: GCMSK-CASE#12281-SDG#CCM26-30G:10ML::7.5ML:1.5ML 7/20/89
TEMP: 278 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: 52610EK4 #3448 BASE M/Z: 252/ 252
CALI: 52610EK4 #3 RIC: 2936./ 8128.

ORIGINAL (Red)



BENZO(A)PYRENE - added by flusseq because the reviewer but tentatively identified of the retention time shift

QUANTITATION:

$$\text{Conc} = \frac{\text{area compound}}{\text{area Internal standard}} \times \text{Conc}(\text{Internal Standard}) \times \frac{1}{\text{response factor}} \times \frac{1000\,\text{g/kg}}{\text{grams used}} \times \frac{100\%}{\%\text{ solids}} \times \text{Dilution factor}$$

area compound = 3460
area IS #6 = 101893
Conc. Int Std #6 = 40ng/l
response factor = 1.152
grams used = 300
% solids = 84%
Dilution factor = 2

$$\text{Conc} = \frac{3460}{101893} \times 40\text{ng/l} \times \frac{1}{1.152} \times \frac{1000}{300} \times \frac{100}{84} \times 2$$

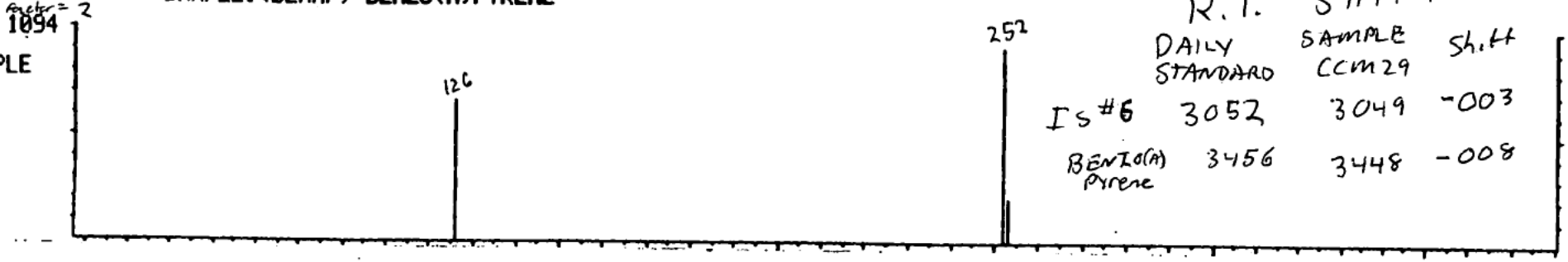
REFERENCE SPECTRA FOR BENZO (A) PYRENE

LIBRARY SEARCH = 90ng/kg

DATA: LIBRARYFB: 83 BASE M/E: 252
M.WT.: 354

SAMPLE: (BENAP) BENZO(A)PYRENE

SAMPLE



R.T. SHIFT

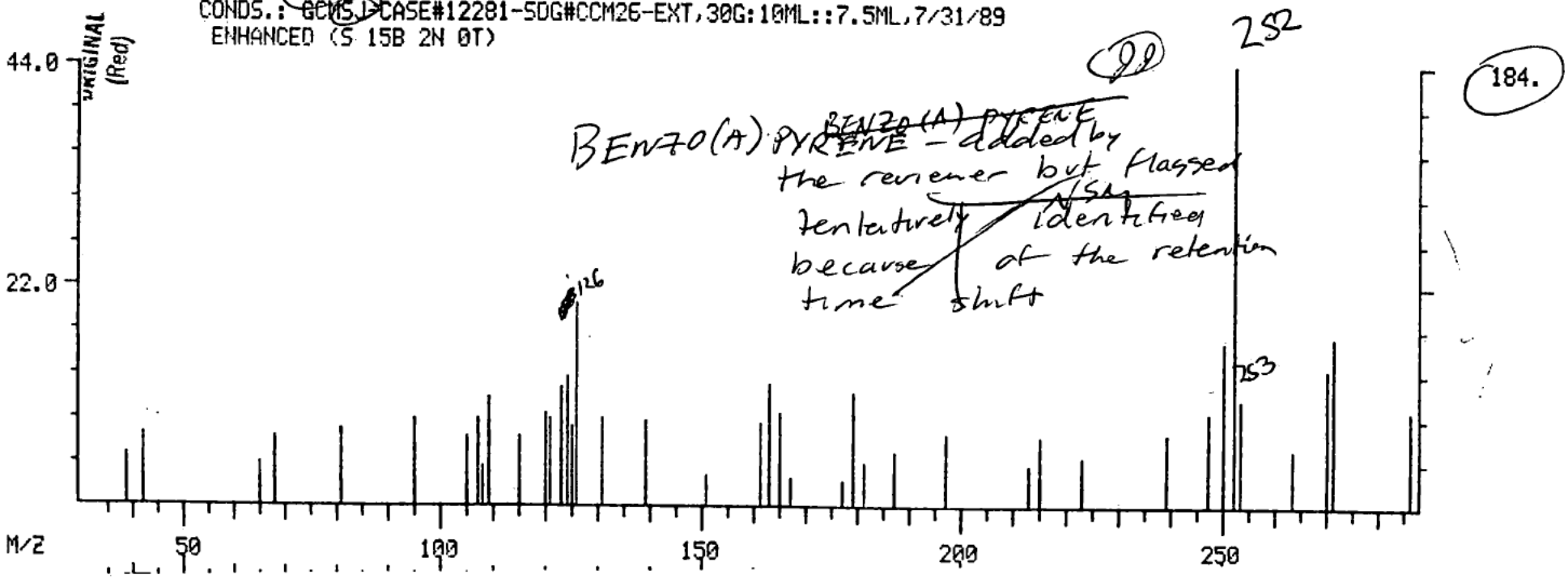
	DAILY STANDARD	SAMPLE CCM29	Shift
IS #6	3052	3049	-003
BENZO(A) Pyrene	3456	3448	-008

006 SAMPLE CN938: Compound with RT 38:12 showing match with BENZ(A)PYRENE

DUAL MASS SPECTRUM
08/10/89 18:57:00 38:12
SAMPLE: CN938
CONDS.: GCMS1 CASE#12281-SDG#CCM26-EXT,30G:10ML::7.5ML,7/31/89
ENHANCED (S 15B 2N 0T)

DATA: 52610REJ2 #2292
CALI: FJ081089 #6

BASE M/Z: 252/ 43
RIC: 1613./ 7927.



BENZO(A) PYRENE ~~BENZO(A) PYRENE~~ – added by the reviewer but flagged tentatively identified because of the retention time shift

QUANTITATION

REFERENCE SPECTRA FOR BENZO(A)PYRENE

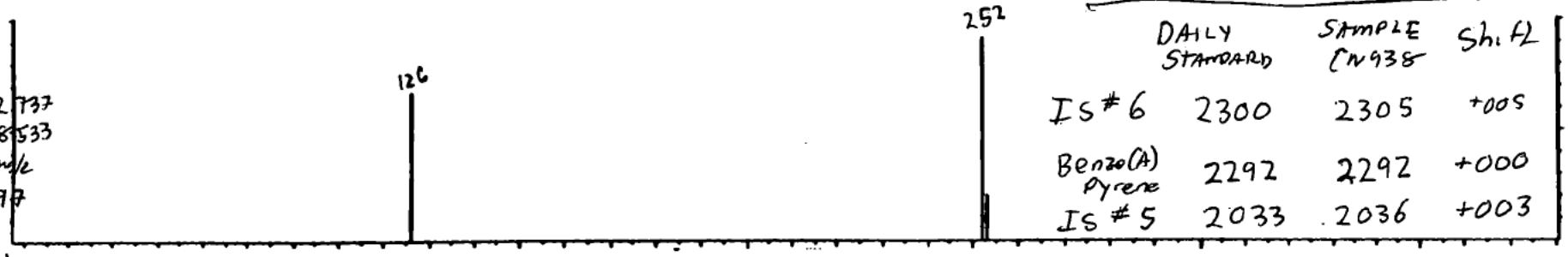
$$\frac{\text{area compound}}{\text{area Internal Standard}} \times \frac{\text{Conc IAF std}}{} \times \frac{1}{\text{response factor}} \times \frac{1000\ \text{g/kg}}{\text{grams used}} \times \frac{100\%}{\%\ \text{solids}} \times DF = \text{Concentration}$$

$$\text{Conc} = \frac{2737}{48533} \times 40 \times \frac{1}{1.297} \times \frac{1000}{30} \times \frac{100}{74} \times 10 = \boxed{780\ \text{ng/kg}}$$

LIBRARY SEARCH

DATA: LIBRARYFB: 83 BASE M/E:252
M.WT.: 354

SAMPLE:(BENAP) BENZO(A)PYRENE



SAMPLE

Area Compound = 2737
area I.S#6 = 48533
Conc. IS#6 = 40 ng/L
response factor = 1.297
grams used = 30
% solids = 74
Dilution Factor = 10

RT SHIFT

	DAILY STANDARD	SAMPLE CN938	Shift
IS #6	2300	2305	+005
Benzo(A) Pyrene	2292	2292	+000
IS #5	2033	2036	+003

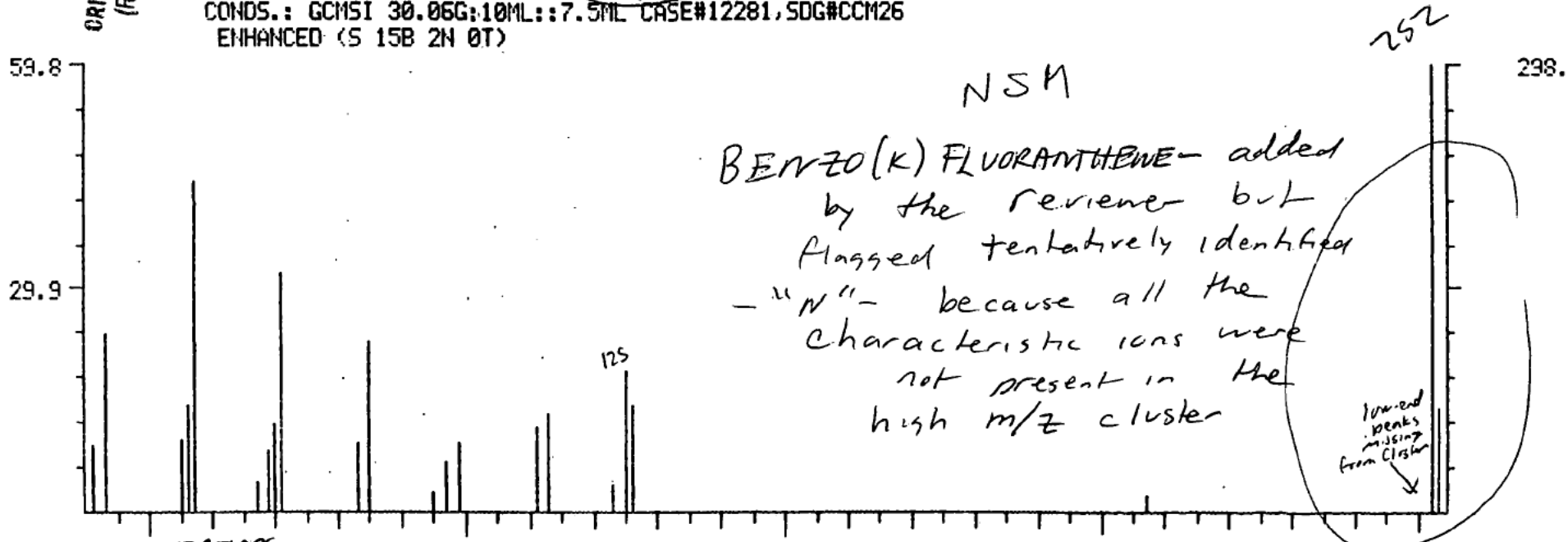
SAMPLE CQ623 : SPECTRA FOR R.T. 37:26 SHOWING MATCH WITH BENZO(K) FLUORANTHENE

J. Galan 8/13/89

DUAL MASS SPECTRUM
08/01/89 14:53:00 + 37:26
SAMPLE: ~~CQ 623 EXT 7/31/89~~ CQ623
CONDS.: GCMSI 30.06G:10ML::7.5ML CASE#12281,SDG#CCM26
ENHANCED (S 15B 2N 0T)

DATA: 52610REI4 #2246 BASE M/Z: 252/ 57
CALI: FI072889 #8 RIC: 1703./ 3979.

ORIGINAL (Red)



NSM

BENZO(K) FLUORANTHENE - added by the reviewer but flagged tentatively identified - "N" - because all the characteristic ions were not present in the high m/z cluster

QUANTITATION

$$\text{CONCENTRATION} = \frac{\text{area benzo(k)fluoranthene}}{\text{area Internal Std}} \times \text{Concentration Internal Standard} \times \frac{1}{\text{response factor}} \times \frac{1000\ \text{g/kg}}{\text{grams used}} \times \frac{100\%}{\%\ \text{solids}} \times \text{dilution factor}$$

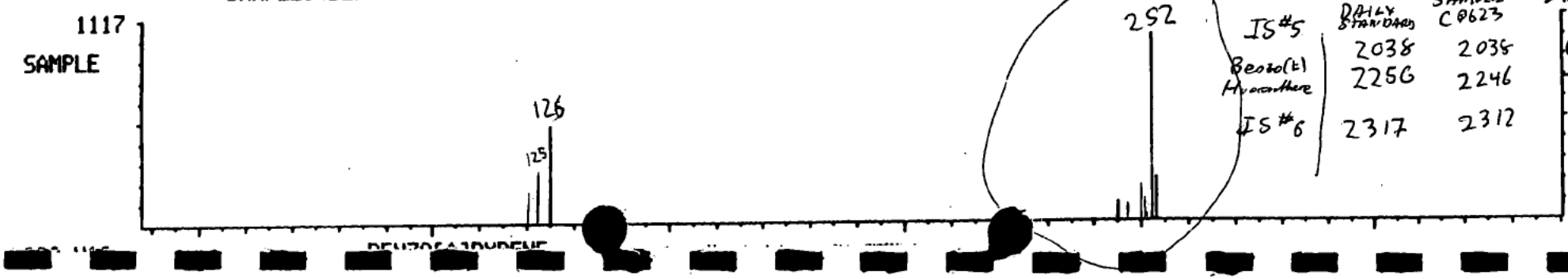
area Benzo(k) = 1851
area Internal Std # = 29796
conc Int. Std = 40ng/l
response factor = 1.302
grams used = 30.0
% solids = 64
dilution factor = 10

$$\text{Conc} = \frac{1851}{29796} \times 40\text{ng/l} \times \frac{1}{1.302} \times \frac{1000\ \text{g/kg}}{30\text{g}} \times \frac{100\%}{64\%} \times 10 = \boxed{990\ \text{ng/kg}}$$

REFERENCE SPECTRA FOR BENZO(K) FLUORANTHENE

LIBRARY SEARCH
C20.H12
SAMPLE:(BEN-K) BENZO(K)FLUORANTHENE

DATA: LIBRARYFB: 82 BASE M/E:252
M.WT.: 252



RT shift

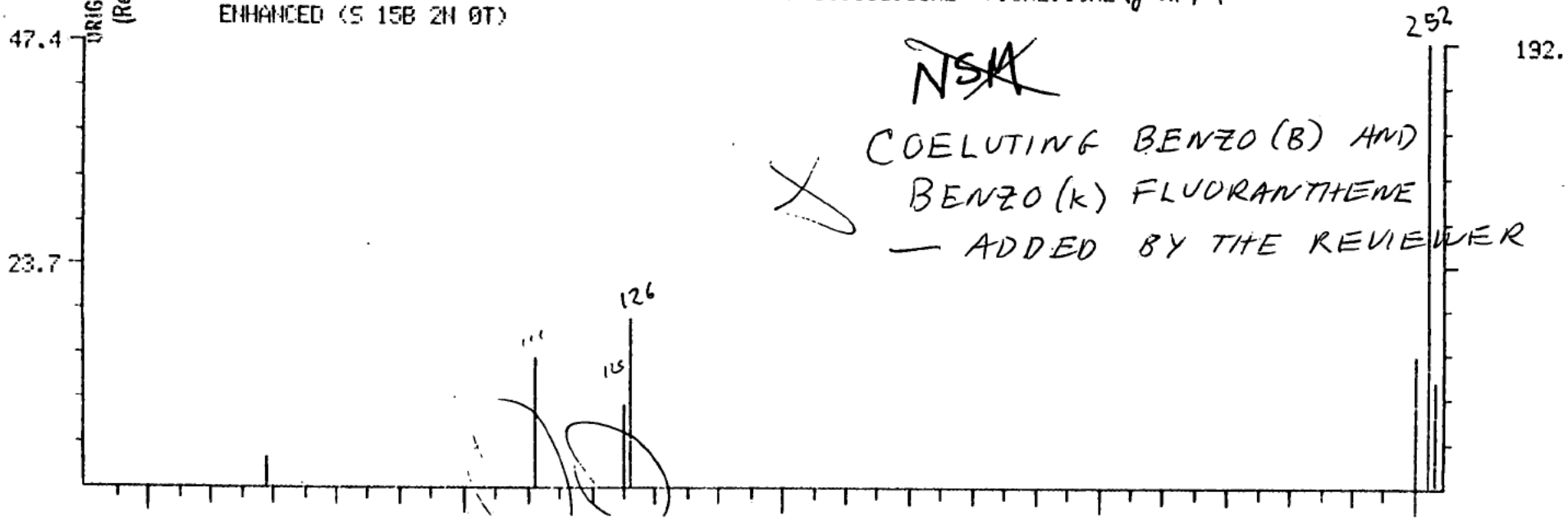
	DAILY STANDARD	SAMPLE CQ623	SHIFT
IS #5	2038	2038	000
Benzo(k) Fluoranthene	2256	2246	-004
IS #6	2317	2312	-005

00814

SAMPLE CQ624: SPECTRUM FOR R.T 36:42 SHOWING MATCH WITH BENZO FLUORANTHENE

DUAL MASS SPECTRUM
08/09/89 16:44:00 + 36:42
SAMPLE: CQ624
CONDS.: GCMSI,CASE#12281,SDG#CCM26,EXT 7/3/89 30.01G:10ML--7.5ML ~~10ML~~ 9/10/89
ENHANCED (S 15B 2N 0T)

DATA: 52610REI10 #2202 BASE M/Z: 252/ 252
CALI: 52610REI10 #5 RIC: 470./ 2263.



NSA

COELUTING BENZO(B) AND BENZO(K) FLUORANTHENE — ADDED BY THE REVIEWER

area: combined benzo(b), benzo(k) fluoranthene = 1683

area Int Standard #6 = 37440

Concentration Int Stnd #6 = 40 ng/l

Benzo(B) response factor = 1.704

Benzo(K) response factor = 1.746

$$\text{CONCENTRATION} = \frac{\text{area Compound}}{\text{area Internal standard}} \times \text{Conc Internal Standard} \times \frac{1}{\text{response factor}} \times \frac{1000\ \text{g/kg}}{\text{grams used}} \times \frac{100\%}{\%\ \text{SOLIDS}} \times \text{DILUTION FACTOR}$$

ASSUMING AREA OF THE PEAK IS ½ BENZO(B) AND ½ BENZO(K), area = $\frac{1683}{2}$ = 841

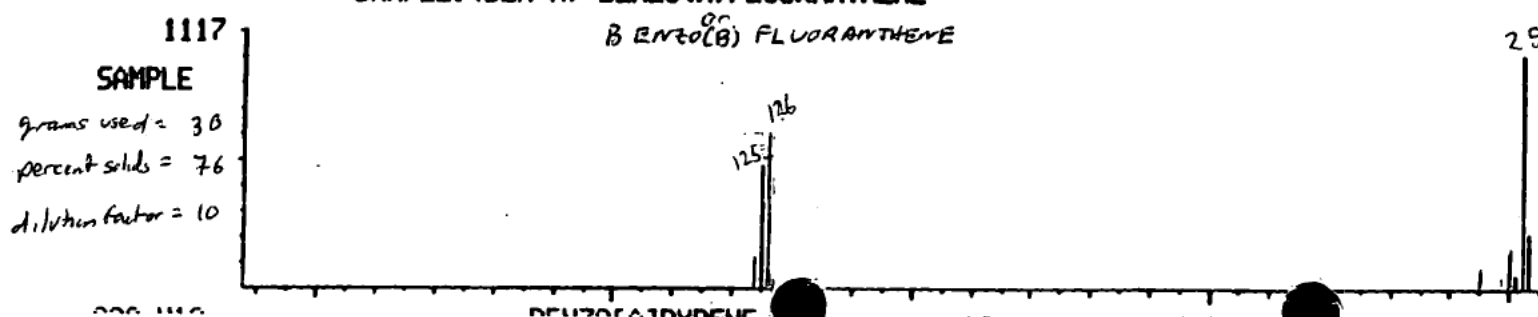
$$\text{CONC}_{\text{BENZO(B)}} = \frac{841}{37440} \times 40\ \text{ng/l} \times \frac{1}{1.704} \times \frac{1000\ \text{g/kg}}{30.0\ \text{g}} \times \frac{100\%}{76\%} \times 10 = \boxed{230\ \text{ng/kg}}$$

$$\text{CONC}_{\text{BENZO(K)}} = \frac{841}{37440} \times 40\ \text{ng/l} \times \frac{1}{1.746} \times \frac{1000\ \text{g/kg}}{30.0\ \text{g}} \times \frac{100\%}{76\%} \times 10 = \boxed{230\ \text{ng/kg}}$$

LIBRARY SEARCH
C20.H12
SAMPLE:(BEN-K) BENZO(K)FLUORANTHENE
or
BENZO(B) FLUORANTHENE

DATA: LIBRARYFB: 82
M.WT.: 252

BASE M/E:252



RT SHIFT

	DAILY STANDARD	SAMPLE CQ624	SHIFT
IS #5	1997	1994	-003
Benzo(B) Fluoranthene	2203	2202	-001
Benzo(K) Fluoranthene	2204	2202	-002
IS # 6	2272	2269	-003

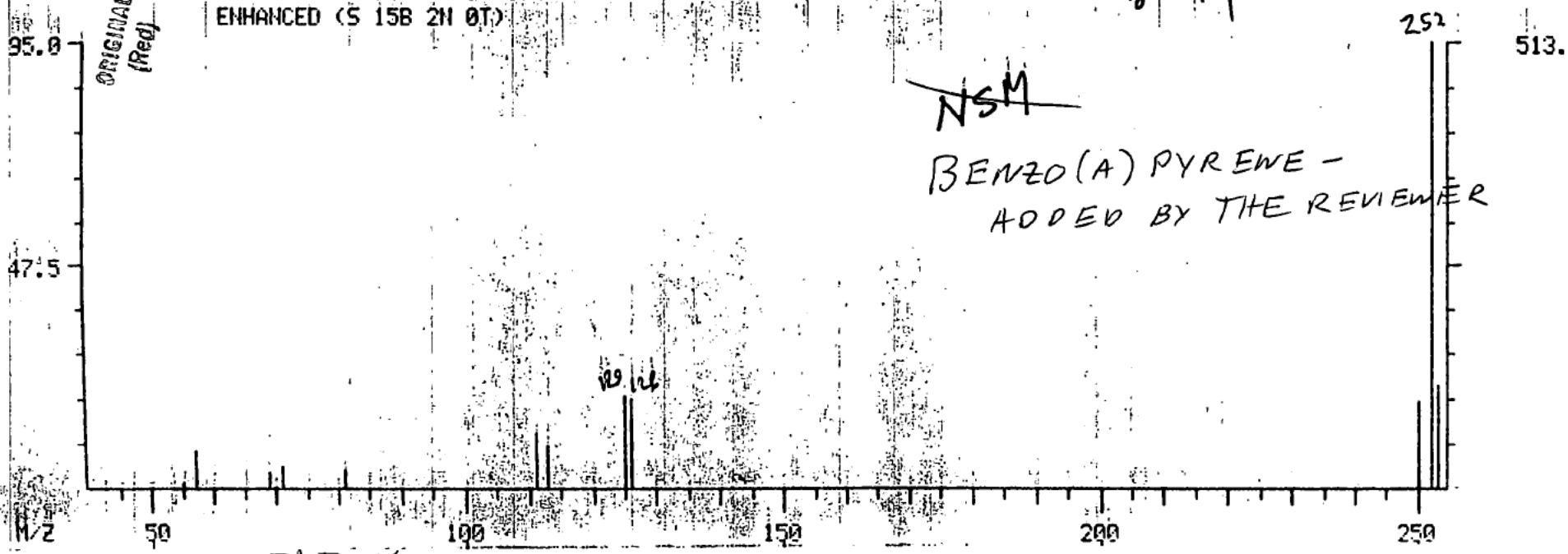
00815

SAMPLE CQ624: SPECTRA FOR RT 37:37 SHOWING MATCH WITH BENZO(A)PYRENE

DUAL MASS SPECTRUM
08/09/89 16:44:00 + 37:37
SAMPLE: CQ624
CONDS.: GCMSI,CASE#12281,SDG#CCM26,EXT 7/3/89 30.01G:10ML--7.5ML~~+10ML~~ rg 9/10/89
ENHANCED (S 15B 2N 0T)

DATA: 52610REI10 #2257 BASE M/Z: 252/ 252
CALI: 52610REI10 #5 RIC: 1167./ 2363.

ORIGINAL (Red)



NSM

BENZO(A) PYRENE - ADDED BY THE REVIEWER

QUANTITATION

$$\text{Concentration} = \frac{\text{area Benzo(a)pyrene}}{\text{area Internal standard}} \times \text{Conc Int. Std} \times \frac{1}{\text{response factor}} \times \frac{1000\ \text{g/kg}}{\text{grams used}} \times \frac{100\%}{\%\ \text{solids}} \times \text{Dilution factor}$$

$$\text{Conc} = \frac{2128}{37440} \times 40\ \text{mg/L} \times \frac{1}{1.381} \times \frac{1000\ \text{g/kg}}{30.0\ \text{g}} \times \frac{100\%}{76\%} \times 10 = \boxed{720\ \text{mg/kg}}$$

area Benzo(a)pyrene = 2128

area Int Std #6 = 37440

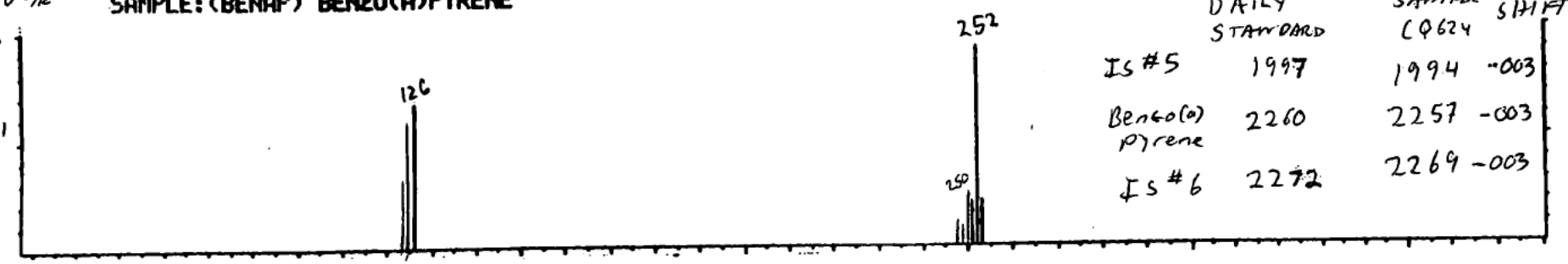
Conc. Int Standard #6 = 40 mg/L

REFERENCE SPECTRA FOR BENZO(A)PYRENE

LIBRARY SEARCH

SAMPLE:(BENAP) BENZO(A)PYRENE

DATA: LIBRARYFB: 83 BASE M/E:252
M.WT.: 354



response factor = 1.381

grams used = 30

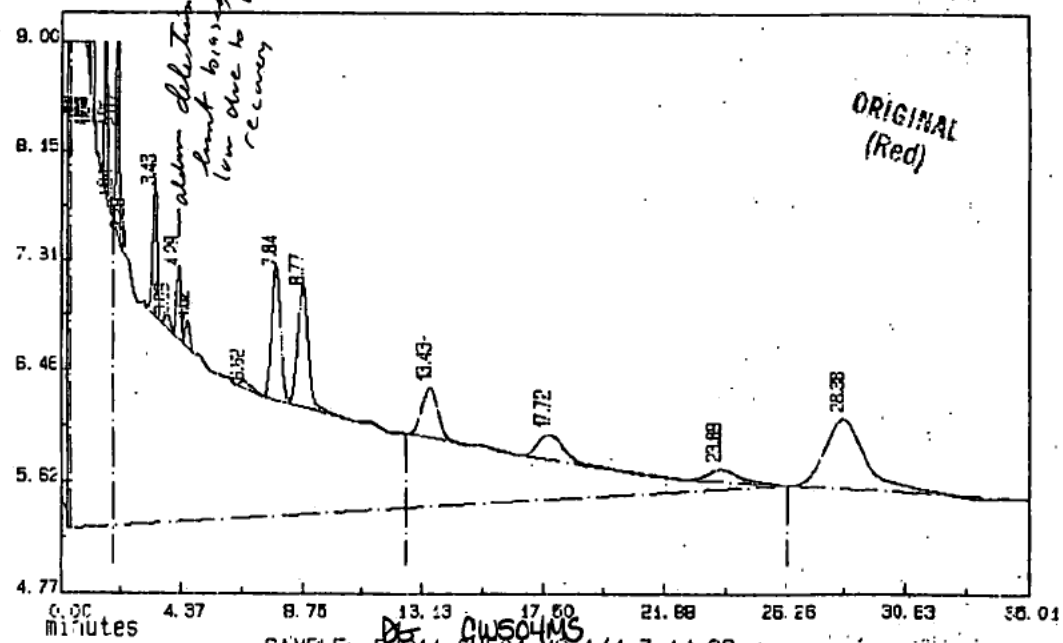
% solids = 76

dilution factor = 10

RT SHIFT

	DAILY STANDARD	SAMPLE CQ624	SHIFT
IS #5	1997	1994	-003
Benzo(a) pyrene	2260	2257	-003
IS #6	2272	2269	-003

CW504 MATRIX SPIKE



A11 PO 198 1029

SAMPLE: ~~SE011, CW504 MS,~~ DG CW504MS 1/4, 7-14-89
ANALYZED: Tue Jul 18, 1989 09: 13: 12 ~~am~~
RESULT: /EPA/A11/RES/A11 PO 198 1029.RES

D. Galvan
8/4/89

Column Types
M-Mixed Phase
O-OV-1
V-OV-210

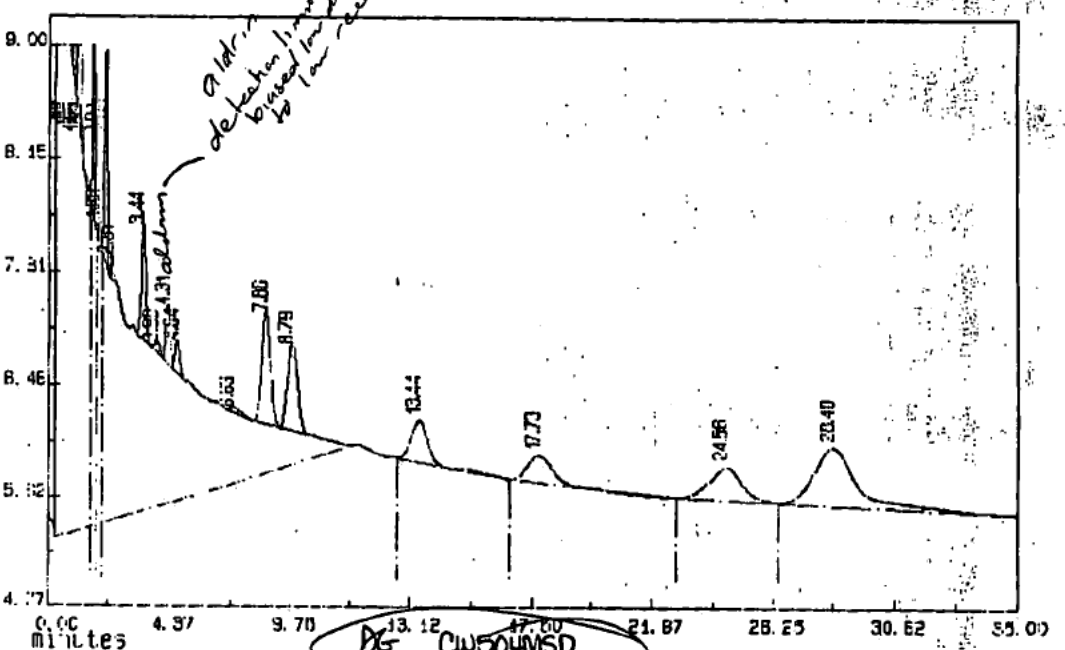
Analysis Types
C-24-Hour Calib.
P-Primary Sequence
S-Secondary Sequence

Instrument ID
Column Type
Analysis Type

Column #: 507
Vol. Inj. 5ul

CW504 MATRIX SPIKE DUPLICATE 01092

PRIMARY ANALYSIS



A11 PO 198 1030

SAMPLE: ~~SE011, CW504 MSD,~~ DG CW504MSD 1/4, 7-14-89
ANALYZED: Tue Jul 18, 1989 09: 49: 29 ~~am~~
RESULT: /EPA/A11/RES/A11 PO 198 1030.RES

D. Galvan
8/4/89

Column Types
M-Mixed Phase
O-OV-1
V-OV-210

Analysis Types
C-24-Hour Calib.
P-Primary Sequence
S-Secondary Sequence

Instrument ID
Column Type
Analysis Type

Column #: 507
Vol. Inj. 5ul

PROJECT NAME: Gulf Oil Darby Creek
TDD NO.: F3-8906-07

EPA SITE NO.: PA 788
REGION: III

SUPPORT DOCUMENTATION FOR THE REVIEW OF INORGANIC ANALYTICAL DATA PACKAGE

ORIGINAL (Red)

CASE/SAS NO.: 12281
TYPE OF ANALYSIS: Inorg/CN
CONTRACT LABORATORY: SKINER
APPLICABLE IFB OR SOW: 7/88
REVIEWER: R. Cohen
REVIEW DATE: April 10, 1990

APPLICABLE SAMPLE NO's.: MCB000-24, MCW244, 245
MCB961, 962, MCW102, 103
MCW073, MCW074

THE FOLLOWING TABLE INDICATES AREAS WHICH WERE EXAMINED IN DETAIL, THE IDENTIFIED PROBLEM AREAS, AND SUPPORT DOCUMENTATION ATTACHMENTS:

	AREAS EXAMINED IN DETAIL (CHECK (✓) IF YES OR FOOTNOTE LETTER FOR COMMENTS BELOW)					PROBLEM AREAS IDENTIFIED (CHECK (✓) IF YES OR FOOTNOTE NUMBER FOR COMMENTS BELOW)					SUPPORT DOCUMENTATION ATTACHMENTS (CHECK (✓) IF YES OR IDENTIFY ATTACHMENT NO.)				
	ALL APPLICABLE ANALYSES	ICP OR A.A. METALS	FURNACE METALS	COLD VAPOR MERCURY	CYANIDE	ALL APPLICABLE ANALYSES	ICP OR A.A. METALS	FURNACE METALS	COLD VAPOR MERCURY	CYANIDE	ALL APPLICABLE ANALYSES	ICP OR A.A. METALS	FURNACE METALS	COLD VAPOR MERCURY	CYANIDE
HOLDING TIMES	✓														
BLANK ANALYSIS RESULTS	✓						✓				✓				
MATRIX SPIKES (PRE-DIGESTION)	✓						✓				✓				
DUPLICATES	✓										✓				
QUANTITATION OF RESULTS	✓						✓		✓	✓	✓				
DETECTION LIMITS/SENSITIVITY	✓										✓				
INITIAL CALIBRATIONS	✓														
CONTINUING CALIBRATIONS	✓														
LABORATORY CONTROL STANDARDS	✓														
ICP LINEAR RANGE ANALYSIS	✓														
ICP INTERFERENCE CHECKS	✓														
ICP SERIAL DILUTIONS	✓						✓				✓				
GFAA POST-DIGESTION SPIKES	✓						✓				✓				
GFAA DUPLICATE BURNS	✓														
GFAA STANDARD ADDITIONS	✓										✓				
OTHERS	✓														

COMMENTS:

SDG-MCBD04

BLANK ANALYSIS RESULTS

TASK	TYPE	CONC	MATRIX	SAMPLE #	SOURCE OF H_2O	CONTAMINANTS (CONCENTRATION / DETECTION LIMIT)
Metals (SDG MCBD04)	ICB	low	blanks	ICB	lab	ND
	CCB 1			CCB1		Ba 48 ug/l Cr 5.2 Cu 5.6 Zn 6.8
	CCB 2, CCB3					ND
	CCB4					Ba 2.3 Fe 7.1 As 2.0 ●
	CCB 5					Ba 2.3 Fe 12.0 Al 33.6 ●
	CCB 6					Cr 6.0 ● Fe 37.6 ● Mn 5.0 ● Na 54.5 ug/l Ni 11.5
	CCB 7					Ba 2.7 ● Fe 8.6 Ca 670.8 Fe 26.6 Zn 18.7 ●
	solid prep blk			PBlk(S)		
	filtered blank			MCBD11	MHS	Ca 385 ug/l Mg 68.8 Na 323 Zn 11.3
CN	CN - all blks				lab/MHS	ND

LABORATORY REPORTED FIELD BLANK DATA IS COMPARED WITH THE SAMPLE DATA IN A TABULATION FORM WITHIN SAMPLE ANALYTICAL DATA SUMMARY.

COMMENTS:

(1) RESULT REPORTED BY LABORATORY AND CONFIRMED BY REVIEWER.

(2) RESULT INFERRED FROM RAW DATA

● = highest level for metal

(blks from both SDGs are cross-applied)

SDGMCBD00

BLANK ANALYSIS RESULTS

TASK	TYPE	CONC	MATRIX	SAMPLE #	SOURCE OF H_2O	CONTAMINANTS (CONCENTRATION / DETECTION LIMIT
Metals	ICB - low				lab	ND
	CCB 1					ND
	CCB 2					Ba 2.6 ug/l Fe 10.1
	CCB 3					Fe 18.3 Mg 51.1
	CCB 4					Fe 17.3 Mg 54.7
	CCB 5					ND
	prep-blk-water			PBW		Fe 13.3 ug/l Ca 42.6 Cu 3.1
	field blank			MCBD24	NVS	Ca 70.2 ug/l Cu 5.8 Fe 30.2 Mg 52.3 Ni 12.4 Na 74.6 V 5.6 Zn 7.6
CN	CN - all blanks				lab/NVS	ND

LABORATORY REPORTED FIELD BLANK DATA IS COMPARED WITH THE SAMPLE DATA IN A TABULATION FORM WITHIN SAMPLE ANALYTICAL DATA SUMMARY.

COMMENTS:

(1) RESULT REPORTED BY LABORATORY AND CONFIRMED BY REVIEWER.

(2) RESULT INFERRED FROM RAW DATA

● = highest level for metal

ORIGINAL (Red)

SDG mCBDOU

ORIGINAL (Red)

unfiltered aqueous samples

U.S. EPA - CLP

2B
CRDL STANDARD FOR AA AND ICP

ORIGINAL (Red)

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 12281 SAS No.: SDG No.: MCBD00

AA CRDL Standard Source: SS-DP

ICP CRDL Standard Source: SKINER

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
				Initial			Final	
	True	Found	%R	True	Found	%R	Found	%R
Aluminum								
Antimony				120.0	117.41	97.8	121.11	100.9
Arsenic	10.0	9.24	92.4					
Barium								
Beryllium				10.0	9.92	99.2	9.92	99.2
Cadmium				10.0	11.63	116.3	10.85	108.5
Calcium								
Chromium				20.0	17.75	88.8	22.66	113.3
Cobalt				100.0	105.01	105.0	103.35	103.4
Copper				50.0	51.20	102.4	54.34	108.7
Iron								
Lead	5.0	5.42	108.4					
Magnesium								
Manganese				30.0	33.20	110.7	31.58	105.3
Mercury								
Nickel				80.0	79.27	99.1	84.42	105.5
Potassium								
Selenium	5.0	5.27	105.4					
Silver				20.0	14.73	73.6	19.62	98.1
Sodium								
Thallium	10.0	9.71	97.1					
Vanadium				100.0	103.40	103.4	105.27	105.3
Zinc				40.0	35.23	88.1	35.21	88.0

0018

U.S. EPA - CLP

2B
CRDL STANDARD FOR AA AND ICP

ORIGINAL (Red)

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 12281 SAS No.: SDG No.: MCBD00

AA CRDL Standard Source: SS-DP

ICP CRDL Standard Source: SKINER

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
				Initial			Final	
	True	Found	%R	True	Found	%R	Found	%R
Aluminum								
Antimony								
Arsenic	10.0	10.68	106.8					
Barium								
Beryllium								
Cadmium								
Calcium								
Chromium								
Cobalt								
Copper								
Iron								
Lead								
Magnesium								
Manganese								
Mercury								
Nickel								
Potassium								
Selenium	5.0	5.74	114.8					
Silver								
Sodium								
Thallium								
Vanadium								
Zinc								

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3
BLANKS

ORIGINAL (Red)

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 12281 SAS No.: SDG No.: MCBD00

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum	29.5	U	29.5	U	29.5	U	29.5	U	29.5	U	P
Antimony	26.6	U	26.6	U	26.6	U	26.6	U	26.6	U	P
Arsenic	-1.4	B	1.4	U	1.4	U	-1.5	B	1.4	U	F
Barium	1.6	U	2.6	B	1.6	U	1.6	U	1.6	U	P
Beryllium	1.5	U	1.5	U	1.5	U	1.5	U	1.5	U	P
Cadmium	3.4	U	3.4	U	3.4	U	3.4	U	3.4	U	P
Calcium	26.9	U	26.9	U	26.9	U	26.9	U	42.6	B	P
Chromium	3.9	U	3.9	U	3.9	U	3.9	U	3.9	U	P
Cobalt	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	P
Copper	3.1	U	3.1	U	3.1	U	3.1	U	3.1	B	P
Iron	6.8	U	10.1	B	6.8	U	18.3	B	13.3	B	P
Lead	0.9	U	0.9	U	0.9	U	0.9	U	0.9	U	F
Magnesium	34.4	U	34.4	U	34.4	U	51.1	B	34.4	U	P
Manganese	1.7	U	1.7	U	1.7	U	1.7	U	1.7	U	P
Mercury	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	CV
Nickel	8.1	U	8.1	U	8.1	U	8.1	U	8.1	U	P
Potassium	132.0	U	132.0	U	-135.3	B	132.0	U	132.0	U	P
Selenium	1.8	U	1.8	U	1.8	U	1.8	U	1.8	U	F
Silver	8.4	U	8.4	U	8.4	U	8.4	U	8.4	U	P
Sodium	48.7	U	48.7	U	48.7	U	48.7	U	48.7	U	P
Thallium	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	F
Vanadium	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	P
Zinc	4.5	U	4.5	U	-5.1	B	4.5	U	4.5	U	P
Cyanide	20.0	U	20.0	U	20.0	U	20.0	U	10.0	U	AS

0020

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3
BLANKS

ORIGINAL (Red)

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 12281 SAS No.: SDG No.: MCBD00

Preparation Blank Matrix (soil/water):

Preparation Blank Concentration Units (ug/L or mg/kg):

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum			29.5	U							P
Antimony			26.6	U							P
Arsenic			-1.7	B							F
Barium			1.6	U							P
Beryllium			1.5	U							P
Cadmium			3.4	U							P
Calcium			26.9	U							P
Chromium			3.9	U							P
Cobalt			5.0	U							P
Copper			3.1	U							P
Iron			17.3	B							P
Lead			0.9	U	0.9	U					F
Magnesium			54.7	B							P
Manganese			1.7	U							P
Mercury	0.2	U	0.2	U	0.2	U					CV
Nickel			8.1	U							P
Potassium			132.0	U							P
Selenium			1.8	U							F
Silver			8.4	U							P
Sodium			48.7	U							P
Thallium			2.1	U							F
Vanadium			5.0	U							P
Zinc			4.5	U							P
Cyanide											NR

0021

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3
BLANKS

ORIGINAL (Red)

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 12281 SAS No.: SDG No.: MCBD00

Preparation Blank Matrix (soil/water):

Preparation Blank Concentration Units (ug/L or mg/kg):

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum	29.5	U	29.5	U	29.5	U	29.5	U			P
Antimony											NR
Arsenic	1.4	U	1.4	U							F
Barium											NR
Beryllium											NR
Cadmium											NR
Calcium											NR
Chromium											NR
Cobalt											NR
Copper											NR
Iron											NR
Lead											NR
Magnesium											NR
Manganese											NR
Mercury											NR
Nickel											NR
Potassium											NR
Selenium	1.8	U	1.8	U							F
Silver											NR
Sodium											NR
Thallium											NR
Vanadium											NR
Zinc											NR
Cyanide											NR

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3
BLANKS

ORIGINAL (Red)

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 12281 SAS No.: SDG No.: MCBD00

Preparation Blank Matrix (soil/water):

Preparation Blank Concentration Units (ug/L or mg/kg):

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum			29.5	U							P
Antimony											NR
Arsenic											NR
Barium											NR
Beryllium											NR
Cadmium											NR
Calcium											NR
Chromium											NR
Cobalt											NR
Copper											NR
Iron											NR
Lead											NR
Magnesium											NR
Manganese											NR
Mercury											NR
Nickel											NR
Potassium											NR
Selenium											NR
Silver											NR
Sodium											NR
Thallium											NR
Vanadium											NR
Zinc											NR
Cyanide											NR

0023

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4

ICP INTERFERENCE CHECK SAMPLE

ORIGINAL (Red)

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 12281 SAS No.: SDG No.: MCBD00

ICP ID Number: P2 ICS Source: QAL-0387

Concentration Units: ug/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	Initial Found %R	Final Found Sol. A	Final Found Sol. AB	Final Found %R
Aluminum	511000	508000	525750	510640.0	100.5	531670	525380.0	103.4
Antimony			-36	-0.6		14	9.2	
Arsenic								
Barium		483	0	485.3	100.5	2	486.0	100.6
Beryllium		474	0	452.0	95.4	1	455.4	96.1
Cadmium		909	6	878.2	96.6	11	886.2	97.5
Calcium	476000	470000	502090	497990.0	106.0	515270	505850.0	107.6
Chromium		513	47	491.6	95.8	51	499.6	97.4
Cobalt		478	-4	439.8	92.0	0	451.7	94.5
Copper		534	14	528.6	99.0	18	526.6	98.6
Iron	219000	211000	216070	214520.0	101.7	218420	215590.0	102.2
Lead								
Magnesium	513000	513000	549190	544490.0	106.1	551450	544950.0	106.2
Manganese		470	15	470.0	100.0	16	471.4	100.3
Mercury								
Nickel		916	9	842.7	92.0	13	856.6	93.5
Potassium			-66	-17.3		66	-34.5	
Selenium								
Silver		934	-11	842.6	90.2	-6	851.6	91.2
Sodium			149	152.9		202	160.1	
Thallium								
Vanadium		475	8	478.6	100.8	9	476.9	100.4
Zinc		973	-4	907.3	93.2	-1	914.2	94.0

0024

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4

ICP INTERFERENCE CHECK SAMPLE

ORIGINAL (Red)

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 12281 SAS No.: SDG No.: MCBD00

ICP ID Number: P2 ICS Source: QAL-0387

Concentration Units: ug/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	%R	Final Found Sol. A	Final Found Sol. AB	%R
Aluminum	511000	508000	495260	489910.0	96.4	497010	492140.0	96.9
Antimony								
Arsenic								
Barium								
Beryllium								
Cadmium								
Calcium								
Chromium								
Cobalt								
Copper								
Iron								
Lead								
Magnesium								
Manganese								
Mercury								
Nickel								
Potassium								
Selenium								
Silver								
Sodium								
Thallium								
Vanadium								
Zinc								

0025

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5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO. ORIGINAL (Red)

MCW073S

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 12281 SAS No.: SDG No.: MCB000

Matrix (soil/water): WATER Level (low/med): LOW

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum		90470.0000		91966.0000		SR>SA 2000.0	-74.8		P CR
Antimony	75-125	396.5300		26.6000	U	500.0	79.3	✓	P
Arsenic	75-125	1.4000	U (dur=146)	27.9250	B	40.0	-69.8	N	F ?
Barium	75-125	2285.0000		276.7400		2000.0	100.4		P
Beryllium	75-125	55.8700		5.2200		50.0	101.3		P
Cadmium	75-125	52.0400		6.0400		50.0	92.0		P
Calcium									NR
Chromium	75-125	371.2900		190.8300		200.0	90.2		P
Cobalt	75-125	847.7100		392.3000		500.0	91.1		P
Copper	75-125	403.8700		156.2600		250.0	99.0		P
Iron		135630.0000		139010.0000		SR>SA 1000.0	-338.0		P CR
Lead		183.6500		165.4000		20.0	91.2		F
Magnesium									NR
Manganese		2794.2000		2377.9000		500.0	83.3		P
Mercury	75-125	58.0000		10.0000	U	50.0	116.0		CV
Nickel	75-125	652.7300		174.5000		500.0	95.6		P
Potassium									NR
Selenium	75-125	1.8000	U	9.0000	U	10.0	0.0	N	F
Silver	75-125	86.8600		8.4000	U	50.0	173.7	N	P mo hits
Sodium									NR
Thallium	75-125	48.5050		2.1000	U	50.0	97.0		F
Vanadium	75-125	927.5000		455.3300		500.0	94.4		P
Zinc	75-125	1993.5000		1548.7000		500.0	89.0		P
Cyanide	75-125	493.5000		17.5800		500.0	95.18	X	AS

Comments:

lab spiked CN w/ SSU ug/l (Eurice)

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5B
POST DIGEST SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

MCW073A

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 12281 SAS No.: SDG No.: MCBD00

Matrix (soil/water): WATER Level (low/med): LOW

Concentration Units: ug/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum									NR
Antimony									NR
Arsenic									NR
Barium									NR
Beryllium									NR
Cadmium									NR
Calcium									NR
Chromium									NR
Cobalt									NR
Copper									NR
Iron									NR
Lead									NR
Magnesium									NR
Manganese									NR
Mercury									NR
Nickel									NR
Potassium									NR
Selenium									NR
Silver									NR
Sodium									NR
Thallium									NR
Vanadium									NR
Zinc									NR
Cyanide		76.30		35.16		40.0	102.8		AS

Comments:

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ORIGINAL (Red)

6
DUPLICATES

EPA SAMPLE NO.

MCW073D

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 12281 SAS No.: SDG No.: MCBD00

Matrix (soil/water): WATER Level (low/med): LOW

% Solids for Sample: 0.0 % Solids for Duplicate: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum		91966.0000		94225.0000		2.4		P
Antimony	60.0	26.6000	U	26.6000	U			P
Arsenic	10.0	QBB 27.9250	B	QBB 14.5750	B	62.8	*	F
Barium	200.0	276.7400		275.6500		0.4		P
Beryllium	5.0	5.2200		5.4800		4.9		P
Cadmium	5.0	6.0400		near IDL 3.4000	U	200.0	*	P
Calcium		141720.0000		138360.0000		2.4		P
Chromium		190.8300		184.6700		3.3		P
Cobalt		392.3000		376.6500		4.1		P
Copper		156.2600		154.9600		0.8		P
Iron		139010.0000		137080.0000		1.4		P
Lead		165.4000		160.2500		3.2		F
Magnesium		87688.0000		86668.0000		1.2		P
Manganese		2377.9000		2334.1000		1.9		P
Mercury	0.2	10.0000	U	10.0000	U			CV
Nickel	40.0	174.5000		165.2400		5.5		P
Potassium	5000.0	21899.0000		21617.0000		1.3		P
Selenium	5.0	9.0000	U	9.0000	U			F
Silver	10.0	8.4000	U	8.4000	U			P
Sodium		127000.0000		126960.0000		0.0		P
Thallium	10.0	2.1000	U	2.1000	U			F
Vanadium		455.3300		442.1900		2.9		P
Zinc		1548.7000		1504.4000		2.9		P
Cyanide	5.0	17.5800		84.5000		131.1	*	AS

both As reported from SX
dilutions, which were within
range considered questioned by
the blanks

0028

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9

ICP SERIAL DILUTIONS

EPA SAMPLE NO. (ORIGINAL med)

MCW073L

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 12281 SAS No.: SDG No.: MCBD00

Matrix (soil/water): WATER Level (low/med): LOW

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Aluminum	91966.00		89765.00		2.4		P
Antimony	26.60	U					NR
Arsenic							F
Barium	276.74		277.10	B	0.1		P
Beryllium	5.22						NR
Cadmium	6.04						NR
Calcium	141720.00		135955.00		4.1		P
Chromium	190.83		183.40		3.9		P
Cobalt	392.30		361.60		7.8		P
Copper	156.26		161.00		3.0		P
Iron	139010.00		135900.00		2.2		P
Lead							F
Magnesium	87688.00		82595.00		5.8		P
Manganese	2377.90		2288.00		3.8		P
Mercury							CV
Nickel	174.50		diff < IDL 198.15	B	13.6		P
Potassium	21899.00		20650.00	B	5.7		P
Selenium							F
Silver	8.40	U					NR
Sodium	127000.00		118915.00		6.4		P
Thallium							F
Vanadium	455.33		454.35		0.2		P
Zinc	1548.70		1576.30		1.8		P

0031

Metal As/Se
IDL 1.4/1.8 ug/l
dl = < IDL

Graphite Furnace Spike Recovery Evaluation Form

ORIGINAL (Red)

Sample ID	Instr. Level Result ug/l	PDS Recovery %	Diluted Result ug/l	Diluted PDS Recovery %	MSA Result (if needed) ug/l	Final Result Reported ug/l
MCBD00	18.3	89				18.3 ✓
02	10.7	103				10.7 ✓
03	ND	99				U
12	ND	104				U
13	ND	105				
14	ND	104				
15	ND	101				
16	ND	102				
24	ND	88				
MCP962	ND	0	5x ND	50 →	10x: ND/PDS = 99.6	10x U (should be 10x 1.4 ug/l = 14 U)
MCW073	3.0	0	5x 5.6	0		27.9 (B) ✓
073D	ND	0	5x 2.9	4		14.5 (B)
073S	0	0				—
074	2.9	93				2.9 (B) ✓
MCBD00	ND	23 →	5x ND	33		U dL↗↗
02	ND	48				dL↗
03	ND	23 →	5x ND	68		
12	ND	90				
13	ND	94				
14	ND	99				
15	ND	108				
16	ND	100				
24	ND	94				
MCW073	ND	0	5x ND	0		
073D	ND (-12)	0	5x ND	0		
073S	0	0				
074	ND	78				
MCP962	ND	0	5x ND	0		
"			10x - ND	22		dL↗↗

Metal Pb/Tl
IDL .9/2.1 ug/l
Pb = < IDL

Graphite Furnace Spike Recovery Evaluation Form

ORIGINAL (Red)

	Sample ID	Instr. Level Result ug/l	PDS Recovery %	Diluted Result ug/l	Diluted PDS Recovery %	MSA Result (if needed) ug/l	Final Result Reported ug/l	ICP
Pb	MCBD00	47.3	96				47 ✓	97
	02	16.7	100				16.7 ✓	-
	03	13.5	103				13.5 ✓	-
	12	3.6	91				3.6 ✓	-
	13	3.0	91				3.0 ✓	-
	14	16.0	99				16.0 ✓	-
	15	4.9	95				4.9 ✓	-
	16	3.5	99				3.5 ✓	-
	24	ND	106				U ✓	-
	MCP962	hi	hi	(20X) 30.36	91		607 ✓	730
	MCW073	hi	hi	(10X) 16.54	99		165 ✓	219
	073D	hi	hi	(10X) 16.02	101		160 ✓	161
	073S	hi	hi	(10X) 18.36	96		91 %	88%
	074	4.8	92				4.8 ✓	
Tl	MCBD00	ND	97				U	
	02	ND	91					
	03	ND	96					
	12	ND	70					
	13	ND	74					
	14	ND	72					
	15	ND	73					
	16	ND	84					
	24	ND	97					
	MCW073	ND	95					
	073D	ND	90					
	073S	48.5	100				97%	
	074	ND	60				✓	
	MCP962	2.1	103				2.1 ✓	

ORIGINAL (Red)

SEQ NO: 334

Skinner & Sherman Labs
COLD VAPOUR ATOMIC ABSORPTION
MERCURY BENCH SHEET

Pg 2 of 3

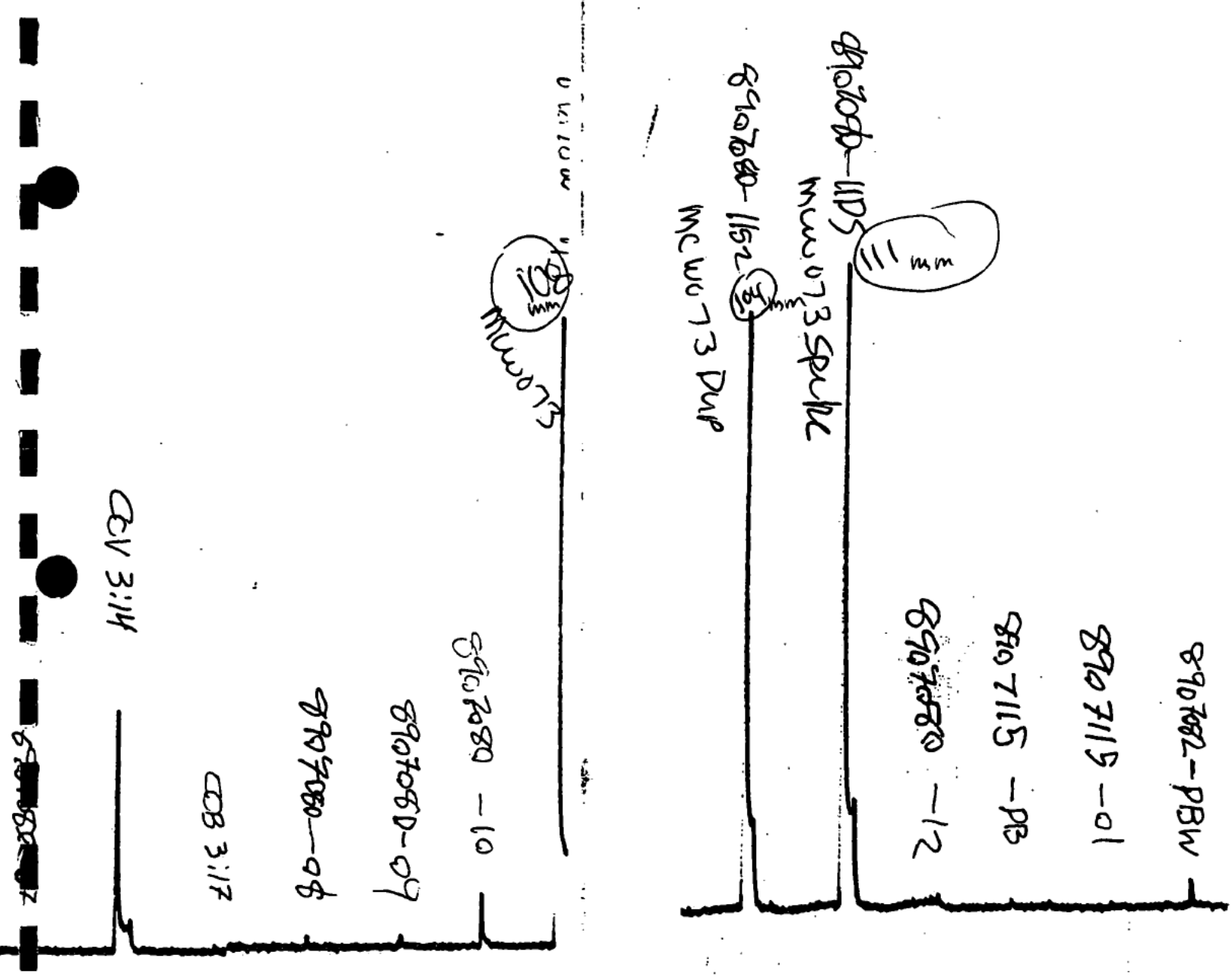
	SAMPLE ID	CLIENT ID	PK HT(mm)	CONC(ppb)	COMMENT
	~~8907055-PBS~~		~~2~~	~~0.077~~	
	-LCSS		54	2.14	
	CCV		40	2.13	106.5%
	LCB		0	-0.193	
	8907055-01	MEEH 70	3	-0.019	
	-01S2	70D	2	-0.077	
	-01DS	70S	23	1.14	
	-02	71	2	-0.077	
	-03	72	3	-0.019	
	-04	73	2	-0.077	
	-05	74	3	-0.019	
	-06	75	3	-0.019	
	-07	76	5	0.097	
	-08	77	19	0.910	
8	CCV3		42	2.25	112.3%
9	CCB2		0	-0.193	
	8907055-09	MEEH 78	3	-0.019	
	-10	79	4	0.039	
10	8907080-PBW		1	-0.135	
11	-01	MCBD00	4	0.039	
12	-02	02	3	-0.019	
13	-03	03	1	-0.135	
14	-04	12	1	-0.135	
15	-05	13	2	-0.077	
16	-06	14	3	-0.019	
17	-07	15	2	-0.077	
18	CCV2		41	2.19	109.4%
19	CCB2		0	-0.193	
20	8907080-08	MCBD 16	1	-0.135	
21	-09	24	1	-0.135	
22	-10	MCP 962	9	0.329	add to Datasun
23	-11	MCW 073	Beyond calibration		6.1 ug/l → Report (J)
24	-11S2	073D	Beyond calibration		5.9 ug/l
25	-11DS	073S	Beyond calibration		6.3 ug/l
26	-12	074	0	-0.193	
	8907115-PB		0	-0.193	
	-01		0	-0.193	
	8907082-PBW		4	0.039	
27	CCV3		42	2.25	112.3%
28	CCB3		0	-0.193	
	8907082-01	MCAW 46	3	-0.019	
	-01S2	46D	4	0.039	
	-01DS	46S	18	0.852	
	-02	48	3	-0.019	
	-03	50	3	-0.019	
	-04	52	2	-0.077	
	-05	54	4	0.039	
	-06	56	3	-0.019	
	-07	58	2	-0.077	

Read this case
MY 07/29/89

0145

8920601-06
7-25-89

ORIGINAL
(Red)



ORIGINAL (Red)

SDG MCBD04

filt. aq + solid samples

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ORIGINAL (Red)

28

CRDL STANDARD FOR AA AND ICP

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 12281 SAS No.: SDG No.: MCBD04

AA CRDL Standard Source: SS-DP

ICP CRDL Standard Source: SKINER

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
				Initial			Final	
	True	Found	%R	True	Found	%R	Found	%R
Aluminum								
Antimony				120.0	116.40	97.0	118.64	98.9
Arsenic	10.0	9.98	99.8					
Barium								
Beryllium				10.0	10.16	101.6	10.21	102.1
Cadmium				10.0	10.11	101.1	9.82	98.2
Calcium								
Chromium				20.0	20.38	101.9	22.39	112.0
Cobalt				100.0	103.95	104.0	102.09	102.1
Copper				50.0	54.41	108.8	55.17	110.3
Iron								
Lead	5.0	4.70	94.0					
Magnesium								
Manganese				30.0	30.02	100.1	30.81	102.7
Mercury								
Nickel				80.0	81.20	101.5	83.14	103.9
Potassium								
Selenium	5.0	6.04	120.8					
Silver ID=8.4				20.0	12.64	63.2	21.32	106.6
Sodium								
Thallium	10.0	9.26	92.6					
Vanadium				100.0	99.95	100.0	105.38	105.4
Zinc				40.0	40.86	102.2	37.67	94.2

0028

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ORIGINAL (Red)

2B
CRDL STANDARD FOR AA AND ICP

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 12281 SAS No.: SDG No.: MCB004

AA CRDL Standard Source: SS-DP

ICP CRDL Standard Source: SKINER

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
					Initial		Final	
	True	Found	%R	True	Found	%R	Found	%R
Aluminum								
Antimony								
Arsenic	10.0	10.07	100.7					
Barium								
Beryllium								
Cadmium								
Calcium								
Chromium								
Cobalt								
Copper								
Iron								
Lead	5.0	5.12	102.4					
Magnesium								
Manganese								
Mercury								
Nickel								
Potassium								
Selenium	5.0	6.68	133.6					
Silver								
Sodium								
Thallium	10.0	9.34	93.4					
Vanadium								
Zinc								

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2B
CRDL STANDARD FOR AA AND ICP

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 12281 SAS No.: SDG No.: MCBD04

AA CRDL Standard Source: SS-DP

ICP CRDL Standard Source: SKINER

Concentration Units: ug/L

	CRDL Standard for AA			CRDL Standard for ICP				
				Initial			Final	
Analyte	True	Found	%R	True	Found	%R	Found	%R
Aluminum								
Antimony								
Arsenic	10.0	10.22	102.2					
Barium								
Beryllium								
Cadmium								
Calcium								
Chromium								
Cobalt								
Copper								
Iron								
Lead								
Magnesium								
Manganese								
Mercury								
Nickel								
Potassium								
Selenium	5.0	5.98	119.6					
Silver								
Sodium								
Thallium								
Vanadium								
Zinc								

(Red)

U.S. EPA - CLP

2B
CRDL STANDARD FOR AA AND ICP

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 12281 SAS No.: SDG No.: MCBD04

AA CRDL Standard Source: SS-DP

ICP CRDL Standard Source: SKINER

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
				Initial			Final	
	True	Found	%R	True	Found	%R	Found	%R
Aluminum								
Antimony								
Arsenic	10.0	10.17	101.7					
Barium								
Beryllium								
Cadmium								
Calcium								
Chromium								
Cobalt								
Copper								
Iron								
Lead								
Magnesium								
Manganese								
Mercury								
Nickel								
Potassium								
Selenium								
Silver								
Sodium								
Thallium								
Vanadium								
Zinc								

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ORIGINAL (Red)

2B
CRDL STANDARD FOR AA AND ICP

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 12281 SAS No.: SDG No.: MCBD04

AA CRDL Standard Source: SS-DP

ICP CRDL Standard Source: SKINER

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
				Initial			Final	
	True	Found	%R	True	Found	%R	Found	%R
Aluminum								
Antimony								
Arsenic	10.0	10.31	103.1					
Barium								
Beryllium								
Cadmium								
Calcium								
Chromium								
Cobalt								
Copper								
Iron								
Lead								
Magnesium								
Manganese								
Mercury								
Nickel								
Potassium								
Selenium								
Silver								
Sodium								
Thallium								
Vanadium								
Zinc								

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3
BLANKS

ORIGINAL
(Red)

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 12281 SAS No.: SDG No.: MCBD04

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum	29.5	U	29.5	U	29.5	U	29.5	U	5.900	U	P
Antimony	26.6	U	26.6	U	26.6	U	26.6	U	5.320	U	P
Arsenic	1.6	U	1.6	U	1.6	U			0.320	U	F
Barium	1.6	U	1.8	B	1.6	U	1.6	U	0.320	U	P
Beryllium	1.5	U	1.5	U	1.5	U	1.5	U	0.300	U	P
Cadmium	3.4	U	3.4	U	3.4	U	3.4	U	0.680	U	P
Calcium	26.9	U	26.9	U	26.9	U	26.9	U	13.558	B	P
Chromium	3.9	U	5.2	B	3.9	U	3.9	U	0.780	U	P
Cobalt	5.0	U	5.0	U	5.0	U	5.0	U	1.000	U	P
Copper	3.1	U	5.6	B	3.1	U	3.1	U	0.620	U	P
Iron	6.8	U	6.8	U	6.8	U	6.8	U	5.196	B	P
Lead	1.0	U	1.0	U	1.0	U	1.0	U	0.200	U	F
Magnesium	34.4	U	34.4	U	34.4	U	34.4	U	6.880	U	P
Manganese	1.7	U	1.7	U	1.7	U	1.7	U	0.340	U	P
Mercury	0.2	U	0.2	U	0.2	U	0.2	U	0.100	U	CV
Nickel	8.1	U	8.1	U	8.1	U	8.1	U	1.620	U	P
Potassium	132.0	U	132.0	U	132.0	U	132.0	U	26.400	U	P
Selenium	2.1	U	2.1	U	2.1	U			0.420	U	F
Silver	8.4	U	8.4	U	8.4	U	8.4	U	1.680	U	P
Sodium	48.7	U	48.7	U	48.7	U	48.7	U	9.740	U	P
Thallium	1.3	U	1.3	U	1.3	U	1.3	U	0.260	U	F
Vanadium	5.0	U	5.0	U	5.0	U	5.0	U	1.000	U	P
Zinc	4.5	U	6.8	B	4.5	U	4.5	U	3.748	B	P
Cyanide	20.0	U	20.0	U	20.0	U	20.0	U	1.000	U	AS

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3
BLANKS

ORIGIN
(Red

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 12281 SAS No.: SDG No.: MCBD04

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum	29.5	U	29.5	U	33.6	B	29.5	U			P
Antimony	26.6	U	26.6	U	26.6	U	26.6	U			P
Arsenic	1.6	U	2.0	B	1.6	U					F
Barium	1.6	U	2.3	B	2.3	B	1.6	U			P
Beryllium	1.5	U	1.5	U	1.5	U	1.5	U			P
Cadmium	3.4	U	3.4	U	3.4	U	3.4	U			P
Calcium	26.9	U	26.9	U	26.9	U	26.9	U			P
Chromium	3.9	U	3.9	U	3.9	U	6.0	B			P
Cobalt	5.0	U	5.0	U	5.0	U	5.0	U			P
Copper	3.1	U	3.1	U	3.1	U	3.1	U			P
Iron	6.8	U	7.1	B	12.0	B	37.6	B			P
Lead			1.0	U							F
Magnesium	34.4	U	34.4	U	34.4	U	34.4	U			P
Manganese	1.7	U	1.7	U	1.7	U	5.0	B			P
Mercury	0.2	U	0.2	U	0.2	U					CV
Nickel	8.1	U	8.1	U	8.1	U	11.5	B			P
Potassium	132.0	U	132.0	U	132.0	U	132.0	U			P
Selenium	2.1	U	2.1	U	2.1	U					F
Silver	8.4	U	8.4	U	8.4	U	8.4	U			P
Sodium	48.7	U	48.7	U	48.7	U	54.5	B			P
Thallium			1.3	U							F
Vanadium	5.0	U	5.0	U	5.0	U	5.0	U			P
Zinc	4.5	U	4.5	U	4.5	U	4.5	U			P
Cyanide											NR

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3
BLANKS

ORIGINAL (Red)

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 12281 SAS No.: SDG No.: MCBD04

Preparation Blank Matrix (soil/water):

Preparation Blank Concentration Units (ug/L or mg/kg):

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum			29.5	U							P
Antimony			26.6	U							P
Arsenic	1.6	U	1.6	U	1.6	U	1.6	U			F
Barium			2.7	B							P
Beryllium			1.5	U							P
Cadmium			3.4	U							P
Calcium			26.9	U							P
Chromium			3.9	U							P
Cobalt			5.0	U							P
Copper			3.1	U							P
Iron			8.0	B							P
Lead	1.0	U	1.0	U	1.0	U	1.0	U			F
Magnesium			34.4	U							P
Manganese			1.7	U							P
Mercury											NR
Nickel			8.1	U							P
Potassium			132.0	U							P
Selenium	2.1	U	2.1	U	2.1	U	2.1	U			F
Silver			8.4	U							P
Sodium			48.7	U							P
Thallium	1.3	U	1.3	U	1.3	U	1.3	U			F
Vanadium			5.0	U							P
Zinc			-5.2	B							P
Cyanide											NR

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3
BLANKS

ORIGINAL (Red)

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 12281 SAS No.: SDG No.: MCBD04

Preparation Blank Matrix (soil/water):

Preparation Blank Concentration Units (ug/L or mg/kg):

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											NR
Antimony											NR
Arsenic			1.6	U	1.6	U	1.6	U			F
Barium											NR
Beryllium											NR
Cadmium											NR
Calcium											NR
Chromium											NR
Cobalt											NR
Copper											NR
Iron											NR
Lead			1.0	U	1.0	U	1.0	U			F
Magnesium											NR
Manganese											NR
Mercury											NR
Nickel											NR
Potassium											NR
Selenium			2.1	U	2.1	U					F
Silver											NR
Sodium											NR
Thallium			1.3	U	1.3	U					F
Vanadium											NR
Zinc											NR
Cyanide											NR

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ORIGINAL (Red)

3
BLANKS

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 12281 SAS No.: SDG No.: MCBD04

Preparation Blank Matrix (soil/water):

Preparation Blank Concentration Units (ug/L or mg/kg):

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											NR
Antimony											NR
Arsenic	1.6	U	1.6	U	1.6	U					F
Barium											NR
Beryllium											NR
Cadmium											NR
Calcium											NR
Chromium											NR
Cobalt											NR
Copper											NR
Iron											NR
Lead											NR
Magnesium											NR
Manganese											NR
Mercury											NR
Nickel											NR
Potassium											NR
Selenium											NR
Silver											NR
Sodium											NR
Thallium											NR
Vanadium											NR
Zinc											NR
Cyanide											NR

ORIGINAL (Red)

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3
BLANKS

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 12281 SAS No.: SDG No.: MCBD04

Preparation Blank Matrix (soil/water):

Preparation Blank Concentration Units (ug/L or mg/kg):

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											NR
Antimony											NR
Arsenic	1.6	U	1.6	U							F
Barium											NR
Beryllium											NR
Cadmium											NR
Calcium											NR
Chromium											NR
Cobalt											NR
Copper											NR
Iron											NR
Lead											NR
Magnesium											NR
Manganese											NR
Mercury											NR
Nickel											NR
Potassium											NR
Selenium											NR
Silver											NR
Sodium											NR
Thallium											NR
Vanadium											NR
Zinc											NR
Cyanide											NR

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ORIGINAL (Red)

4

ICP INTERFERENCE CHECK SAMPLE

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 12281 SAS No.: SDG No.: MCBD04

ICP ID Number: P2 ICS Source: QAL-0387

Concentration Units: ug/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	%R	Final Found Sol. A	Final Found Sol. AB	%R
Aluminum	511000	508000	576370	582160.0	114.6			
Antimony			22	-39.6				
Arsenic								
Barium		483	-2	476.4	98.6			
Beryllium		474	1	446.3	94.2			
Cadmium		909	6	848.0	93.3			
Calcium	476000	470000	488690	485920.0	103.4			
Chromium		513	41	488.2	95.2			
Cobalt		478	-2	429.0	89.7			
Copper		534	11	522.7	97.9			
Iron	219000	211000	211450	211190.0	100.1			
Lead								
Magnesium	513000	513000	534830	534370.0	104.2			
Manganese		470	11	458.9	97.6			
Mercury								
Nickel		916	-1	827.1	90.3			
Potassium			3	-101.2				
Selenium								
Silver		934	-29	905.4	96.9			
Sodium			132	83.1				
Thallium								
Vanadium		475	1	466.0	98.1			
Zinc		973	1	901.1	92.6			

0039

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4

ICP INTERFERENCE CHECK SAMPLE

ORIGINAL (Red)

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 12281 SAS No.: SDG No.: MCBD04

ICP ID Number: P2 ICS Source: QAL-0387

Concentration Units: ug/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	%R	Final Found Sol. A	Final Found Sol. AB	%R
Aluminum						504530	503050.0	99.0
Antimony						19	28.6	
Arsenic								
Barium						0	489.6	101.4
Beryllium						0	454.7	95.9
Cadmium						8	947.0	104.2
Calcium						521670	516320.0	109.9
Chromium						50	500.3	97.5
Cobalt						-3	444.4	93.0
Copper						13	528.0	98.9
Iron						219790	218140.0	103.4
Lead								
Magnesium						558860	552440.0	107.7
Manganese						15	462.5	98.4
Mercury								
Nickel						11	847.6	92.5
Potassium						28	63.4	
Selenium								
Silver						0	864.2	92.5
Sodium						184	180.9	
Thallium								
Vanadium						0	476.1	100.2
Zinc						1	942.4	96.9

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5A
SPIKE SAMPLE RECOVERY

ORIGINAL

EPA SAMPLE (No.)

MCBD04S

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 12281 SAS No.: SDG No.: MCBD04

Matrix (soil/water): WATER Level (low/med): LOW

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum	75-125	2278.7000		32.0700	B	2000.0	112.3		P
Antimony	75-125	530.2200		26.6000	U	500.0	106.0		P
Arsenic	75-125	QBB 7.9800	B	dup: ∅ 14.0600	B	40.0	-15.2	N	F
Barium	75-125	2249.4000		98.5700	B	2000.0	107.5		P
Beryllium	75-125	54.7900		1.5000	U	50.0	109.6		P
Cadmium	75-125	48.4800		3.4000	U	50.0	97.0		P
Calcium									NR
Chromium	75-125	218.1100		9.1300	B	200.0	104.5		P
Cobalt	75-125	593.6600		72.1500		500.0	104.3		P
Copper	75-125	276.6200		6.9800	B	250.0	107.9		P
Iron	75-125	1192.7000		98.7400	B	1000.0	109.4		P
Lead	75-125	31.0550		8.7750		20.0	111.4		F
Magnesium									NR
Manganese	75-125	838.6400		309.8200		500.0	105.8		P
Mercury									NR
Nickel	75-125	581.5400		61.7500		500.0	104.0		P
Potassium									NR
Selenium	75-125	2.1000	U	10.5000	U	10.0	0.0	N	F
Silver	75-125	26.9200		8.4000	U	50.0	53.8	N	P
Sodium									NR
Thallium	75-125	26.8000		1.3000	U	50.0	53.6	N	F
Vanadium	75-125	539.1500		7.1300	B	500.0	106.4		P
Zinc	75-125	602.4900		79.1500		500.0	104.7		P
Cyanide									NR

Comments:
DISSOLVED METALS

U.S. EPA - CLP

ORIGINAL (Red)

5A

SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

MCBD05S

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 12281 SAS No.: SDG No.: MCBD04

Matrix (soil/water): WATER Level (low/med): LOW

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum									NR
Antimony									NR
Arsenic									NR
Barium									NR
Beryllium									NR
Cadmium									NR
Calcium									NR
Chromium									NR
Cobalt									NR
Copper									NR
Iron									NR
Lead									NR
Magnesium									NR
Manganese									NR
Mercury	75-125	1.2600		0.2000	U	1.0	126.0	N	CV
Nickel									NR
Potassium									NR
Selenium									NR
Silver									NR
Sodium									NR
Thallium									NR
Vanadium									NR
Zinc									NR
Cyanide									NR

Comments:
DISSOLVED METALS

U.S. EPA - CLP

ORIGINAL (Red)

5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

MCBD17S

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 12281 SAS No.: SDG No.: MCBD04

Matrix (soil/water): SOIL Level (low/med): LOW

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum									NR
Antimony	75-125	90.3106		11.4996	U	219.6	41.1	N	P
Arsenic	75-125	30.9506	dup=17.25	18.3195		17.5	d=78% 72.2	N	F OK
Barium	75-125	1103.7812		217.4761		878.4	100.9		P
Beryllium	75-125	23.7394		2.3561		22.0	97.2		P
Cadmium	75-125	28.4082		5.1532		22.0	105.7		P
Calcium									NR
Chromium	75-125	300.2227		211.7392		87.8	100.8		P
Cobalt	75-125	232.9839		20.9284	B	219.6	96.6		P
Copper	75-125	246.0811		151.8334		109.8	85.8		P
Iron									NR
Lead		115.9446	dup=110.24	121.8352		SR>>SA 8.7	dup=+68% 67.7		F OK
Magnesium									NR
Manganese	75-125	502.1939		276.6643		219.6	102.7		P
Mercury	75-125	3.4022		2.1631		1.0	123.9		CV
Nickel	75-125	253.7102		36.1545		219.6	99.1		P
Potassium									NR
Selenium	75-125	2.7861		0.9052	U	4.4	63.3	N	P
Silver	75-125	17.8803		3.6314	U	22.0	81.3		P
Sodium									NR
Thallium	75-125	2.1393	B	0.5604	U	21.9	9.8	N	F
Vanadium	75-125	287.2308		70.3766		219.6	98.7		P
Zinc	75-125	618.9801	d=43)	457.1299		219.6	d=83 73.7	N	P OK
Cyanide	75-125	8.8084		2.1791	U	10.9	80.8		AS
Pb	"	223		110.9		109.8	105		P

Comments:

FORM V (PART 1) - IN 7/87

0043

ORIGINAL (Red)

U.S. EPA - CLP

5B

POST DIGEST SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

MCBD05A

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 12281 SAS No.: SDG No.: MCBD04

Matrix (soil/water): WATER Level (low/med): LOW

Concentration Units: ug/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum									NR
Antimony									NR
Arsenic									NR
Barium									NR
Beryllium									NR
Cadmium									NR
Calcium									NR
Chromium									NR
Cobalt									NR
Copper									NR
Iron									NR
Lead									NR
Magnesium									NR
Manganese									NR
Mercury									NR
Nickel									NR
Potassium									NR
Selenium									NR
Silver									NR
Sodium									NR
Thallium									NR
Vanadium									NR
Zinc									NR
Cyanide									NR

Comments:
DISSOLVED METALS

ORIGINAL (Red)

U.S. EPA - CLP

6
DUPLICATES

EPA SAMPLE NO.

MCBD04D

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 12281 SAS No.: SDG No.: MCBD04

Matrix (soil/water): WATER Level (low/med): LOW

% Solids for Sample: 0.0 % Solids for Duplicate: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M	
Aluminum	200.0	32.0700	B	29.5000	U	200.0		P	CR
Antimony	60.0	26.6000	U	26.6000	U			P	
Arsenic	10.0	14.0600	B	3.2000	U	200.0	*	F	✓ Blk cont?
Barium	200.0	98.5700	B	97.1700	B	1.4		P	
Beryllium	5.0	1.5000	U	1.5000	U			P	
Cadmium	5.0	3.4000	U	3.4000	U			P	
Calcium		58009.0000		57279.0000		1.3		P	
Chromium	10.0	9.1300	B	7.3800	B	21.2		P	
Cobalt	50.0	72.1500		72.1000		0.1		P	
Copper	25.0	QBB 6.9800	B	3.1000	U	200.0		P	CR
Iron	100.0	98.7400	B	97.1800	B	1.6		P	
Lead	5.0	8.7750		8.5800		2.2		F	
Magnesium		72376.0000		71706.0000		0.9		P	
Manganese		309.8200		305.9400		1.3		P	
Mercury	0.2	0.2000	U	0.2000	U			CV	
Nickel	40.0	61.7500		51.0500		19.0		P	
Potassium	5000.0	16119.0000		16069.0000		0.3		P	
Selenium	5.0	10.5000	U	10.5000	U			F	
Silver	10.0	8.4000	U	8.4000	U			P	
Sodium		128070.0000		127820.0000		0.2		P	
Thallium	10.0	1.3000	U	1.3000	U			F	
Vanadium	50.0	7.1300	B	5.0000	U	200.0		P	CR
Zinc	20.0	79.1500		80.4500		1.6		P	
Cyanide								NR	

U.S. EPA - CLP

ORIGINAL (Red)

6
DUPLICATES

EPA SAMPLE NO.

MCBD17D

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 12281 SAS No.: SDG No.: MCBD04

Matrix (soil/water): SOIL Level (low/med): LOW

% Solids for Sample: 45.4 % Solids for Duplicate: 47.8

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum		34387.1997		32707.4051		5.0		P
Antimony	25.9	11.4996	U	11.3878	U			P
Arsenic	4.3	18.3195		17.2573		6.0		F
Barium	86.5	217.4761		217.0148		0.2		P
Beryllium	2.2	2.3561		2.2262		5.7		P
Cadmium	2.2	5.1532		2.8769		56.7	*	P
Calcium	2161.6	3150.0632		3121.7572		0.9		P
Chromium		211.7392		208.9405		1.3		P
Cobalt	21.6	20.9284	B	18.3232	B	13.3		P
Copper		151.8334		140.3654		7.8		P
Iron		32214.3845		32224.0655		0.0		P
Lead		121.8352		110.2418		10.0		F
Magnesium	2161.6	6626.0920		6607.4960		0.3		P
Manganese		276.6643		278.3890		0.6		P
Mercury		2.1631		1.9987		7.9		CV
Nickel	17.3	36.1545		36.8434		1.9		P
Potassium	2161.6	3673.9426		3499.8238		4.9		P
Selenium	2.2	0.9052	U	0.9205	U			F
Silver	4.3	3.6314	U	3.5961	U			P
Sodium	2161.6	232.9659	B	217.3658	B	6.9		P
Thallium	4.3	0.5604	U	0.5698	U			F
Vanadium	21.6	70.3766		70.4760		0.1		P
Zinc		457.1299		437.1462		4.5		P
Cyanide	1.1	2.1791	U	2.1701	U			AS

SAS

BLANK ANALYSIS RESULTS FOR TENTATIVELY IDENTIFIED COMPOUNDS

ALL TENTATIVELY IDENTIFIED COMPOUNDS FOUND IN BLANK ANALYSES ARE LISTED BELOW:

SAMPLE #	FRACTION	SCAN #(S) OR R.T	ESTIMATED CONCENTRATION	COMPOUND NAME	COMMENTS ORIGINAL ID
VBlk1	VOA			None Detected	
EBlk1	BNA	7.1	4 mg/kg	benzaldehyde	
		23.0	5	Satd HC (>C15)	
		28.0	7	phthalate	
		28.1	4	"	
		28.2	7	unknown (72, 84, 85, 127, 132 ...)	
		28.3	8	phthalate	
		28.4	8	"	
		28.5	10	"	
		28.6	6	"	
		31.2	5	"	
		5.3	9% IS @ 8.0 min	NLS	prob cyclic HC
		6.6	3% IS @ 8.0 min		
		9.1	2% " "		
		11.5	3% IS @ "		
		15.6	2% IS @ 15.3 min		
		16.7	2% IS @ 15.3 min		
		24.6	5% IS @ 25.8 min	butylbenz phthalate ?	
		25.6	5% IS @ 25.8 min	NLS	
		26.3	10% IS @ 25.3 min		
		30.4	7% IS @ 29.3 min		
		32.6	2% " "		
		34.0	3% " "		
		27.2	8% IS @ 25.6 min	NLS	

NLS = no library search conducted

3HA

HIGH CONCENTRATION VOLATILE CONTROL MATRIX SPIKE RECOVERY

ORIGINAL (Red)

Lab Name: Western Research Institute Contract: _____

Lab Code: WRI Case No.: _____ SAS No.: 4368I#41 SDG No.: CCM18-11

COMPOUND	SPIKE ADDED (mg/Kg)	CMS CONCENTRATION (mg/Kg)	CMS % REC #	QC. LIMITS REC.
1,1-Dichloroethene	25	21	82	60-150
Trichloroethene	25	25	98	60-150
Benzene	25	33	132	60-150
Toluene	25	27	108	60-150
Chlorobenzene	25	28	111	60-150

Column to be used to flag recovery values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 5 outside limits

COMMENTS: _____

FORM III HCV

Rev. 9/8

2HA

HIGH CONCENTRATION VOLATILE SURROGATE RECOVERY

ORIGINAL (Red)

Lab Name: Western Research Institute Contract: _____

Lab Code: WRI Case No.: _____ SAS No.: 4368I #41 SDG No.: CCM18-11

	EPA SAMPLE NO.	S1 (TOL) #	S2 (BFB) #	S3 (DCE) #	OTHER	TOT OUT
01	VBLK1	94	92	95		0
02	CCM18-11	88	85	93		0
03	CMS	107	104	107		0
04						
05						
06						
07						
08						
09						
10						
11						
12						
13						
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25						
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27						
28						
29						
30						

		QC LIMITS
S1 (TOL)	= Toluene-d8	(50-160)
S2 (BFB)	= Bromofluorobenzene	(50-160)
S3 (DCE)	= 1,2-Dichloroethane-d4	(50-160)

Column to be used to flag recovery values

D Surrogates diluted out

Method blanks are required to meet the QC limits. For samples and control matrix spikes, the QC limits are advisory.

USEPA CONTRACT LABORATORY PROGRAM
SAMPLE MANAGEMENT OFFICE
P.O. BOX 818 ALEXANDRIA, VA 22313
703/557-2490 FTS-557-2490

CASE NO:

SAS NO: 4368 I (IF APPLICABLE) set 41

ORGANIC TRAFFIC REPORT

(FOR CLP USE ONLY)

TYPE OF ACTIVITY (CIRCLE ONE) ①
SUPERFUND—PA (SI) ESI RIFS RD RA ER
NPLD O&M OTHER
NON-SUPERFUND— PROGRAM

SAMPLE DESCRIPTION
(ENTER IN BOX A)
1. SURFACE WATER 4. SOIL
2. GROUND WATER 5. SEDIMENT
3. LEACHATE 6. OIL (SAS)
7. WASTE (SAS)

REGION NO: 3
SAMPLING COMPANY ② Nus FIT 3
SAMPLER: (NAME) Shawn Hoke

SHIP TO: ③
Western Research Institute
Ninth and Louis Streets
Laramie, WY 82070
ATTN: [redacted]

SAMPLING DATE: ④
BEGIN: 7-11-89 END: 7-11-89
DATE SHIPPED: 7-24-89 CARRIER: Fed Ex ⑤
AIRBILL NO: 2294122025

DATE REC'D: 7/25/89
SDG NO: (Red)
REC'D BY: [redacted]
LABORATORY CONTRACT NO. 68-W8-0076
UNIT PRICE 729.-
TRANSFER TO:
DATE REC'D:
REC'D BY:
CONTRACT NO./PRICE

• CLP SAMPLE NUMBER (FROM LABELS)	Ⓐ SAMPLE DESCRIPTION (FROM BOX 1) 1 2 3 4 5 6 7	Ⓑ CONCENTRATION L = LOW/MED, H = HIGH (SAS)	Ⓒ RAS ANALYSIS VOLATILE	BASE/NEUT /ACID	PESTICIDE /PCB's	Ⓓ SPECIAL HANDLING	Ⓔ STATION LOCATION	Ⓕ SAMPLE CONDITION ON RECEIPT	Ⓖ HIGH CC PHASE (CHEC. SOLID	WATER—MIS LIQUID	NON WATER—
CCM 18	2	H	X	X	X	Possibly crude oil 2 phase	MW71	intact			
								Please note:			
								extractables			
								appears to contain 2 phases, volatiles			
								appears to contain only one phase. MV.			
								VOA analysis done only on WML			

EPA Form 2075-7 (8-87)

WHITE — SMO COPY PINK — CLIENT COPY WHITE — LAB COPY FOR RETURN TO SMO YELLOW — LAB COP

Initial Calibration Data
HSL Compounds

ORIGINAL (Red)

Case No: SAS 4368I #41 Instrument ID: GCMS83 9601_3

Contractor: WRI Calibration Date: 08/03/89

Contract No: 68-01-7160 SDG No CCM18-11

Minimum $\overline{RF}$ for SPCC is 0.3 Maximum % RSD for CCC is 30%

Laboratory ID:	>0020I	>0050I	>0100I	>0150I	>0200I					
Compound	RF 20.00	RF 50.00	RF 100.00	RF 150.00	RF 200.00	$\overline{RRT}$	$\overline{RF}$	% RSD	CCC	SPCC
CHLOROMETHANE	.89383	.91979	.85142	.86928	.83340	.169	.87355	3.911		**
BROMOMETHANE	.69065	.59758	.59691	.62874	.64636	.215	.63205	6.164		
VINYL CHLORIDE	.92830	.88040	.81637	.87870	.92042	.180	.88484	5.022	*	
CHLOROETHANE	.34415	.32370	.34934	.32459	.33473	.229	.33530	3.418		
METHYLENE CHLORIDE	1.19641	1.10212	1.14454	1.03519	1.03164	.486	1.10198	6.439		
ACETONE	.52110	.45821	.36999	.44392	.39439	.398	.43752	13.461		
CARBON DISULFIDE	2.75314	2.20624	2.50797	2.67147	2.52506	.376	2.53278	8.261		
1,1-DICHLOROETHENE	.76578	.56205	.62320	.66838	.59502	.357	.64289	12.289	*	
1,1-DICHLOROETHANE	2.06809	2.09204	2.00890	1.98580	1.92405	.695	2.01578	3.320		**
1,2-DICHLOROETHENE	1.32876	1.30226	1.25684	1.25055	1.23025	.553	1.27373	3.178		
CHLOROFORM	2.07633	2.07782	1.99491	1.86491	1.82736	1.060	1.96827	5.954	*	
1,2-DICHLOROETHANE-D4	1.53784	1.53022	1.46748	1.40582	1.37938	1.196	1.46415	4.877		
1,2-DICHLOROETHANE	1.53988	1.56123	1.49610	1.41142	1.38545	1.220	1.47882	5.247		
2-BUTANONE	.04320	.03664	.02870	.03393	.03210	.711	.03491	15.634		
1,1,1-TRICHLOROETHANE	.37625	.30702	.26761	.29322	.29624	.786	.30807	13.232		
CARBON TETRACHLORIDE	.33712	.27940	.24816	.28074	.30574	.821	.29023	11.449		
VINYL ACETATE	.89002	.75584	.69018	.64928	.63162	.568	.72339	14.471		
BROMODICHLOROMETHANE	.45238	.39784	.37226	.35787	.35775	1.172	.38762	10.247		
1,2-DICHLOROPROPANE	.35585	.30468	.27299	.26820	.26131	1.087	.29261	13.352	*	
CIS-1,3-DICHLOROPROPENE	.65669	.56089	.51134	.48884	.48317	1.275	.54019	13.324		
TRICHLOROETHENE	.45493	.37593	.32110	.32687	.32562	1.038	.36089	15.830		
DIBROMOCHLOROMETHANE	.46042	.41027	.38866	.36788	.36126	1.535	.39770	10.051		
1,1,2-TRICHLOROETHANE	.30695	.25637	.23138	.21191	.20423	1.453	.24217	17.113		
BENZENE	.94416	.78908	.67725	.66537	.65680	.873	.74653	16.448		
TRANS-1,3-DICHLOROPROPENE	.30869	.27320	.25303	.24386	.24080	1.417	.26392	10.626		
BROMOFORM	.41283	.37991	.37607	.35180	.34671	1.878	.37346	7.062		**
2-HEXANONE	.35732	.35056	.34127	.34015	.33560	.924	.34498	2.546		
4-METHYL-2-PENTANONE	.47795	.48335	.49978	.45935	.45056	.802	.47420	4.126		
TETRACHLOROETHENE	.45011	.43243	.38772	.40296	.40969	.876	.41658	5.931		
1,1,2,2-TETRACHLOROETHANE	.52657	.51353	.54138	.49896	.47937	1.229	.51196	4.697		**

RF - Response factor (Subscript is amount in PPB)

$\overline{RRT}$ - Average Relative Retention Time (RT Std/RT Istd)

$\overline{RF}$ - Average Response Factor

%RSD - Percent Relative Standard Deviation

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

3HB

HIGH CONCENTRATION EXTRACTABLE CONTROL MATRIX SPIKE RECOVERY

ORIGINAL (Red)

Lab Name: Western Research Institute Contract: _____

Lab Code: WRI Case No.: _____ SAS No.: 43681 Ext 41 SDG No.: _____

COMPOUND	SPIKE ADDED (mg/Kg)	CMS CONCENTRATION (mg/Kg)	CMS % REC #	QC. LIMITS REC.
Phenol	200	84	42	10-120
2-Chlorophenol	200	72	36	10-120
1,4-Dichlorobenzene	100	47	47	30-140
N-Nitroso-di-n-prop.(1)	100	65	65	30-140
1,2,4-Trichlorobenzene	100	54	54	30-140
4-Chloro-3-methylphenol	200	77	38	10-120
Acenaphthene	100	54	54	30-140
4-Nitrophenol	200	84	42	10-120
2,4-Dinitrotoluene	100	43	43	30-140
Pentachlorophenol	200	50	25	10-120
Heptachlor	100	53	53	30-140
Pyrene	100	32	32	30-140
Dieldrin	100	41	41	30-140

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 13 outside limits

COMMENTS: _____

FORM III HCE

Rev. 9/88

2HB
HIGH CONCENTRATION EXTRACTABLE SURROGATE RECOVERY

ORIGINAL (Red)

Lab Name: Western Research Institute Contract: _____

Lab Code: WRI Case No.: _____ SAS No.: 4368 Set 41 SDG No.: _____

MEH 9-1-89

	EPA SAMPLE NO.	S1 (NBZ) #	S2 (FBP) #	S3 (TPH) #	S4 (PHL) #	S5 (2FP) #	S6 (TBP) #	OTHER	TOT OUT
01	EBLK1	48	52	40	50	39	35		0
02	CCM18-~~N~~12	60	79	61	69	60	42		0
03	CCM18-~~N~~11	50	52	45	53	40	35		0
04	CMS	53	56	47	52	47	43		0
05									
06									
07									
08									
09									
10									
11									
12									
13									
14									
15									
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22									
23									
24									
25									
26									
27									
28									
29									
30									

		QC LIMITS
S1 (NBZ)	= Nitrobenzene-d5	(20-140)
S2 (FBP)	= 2-Fluorobiphenyl	(20-140)
S3 (TPH)	= Terphenyl-d14	(20-150)
S4 (PHL)	= Phenol-d5	(20-140)
S5 (2FP)	= 2-Fluorophenol	(20-140)
S6 (TBP)	= 2,4,6-Tribromophenol	(10-140)

Column to be used to flag recovery values
D Surrogates diluted out

Method blanks are required to meet the QC limits. For samples and control matrix spikes, the QC limits are advisory

page __ of __

FORM II HCE

Rev. 9/88

3HC

HIGH CONCENTRATION AROCLOR CONTROL MATRIX SPIKE RECOVERY

ORIGINAL (Red)

Lab Name: Western Research Institute Contract: 68-W8-0076

Lab Code: WRI Case No.: _____ SAS No.: 4368T#41 SDG No.: CC418

COMPOUND	SPIKE ADDED (mg/Kg)	CMS CONCENTRATION (mg/Kg)	CMS % REC	QC. LIMITS REC.
Aroclor 1254	500	408	82	none

COMMENTS: _____

FORM III HCA

Rev. 9/88

2HC

HIGH CONCENTRATION AROCLOR SURROGATE RECOVERY

ORIGINAL (Red)

Lab Name: Western Research Institute Contract: 68-W8-0076

Lab Code: WRI Case No.: _____ SAS No.: 4368I #41 SDG No.: CCM18

GC Column ID (1): DB-1701 GC Column ID (2): DB-608

	EPA SAMPLE NO.	COL.1 S1 (TMX) #	COL. 2 S1 (TMX) #	COL.1 S2 (DEC) #	COL. 2 S2 (DEC) #
01	ABLK01	76	KAR 8-18-89 ~~68~~ 66	74	60
mEH 9-1-89 02	CCM18-~~11~~ 12	68	56	61	57
03	CCM18-~~12~~ 11	94	86	75	72
04	CMS	73	62	68	50
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					

	QC LIMITS
S1 (TMX) = Tetrachloro-meta-Xylene	(40-120)
S2 (DEC) = Decachlorobiphenyl	(40-120)

Column to be used to flag recovery values

D Surrogate diluted out

page 1 of 1

FORM II HCA

Rev. 9/

PROJECT NAME: Gulf Oil Darby Creek
TDD NO.: F3-8906-07

EPA SITE NO.: PA-799
REGION: 3

SUPPORT DOCUMENTATION FOR THE REVIEW OF INORGANIC ANALYTICAL DATA PACKAGE

ORIGINAL (Red)

CASE / SAS NO.: 4208I set 49
TYPE OF ANALYSIS: hi conc inorganics (dies. metals)
CONTRACT LABORATORY: JTC
APPLICABLE IFB OR SOW: 1/88
REVIEWER: [redacted]
REVIEW DATE: April 11, 1990

Not responsive due to revised scope

APPLICABLE SAMPLE NO's.: MCBD08

THE FOLLOWING TABLE INDICATES AREAS WHICH WERE EXAMINED IN DETAIL, THE IDENTIFIED PROBLEM AREAS, AND SUPPORT DOCUMENTATION ATTACHMENTS:

	AREAS EXAMINED IN DETAIL — CHECK (✓) IF YES OR FOOTNOTE LETTER FOR COMMENTS BELOW					PROBLEM AREAS IDENTIFIED — CHECK (✓) IF YES OR FOOTNOTE NUMBER FOR COMMENTS BELOW					SUPPORT DOCUMENTATION ATTACHMENTS — CHECK (✓) IF YES OR IDENTIFY ATTACHMENT NO.				
	ALL APPLICABLE ANALYSES	ICP OR A.A. METALS	FURNACE METALS	COLD VAPOR MERCURY	CYANIDE	ALL APPLICABLE ANALYSES	ICP OR A.A. METALS	FURNACE METALS	COLD VAPOR MERCURY	CYANIDE	ALL APPLICABLE ANALYSES	ICP OR A.A. METALS	FURNACE METALS	COLD VAPOR MERCURY	CYANIDE
HOLDING TIMES	✓														
BLANK ANALYSIS RESULTS	✓														
MATRIX SPIKES (PRE-DIGESTION)	✓														
DUPLICATES	✓														
QUANTITATION OF RESULTS	✓														
DETECTION LIMITS/SENSITIVITY	✓														
INITIAL CALIBRATIONS	✓														
CONTINUING CALIBRATIONS	✓														
LABORATORY CONTROL STANDARDS	✓														
ICP LINEAR RANGE ANALYSIS	✓														
ICP INTERFERENCE CHECKS	✓														
ICP SERIAL DILUTIONS	✓														
GFAA POST-DIGESTION SPIKES	NA														
GFAA DUPLICATE BURNS	NA														
GFAA STANDARD ADDITIONS	NA														
OTHERS	✓														

COMMENTS: Sample was not filtered as required by SAS request.

SAS 4208 Iset 49 JTC

BLANK ANALYSIS RESULTS

TASK	TYPE	CONC	MATRIX	SAMPLE #	SOURCE OF H_2O	CONTAMINANTS (CONCENTRATION / DETECTION LIMIT)
Metals	Initial calib blank				lab	ORIGINAL (Red)
	Cont Cal blks (1)					ND
	(2)					Sb .017 mg/l (14 mg/kg) Ag .035 mg/l (14 mg/kg) V .023 mg/l (18 mg/kg)
	(3)					Al .345 mg/l (138 mg/kg) Pb .232 mg/l (93 mg/kg) V .021 mg/l (8 mg/kg)
	(4)					Pb .214 mg/l (85 mg/kg)
	prep blank					Ca 1.617 mg/l (647 mg/kg)

LABORATORY REPORTED FIELD BLANK DATA IS COMPARED WITH THE SAMPLE DATA IN A TABULATION FORM WITHIN SAMPLE ANALYTICAL DATA SUMMARY.

COMMENTS:

(1) RESULT REPORTED BY LABORATORY AND CONFIRMED BY REVIEWER.

(2) RESULT INFERRED FROM RAW DATA

U.S. EPA - CLP
HIGH CONCENTRATION INORGANICS

BLANKS

ORIGINAL (Red)

Lab Name: JTC ENVIRONMENTAL CNSLTS. Contract: 4208-I

Lab Code: JTC Case No.: SET49 SDG No.: MCBD08

Preparation Blank Phase: LIQUID

Concentration Units: mg/L

Analyte	WAVE	Initial Calib. Blank	C	Continuing Calibration Blanks 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum		-.324	B	-.617	B	.153	U	.345	B	.153	U	P
Antimony		.013	U	.013	U	.017	B	.013	U	.013	U	H
Arsenic		.013	U	.013	U	.013	U	.013	U	.013	U	H
Barium		.032	U	.032	U	.032	U	.032	U	.032	U	P
Beryllium		.004	U	.004	U	.004	U	.004	U	.004	U	P
Cadmium		.004	U	.004	U	-.005	B	-.005	B	.004	U	P
Calcium		1.190	U	1.190	U	1.190	U	1.190	U	1.617	B	P
Chromium		.010	U	.010	U	.010	U	.010	U	.010	U	P
Cobalt		.017	U	.017	U	.017	U	-.064	B	.017	U	P
Copper		.022	U	.022	U	.022	U	.022	U	-.030	B	P
Iron		.087	U	.087	U	.087	U	.087	U	.087	U	P
Lead		.060	U	.060	U	.060	U	.232	B	.060	U	P
Magnesium		1.500	U	1.500	U	1.500	U	1.500	U	1.500	U	P
Manganese		.004	U	.004	U	.004	U	.004	U	.004	U	P
Mercury		.0003	U	.0003	U	.0003	U					NR CV
Nickel		-.019	B	.016	U	.016	U	.016	U	.016	U	P
Selenium		.013	U	.013	U	.013	U	.013	U	.013	U	H
Silver		.009	U	.009	U	.035	B	.009	U	.009	U	P
Sodium		.785	U	.785	U	.785	U	.785	U	.785	U	P
Thallium		.250	U	.250	U	.250	U	.250	U	.250	U	P
Vanadium		.016	U	-.024	B	.023	B	.021	B	.016	U	P
Zinc		.018	U	.018	U	.018	U	.018	U	.018	U	P
Cyanide												NR

✓ ✓

U.S. EPA - CLP
HIGH CONCENTRATION INORGANICS

BLANKS

ORIGINAL (Red)

Lab Name: JTC ENVIRONMENTAL CNSLTS. Contract: 4208-I

Lab Code: JTC Case No.: SET49 SDG No.: MCBD08

Preparation Blank Phase: LIQUID

Concentration Units: mg/L

Analyte	WAVE	Initial Calib. Blank	C	Continuing Calibration Blanks 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum												P
Antimony				.013	U	.013	U					H
Arsenic				.013	U	.013	U					H
Barium				.032	U	.032	U					P
Beryllium												P
Cadmium				.004	U							P
Calcium												P
Chromium												P
Cobalt				.017	U	.017	U					P
Copper												P
Iron				.087	U	.087	U					P
Lead				.217	B	-.115	B					P
Magnesium												P
Manganese				.004	U	.004	U					P
Mercury												NR
Nickel												P
Selenium				.013	U	.013	U					H
Silver												P
Sodium												P
Thallium				.250	U	.250	U					P
Vanadium												P
Zinc				.018	U	-.025	B					P
Cyanide												NR

U.S. EPA - CLP
HIGH CONCENTRATION INORGANICS

ICS

ORIGINAL (Red)

Lab Name: JTC ENVIRONMENTAL CNSLTS. Contract: 4208-I

Lab Code: JTC Case No.: SET49 SDG No.: MCBD08

ICP ID Number: 6000 ICS Source:

Concentration Units: mg/L

Analyte	WAVE	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	%R	Final Found Sol. A	Final Found Sol. AB	%R
Aluminum		482.000	484.000	494.403	489.862	101	505.060	484.560	100
Antimony				.505	.505		.505	.505	
Arsenic				.499	.499		.499	.499	
Barium			.466	-.001	.459	98	.007	.528	113
Beryllium			.472	-.001	.465	99	.003	.557	118
Cadmium			.900	-.032	.883	98	-.013	.942	105
Calcium		460.000	455.000	371.210	400.550	88	513.546	495.692	109
Chromium			.532	.054	.531	100	.048	.495	93
Cobalt			.469	-.016	.443	94	-.036	.448	96
Copper			.515	-.035	.550	107	.025	.600	117
Iron		173.000	172.000	174.755	176.468	103	203.378	206.852	120
Lead			4.710	.443	5.100	108	.581	5.078	108
Magnesium		444.000	450.000	470.379	512.220	114	529.751	482.695	107
Manganese			.461	-.033	.409	89	-.054	.411	89
Mercury									
Nickel			.892	-.019	.954	107	-.017	.977	110
Selenium				.508	.508		.508	.508	
Silver			1.010	-.005	1.112	110	-.007	1.017	101
Sodium				3.591	.024		-.008	.074	
Thallium				-.027	.689		-.086	1.245	
Vanadium			.487	-.020	.519	107	-.017	.558	115
Zinc			.976	.020	.938	96	-.003	1.059	109

U.S. EPA - CLP
HIGH CONCENTRATION INORGANICS

SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

MCBD08WS

ORIGINAL (Red)

Lab Name: JTC ENVIRONMENTAL CNSLTS. Contract: 4208-I

Lab Code: JTC Case No.: SET49 SDG No.: MCBD08

Phase: LIQUID Percent: 100.0

Concentration Units: mg/kg

Analyte	WAVE	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M	
Aluminum		75-125	1020.155		61.000	U	1280.000	80		P	
Antimony		75-125	1101.551		10.000	U	1280.000	86		H	
Arsenic		75-125	1152.713		10.000	U	1280.000	90		H	
Barium		75-125	1119.380		13.000	U	1280.000	87		P	
Beryllium		75-125	1146.899		1.500	U	1280.000	90		P	
Cadmium		75-125	498.837		1.800	U	1280.000	39	N	P	
Calcium		75-125	1507.365		QBB 788.845	B	1280.000	56	N	P	
Chromium		75-125	963.178		11.952	B	1280.000	74	N	P	ok
Cobalt		75-125	608.915		6.800	U	1280.000	48	N	P	
Copper		75-125	1385.271		8.800	U	1280.000	108		P	
Iron		75-125	1188.760		35.000	U	1280.000	93		P	
Lead		75-125	1302.713		25.100	B	1280.000	100		P	
Magnesium		75-125	1071.706		600.000	U	1280.000	84		P	
Manganese		75-125	1118.992		5.578	B	1280.000	87		P	
Mercury		75-125	4.110		0.300	U	4.000	103		NR	CV
Nickel		75-125	148.837		6.400	U	1280.000	12	N	P	
Selenium		75-125	898.450		10.000	U	1280.000	70	N	H	
Silver		75-125	3.500	U	3.500	U	1280.000	0	N	P	
Sodium		75-125	2028.682	B	1099.602	B	1280.000	73	N	P	ok
Thallium		75-125	1479.845		100.000	U	1280.000	116		P	
Vanadium		75-125	1765.117		6.400	U	1280.000	138	N	P	ok
Zinc		75-125	1798.062		7.200	U	1280.000	140	N	P	
Cyanide										NR	

Comments:

Slightly low recoveries for Cr, Na may be the result of sample inhomogeneity

FORM VII - HCIN 1/88

U.S. EPA - CLP
HIGH CONCENTRATION INORGANICS

POST DIGESTION SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

ORIGINAL (Red)

MCBD08WA

Lab Name: JTC ENVIRONMENTAL CNSLTS. Contract: 4208-I

Lab Code: JTC Case No.: SET49 SDG No.: MCBD08

Phase: LIQUID Percent: 100.0

Concentration Units: mg/L

Analyte	WAVE	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum			148.957		.153	U	150.000	99		P
Antimony										NR
Arsenic										NR
Barium			2.902		.033	U	3.000	97		P
Beryllium			.623		.004	U	.600	104		P
Cadmium			1.140		.005	U	1.200	95		P
Calcium			152.188		1.980	B	150.000	100		P
Chromium			2.716		.030	B	3.000	90		P
Cobalt			1.550		.017	U	1.500	103		P
Copper			3.116		.022	U	3.000	104		P
Iron			72.430		.088	U	60.000	121		P
Lead			2.964		.063	B	3.000	97		P
Magnesium			159.797		1.506	U	150.000	107		P
Manganese			1.114		.014	B	1.200	92		P
Mercury										NR
Nickel			1.454		.016	U	1.500	97		P
Selenium										NR
Silver			.248		.009	U	.300	83		P
Sodium			65.085		2.760	B	60.000	104		P
Thallium			1.759		.251	U	1.500	117		P
Vanadium			1.615		.016	U	1.500	108		P
Zinc			2.938		.018	U	3.000	98		P
Cyanide										NR

Comments:

U.S. EPA - CLP
HIGH CONCENTRATION INORGANICS

POST DIGESTION SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

ORIGINAL (Red)

MCBD08WA

Lab Name: JTC ENVIRONMENTAL CNSLTS. Contract: 4208-I

Lab Code: JTC Case No.: SET49 SDG No.: MCBD08

Phase: LIQUID Percent: 100.0

Concentration Units: mg/L

Analyte	WAVE	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M	
Aluminum										NR	
✓ Antimony			.0363		.0175	U	.050	73		NR	} Hydride
✓ Arsenic			.049		.0125	U	.050	98		NR	
Barium										NR	
Beryllium										NR	
Cadmium										NR	
Calcium										NR	
Chromium										NR	
Cobalt										NR	
Copper										NR	
Iron			64.682		.088	U	60.000	108		P	
Lead										NR	
Magnesium										NR	
Manganese										NR	
Mercury										NR	
Nickel										NR	
✓ Selenium			.0463		.0125	U	.050	94		NR	hydride
Silver			.225		.009	U	.300	75		P	
Sodium										NR	
Thallium			1.577		.251	U	1.500	105		P	
Vanadium										NR	
Zinc										NR	
Cyanide										NR	

Comments:

Several TICs were detected in on-site soil. Substituted benzenes tentatively identified in area no. 1 included tris(1-methylethyl)benzene (up to 33,400 ug/kg), 1,1,2-trimethylpropylbenzene (4,900 ug/kg), 1-methylpentylbenzene (88,800 ug/kg), 1-(1-methylethenyl)-3-(1-methylethyl)-benzene (10,500 ug/kg), 1,1'-[(1,1,2,2-tetramethyl)-1,2-ethanediyl]-bis-benzene (8,600 ug/kg), 1,1'-(1-methylethylidene)-bis-benzene (15,000 ug/kg), 1,1-dimethylpropylbenzene (8,600 ug/kg), 1-methylethylbenzene (also known as cumene) (up to 6,800 ug/kg), 1,3,5-tris-(1-methylethyl)benzene (4,400 ug/kg), 1,3-bis(1-methylethyl)benzene (17,100 ug/kg), 1,4-dichloro-2-isocyanatobenzene (3,200 ug/kg), 1,2,4,5-tetrakis-(1-methylethyl)benzene (4,100 ug/kg), 1,1-dimethylbutylbenzene (9,900 ug/kg), and 1-(ethylpropyl)-2-propylbenzene (2,300 ug/kg). A search of available literature and the Hazardous Substances Data Bank (HSDB), Chemline, and Toxlit databases yielded no information on 1,2,4,5-tetrakis-(1-methylethyl)benzene, 1,1-dimethylbutylbenzene, 1-(ethylpropyl)-2-propylbenzene, 1,1,2-trimethylpropylbenzene, 1-methylpentylbenzene, or tris(1-methylethyl)benzene. 1-(1-Methylethenyl)-3-(1-methylethyl)benzene has been associated with isoxazolidine pesticides used to control insect larvae on meat.[4] 1,1'-[(1,1,2,2-tetramethyl)-1,2-ethanediyl]-bis-benzene has been involved in a study of pharmacokinetics involving oxidation.[4] 1,1'-(1-methylethylidene)bis benzene has been associated with the thermal decoating of used beverage containers.[4] 1,1-Dimethylpropylbenzene is a mildly toxic compound with a reported oral rat lowest observed lethal dose (LDLo) of 5,000 mg/kg.[5] Cumene is an irritant and neurotoxicant with a reported oral rat LD50 (dose lethal to 50 percent of an experimental population) of 1,400 mg/kg.[5] 1,3,5-Tris-(1-methylethyl)benzene has been detected as a component of natural ginseng oil, pesticides, and lecithin gel.[4] 1,3-Bis-(1-methylethyl)benzene is a moderately toxic compound with an oral rat LD50 of 7,400 mg/kg.[5] 1,4-Dichloro-2-isocyanatobenzene has been used in studies of senstization reactions in guinea pigs.[4] 3-(2,66-Trimethyl-1-cyclohexen-1-yl)-2-propenal was tentatively identified up to 16,000 ug/kg in area no. 1 soil; a search of available literature and the HSDB, Chemline, and Toxlit databases yielded no information on this compound. A phenol of unknown structure was tentatively identified at 3,200 ug/kg in area no. 1 soil. Phenols are semivolatile organic compounds (SVOCs) with irritant properties; no specific assessment of unknown compounds can be made.[5] HNU readings above background were detected in this area during soil sampling. The HNU can detect organic vapors including benzene.

TICs detected in area no. 3 soil included a cyclohexane isomer (18 ug/kg) and 2-ethyl-1,1'-biphenyl (3,200 ug/kg). Cyclohexane is a moderately toxic irritant with a reported oral rat LD50 of 29,820 mg/kg.[5] 2-Ethyl-1,1'-biphenyl has been detected in incinerator ash and in wastewater, including wastewater containing dioxins and PCBs.[4]

TICs detected in pond surface water in area no. 2 included 3-methyl-2-furancarboxaldehyde (40 ug/l) and 1-methyl-3-propylcyclohexane (8 ug/l). No information was found for either compound.

ORIGINAL (Red)

Local groundwater is reported to flow toward Darby Creek, which borders the site on the south and east and flows southeastwardly (see sections 3.2 and 3.3.3). MWs throughout the site were sampled. MW no. 71 contained a significant oil layer, and samples from this well were separated into water-miscible (WM) and water-immiscible (WIM) phases and underwent high-hazard analysis.

In MW no. 66, located in area no. 1, benzene (190 ug/l), toluene (5 ug/l), EB (8 ug/l), and xylenes (12 ug/l) were detected. Benzene is a volatile organic compound (VOC) with a Maximum Contaminant Level (MCL) of 5 ug/l and an MCL Goal (MCLG) of zero, both of which were exceeded.[6] An oral human lowest observed toxic dose (TDLo) of 130 mg/kg, based on neurologic and gastrointestinal toxicity, has been reported.[5] Estimated intake (2 liters daily by a 70-kilogram adult) would fall well below this TDLo if this water were potable. However, benzene is classified as a Group A human carcinogen with a potency of 2.9×10^{-2} $(mg/kg/day)^{-1}$, and daily consumption could theoretically increase oral cancer risk by 1.6×10^{-4}.[7] Inhalation of carcinogenic VOCs can further increase cancer risk. The toluene, EB, and xylene levels were well below the proposed MCL/MCLGs of 2,000 ug/l, 700 ug/l, and 10,000 ug/l, respectively.[6]

In MW no. 68, located in area no. 2, 1,1-DCE (2 ug/l), 1,1-DCEA (2 ug/l), and 1,1,1-TCEA (1 ug/l) were detected. The 1,1-DCE and 1,1,1-TCEA levels were well below the MCL/MCLGs of 7 ug/l and 200 ug/l, respectively.[6] Estimated intake from the 1,1-DCEA level would be below the RfD, assuming potability and 2-liters-per-day consumption by a 70-kilogram person.[7] However, 1,1-DCEA is a Group B2 carcinogen with an oral cancer potency of 9.1×10^{-2} $(mg/kg/day)^{-1}$.[7] If this water were used domestically, theoretical increases in cancer via oral (5.3×10^{-6}) and inhalation contact could occur.

Carbon disulfide was detected in MW no. 67 at 2 ug/l. No drinking water criteria have been proposed for this compound, but 2-liter daily consumption of this VOC by a 70-kilogram adult would fall below the RfD.[8]

Many VOCs and SVOCs were tentatively identified in sampled MWs, and an HNU reading above background was recorded during the venting of MW no. 71 and the sampling of MW no. 107. A possible cyclobutylbenzene was tentatively identified up to 4,000 ug/l in the WM phase of MW no. 71. A search of the available literature and the Toxlit, Chemline, and HSDB databases yielded no information on this substituted benzene. 4,4'-Butylidene bis-2-1,1-dimethylethyl-5-methylphenol was tentatively identified in MW no. 69 at 10 ug/l, in MW no. 68 at 14 ug/l, and in MW no. 67 at 20 ug/l. This substituted phenol is an antioxidant, classified as mildly toxic via ingestion, with a reported oral rat LDLo of 17 g/kg.[5] 2,2'-Methylene-bis(1,1-dimethylethyl)-4-methylphenol was tentatively identified at 80 ug/l in MW no. 66. This substituted phenol and irritant is also described as mildly toxic, with a reported oral rat LD50 of 4,880 mg/kg.[5]

ORIGINAL (Red)

Sulfur was tentatively identified in MW no. 69 at 8 ug/l and in MW no. 67 at 40 ug/l. Sulfur is an element often seen in soil (in these MW samples, it may be particulate bound) and can be found in water or wastewaters, since several industrial processes use sulfur.[4] Sulfur is not especially noted for its toxicity at these levels.

Cyclohexane isomers were tentatively identified up to 78 ug/l in MW no. 66. Cyclohexane isomers were also detected in an on-site industrial pond. Cyclohexane is a moderately toxic irritant with a reported oral rat LD50 of 29,820 mg/kg.[5] Cyclohexene was tentatively identified in MW no. 66 at 9 ug/l. This alkene is moderately toxic via inhalation and ingestion.[5] Cyclohexanone (tentatively identified at 14 ug/l in MW no. 68) is an irritant and mild narcotic with a reported oral rat LD50 of 1,535 mg/kg and an oral rabbit LDLo of 1,600 mg/kg.[5]

Dodecanoic acid was tentatively identified in MW no. 68 at 18 ug/l. This mildly toxic carboxylic acid has a reported oral rat LD50 of 12 g/kg.[5] Hexathiepane was tentatively identified in MW no. 67 at 40 ug/l. Hexathiepane was detected in propellant combustion products from guns and rifles.[4]

1,2,4-Trithiolane was tentatively identified in MW no. 67 at 14 ug/l; this compound has been detected in landfill leachate and as a compound derived from fungi.[4] 4-Methyl-1,1-biphenyl was tentatively identified in MW no. 67 at 20 ug/l; this compound has a reported oral rat LD50 of 2,570 mg/kg.[10] For those MW contaminants for which animal data were available, estimated intakes would not exceed provisional allowable daily intakes (ADIs) estimated by the Layton method (multiplication of animal toxicity values by a conservative factor).[11] However, further analysis would be necessary to confirm the identity and quantitation of TICs.

Not surprisingly, unknown hydrocarbons and unresolved hydrocarbon matrices were detected in MW no. 71 in excess of 300,000,000 ug/l in the WIM (oil) phase. Unknown hydrocarbons were also tentatively identified in MW no. 67 (up to 74 ug/l), MW no. 69 (up to 364 ug/l), and MW no. 66 (up to 7,217 ug/l) (also described as having an oily sheen). It is clear that, due to the quantity of oil, MW no. 71 would not be fit for a potable source. Hydrocarbons include compounds that are used in petrochemicals, solvents, oil, and plant constituents.[9] In unfiltered MWs, these compounds are likely to be particulate bound or oil components. No specific toxicological assessment of such unknown compounds can be made. This is also true of unknown TICs, detected at 5,000 ug/l in MW no. 71, up to 38 ug/l in MW no. 67, 30 ug/l in MW no. 107, 24 ug/l in MW no. 109, 102 ug/l in MW no. 69, and 320 ug/l in MW no. 66.

ORIGINAL (Red)

PAHs were confidently and tentatively identified in MW no. 71 up to 14,180,000 ug/l (WIM) and up to 4,000 ug/l (WM), in MW no. 66 at 10 ug/l (naphthalene), and in MW no. 67 at 31 ug/l. There are no RfDs for most PAHs, but naphthalene has an RfD of 4×10^{-3} mg/kg per day, which would not be exceeded by the estimated intake from MW no. 66.[7] It is likely that the PAHs are components of the oily material, especially in MW no. 71. Although the water in MW no. 71 as described would be clearly unfit as a potable source because of the oil layer and none of the MWs are used for drinking water, some PAHs are classified as Group B2 carcinogens. Theoretical cancer risks can be estimated for MW no. 71 if, as recommended by EPA Region III, the former potency of 11.5 for benzo(a)pyrene is used and other PAHs are calculated relative to benzo(a)pyrene.[2,3] However, such a calculation would result in a cancer risk greater than 1. At high levels, cancer risk calculations based on the EPA linearized multi-stage model should not be used because the dose-response curve is not linear at high doses. All the above information reinforces the recommendation that MW no. 71 should not be used as a potable source.

DEP was detected in MW no. 107 at 22 ug/l. No drinking water criteria have been established for this common plasticizer, but 2-liter daily consumption by a 70-kilogram adult would result in a DEP intake below the RfD of 8×10^{-1} mg/kg per day.[7]

Aroclor 1248, a PCB, was detected in the WIM (oil) phase of MW no. 71 at 3,800 ug/l. PCBs are lipophilic and, in this case, Aroclor 1248 is likely to be a component of the oil layer. This exceeds the proposed MCL of 0.5 ug/l.[6] PCBs are classified as Group B2 carcinogens, based on Aroclor 1260, which was not detected at this site.[7] No RfDs have been developed for PCBs, which have been associated with chloracne and liver damage at high levels.[5] It would be prudent to avoid contact with this water.

Darby Creek, which borders the site and feeds the Tinicum Environmental Center, was sampled upstream and downstream of the site.

Trans-2,4-dimethyloxetane was tentatively identified in downstream surface water at 16 ug/l. A search of available literature and the HSDB, Chemline, and Toxlit databases yielded no information on this compound.

PAHs were detected in upstream (3,050 ug/kg) and downstream (up to 4,360 ug/kg) Darby Creek sediment. In spite of their lipophilicity, PAHs appear to be extensively metabolized by aquatic vertebrates, limiting their bioconcentration potential and, therefore, limiting potential exposure to fish consumers.[12] Invertebrates can bioaccumulate PAHs to a greater extent.[13] Aquatic species can be affected by PAHs in water at 300 ug/l (marine acute AWQC); naphthalene has a fresh-water chronic AWQC of 620 ug/l.[14] No PAHs were detected in Darby Creek surface water.

U.S. EPA - CLP
HIGH CONCENTRATION INORGANICS

DUPLICATES

EPA SAMPLE NO.

MCBD08WD

ORIGINAL (Red)

Lab Name: JTC ENVIRONMENTAL CNSLTS. Contract: 4208-I

Lab Code: JTC Case No.: SET49 SDG No.: MCBD08

Sample Percent: 100.0 Phase: LIQUID Duplicate Percent: 100.0

Concentration Units: mg/kg

Analite	WAVE	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M	
Aluminum			61.000	U	61.000	U			P	
Antimony			10.000	U	10.000	U			H	
Arsenic			10.000	U	10.000	U			H	
Barium			13.000	U	13.000	U			P	
Beryllium			1.500	U	1.500	U			P	
Cadmium			1.800	U	1.800	U			P	
Calcium		800.0	788.845	B	686.056	B	14		P	
Chromium		30.0	11.952	B	11.952	B	0		P	
Cobalt			6.800	U	6.800	U			P	
Copper			8.800	U	8.800	U			P	
Iron		200.0	35.000	U	54.980	B	200		P	near IDL
Lead		100.0	QBB 25.100	B	24.000	U	200		P	
Magnesium			600.000	U	600.000	U			P	
Manganese		40.0	5.578	B	5.578	B	0		P	
Mercury			0.300	U	0.300	U			NR	CV
Nickel			6.400	U	6.400	U			P	
Selenium		20.0	10.000	U	11.155	B	200		H	near IDL
Silver			3.500	U	3.500	U			P	
Sodium		4000.0	1099.602	B	1135.458	B	3		P	
Thallium			100.000	U	100.000	U			P	
Vanadium			6.400	U	6.400	U			P	
Zinc			7.200	U	7.200	U			P	
Cyanide									NR	

ORIGINAL (Red)

U.S. EPA - CLP
HIGH CONCENTRATION INORGANICS

MDL

Lab Name: JTC ENVIRONMENTAL CNSLTS. Contract: 4208-I

Lab Code: JTC Case No.: SET 49 SDG No.: MCBD08

ICP ID Number: 6000 Mercury ID Number: 460

HYDICP ID Number: 6000 Cyanide ID Number: RFA

Date: 11/09/89

Concentration Units MG/KG

Analyte	Wave-Length (nm)	WAVE	Integ. Time (sec)	CRQL	MDL	M
Alumnium	308.22		1.0	400	61	P
Antimony	206.23		1.0	20	14	H
Arsenic	193.37		1.0	20	10	H
Barium	233.53		1.0	120	13	P
Beryllium	313.04		1.0	40	1.5	P
Cadmium	214.00		1.0	10	1.8	P
Calcium	317.93		1.0	800	476	P
Chromium	267.72		1.0	30	4.0	P
Cobalt	228.62		1.0	200	6.8	P
Copper	324.75		1.0	40	8.8	P
Iron	259.94		1.0	200	35	P
Lead	220.00		1.0	100	24	P
Magnesium	279.08		1.0	800	600	P
Manganese	257.61		1.0	40	1.6	P
Mercury	254.00			0.3	0.2	CV
Nickel	231.06		1.0	40	6.4	P
Selenium	196.36		1.0	20	10	H
Silver	328.07		1.5	40	3.5	P
Sodium	589.59		1.0	4000	314	P
Thallium	190.71		1.0	400	100	P
Vanadium	292.40		1.0	200	6.4	P
Zinc	213.86		1.0	40	7.2	P
Cyanide			0.3			AS

NOT done

.25g → 100 (P) (400)
.25g → 100, dil 1:1 (H) (800)

HIGH CONCENTRATION SAS REQUEST
REGION III
Attention: Terri Shaughnessy, SMO

4208-I set 49 JTC

ORIGINAL (Red)

JUL 1989 RECEIVED

SAS 482

Site Name: Gulf Oil, Darby Creek Site Spill ID:

Site Location (city/state): Sharon Hill PA 9TFA03N9ZZ

Sampler: FIT III NUS Sampler Contact: [redacted]

Not responsive due to revised scope

Sampler Phone Number: 215-687-9510

Please Check One: [X] Inorganic SAS No. 4208-I [ ] Organic SAS No. 4368-I

SAMPLE DESCRIPTION

Number: 1 sample -

Matrix: oil and aqueous layers

Number of Phases: 2

(if applicable)

SPECIFY METHODS (if necessary)

please filter + analyze only aqueous phase.

use .45 uM pore size filter paper

INORGANIC ANALYSIS

X dissolved metals

___ Total Metals and Cyanide

___ Total Metals, Cyanide and Sulfide

Samples are to be prepared by method 50.62 ;Hg by method 202 .62 ; fusion to be prepared by method 200.62 ; As Sb, and Se are to be analyzed by method 202.62 C ; and Ca, Co, Be, Cd, Ti, Cr, Fe, Pb, Mn, Mg, Mo, Si, Na, Ni, Ag, Tl, and Zn are to be analyzed by method 200.62 B.

All methods are found in the 2/85 high hazard inorganic SOW.

ORGANIC ANALYSIS

___ FTCL

___ VOA

___ BNA

___ Pest/PCB

___ Aroclor/Toxaphene (Provided with FTCL unless otherwise indicated.)

Shipping Dates: sampled 7/12/89 ; will be shipped ASAP by Fed. EX

Please confirm receipt of request by SMO with next phone communication.

COMMENTS Deliverables as per current SOW (2/85). Must include copy of air bill, chain of custody, CLP packing or TR forms, + tags. All report forms MUST include full EPA sample number (e.g. I set 01-01 or TR #; whichever applies)

Date Request Mailed to SMO _____ EPA Region III Contact Colleen Walling

SMO Telefax No. 703-683-0378 1/26/89

PROJECT NAME: Gulf Oil Darby Creek
TDD NO.: F3-8906-07

EPA SITE NO.: PA-799
REGION: 3

ORIGINAL (Red)

SUPPORT DOCUMENTATION FOR THE REVIEW OF INORGANIC ANALYTICAL DATA PACKAGE

CASE/SAS NO.: 42081 set 47
TYPE OF ANALYSIS: hi conc inorganics CLP
CONTRACT LABORATORY: Chemtech
APPLICABLE IFB OR SOW: 1/88
REVIEWER: [redacted]
REVIEW DATE: April 11, 1990

APPLICABLE SAMPLE NO's.:
MCBD01A aq
MCBD01B solid

THE FOLLOWING TABLE INDICATES AREAS WHICH WERE EXAMINED IN DETAIL, THE IDENTIFIED PROBLEM AREAS, AND SUPPORT DOCUMENTATION ATTACHMENTS:

	AREAS EXAMINED IN DETAIL — CHECK (✓) IF YES OR FOOTNOTE LETTER FOR COMMENTS BELOW					PROBLEM AREAS IDENTIFIED — CHECK (✓) IF YES OR FOOTNOTE NUMBER FOR COMMENTS BELOW					SUPPORT DOCUMENTATION ATTACHMENTS — CHECK (✓) IF YES OR IDENTIFY ATTACHMENT NO.				
	ALL APPLICABLE ANALYSES	ICP OR A.A. METALS	FURNACE METALS	COLD VAPOR MERCURY	CYANIDE	ALL APPLICABLE ANALYSES	ICP OR A.A. METALS	FURNACE METALS	COLD VAPOR MERCURY	CYANIDE	ALL APPLICABLE ANALYSES	ICP OR A.A. METALS	FURNACE METALS	COLD VAPOR MERCURY	CYANIDE
HOLDING TIMES	✓														
BLANK ANALYSIS RESULTS	✓														
MATRIX SPIKES (PRE-DIGESTION)	✓														
DUPLICATES	✓														
QUANTITATION OF RESULTS	✓														
DETECTION LIMITS/SENSITIVITY	✓														
INITIAL CALIBRATIONS	✓														
CONTINUING CALIBRATIONS	✓														
LABORATORY CONTROL STANDARDS	✓														
ICP LINEAR RANGE ANALYSIS	✓														
ICP INTERFERENCE CHECKS	✓														
ICP SERIAL DILUTIONS	✓														
GFAA POST-DIGESTION SPIKES	NA														
GFAA DUPLICATE BURNS	NA														
GFAA STANDARD ADDITIONS	NA														
OTHERS															

COMMENTS:

[illegible]208I set 47 Chemtech
hi conc.

BLANK ANALYSIS RESULTS

TASK	TYPE	CONC	MATRIX	SAMPLE #	SOURCE OF H_2O	CONTAMINANTS (CONCENTRATION / DETECTION LIMIT)
Metals	initial cal. blank				lab	Cd .025 mg/l (10 mg/kg)
	Cont. Cal. blanks			(1)		Cd .023 mg/l
				(2)		Cd .022 mg/l
				(3)		ND
				(4)		ND
				(5)		ND
				(6)		Ag .030 mg/l
	only as, Sb, se			(7)		ND
				(8)		ND
	prep blank					Ag .0565 mg/l
CN	all blanks			ICB, CCB		ND

LABORATORY REPORTED FIELD BLANK DATA IS COMPARED WITH THE SAMPLE DATA IN A TABULATION FORM WITHIN SAMPLE ANALYTICAL DATA SUMMARY.

COMMENTS:

(1) RESULT REPORTED BY LABORATORY AND CONFIRMED BY REVIEWER.

(2) RESULT INFERRED FROM RAW DATA

U.S. EPA - CLP
HIGH CONCENTRATION INORGANICS

BLANKS

ORIGINAL (Red)

Lab Name: CHEMTECH CONSULTING GROUP Contract: 4208J

Lab Code: CHEM Case No.: 4208-I-SET47 SDG No.: 4208-MCB01

Preparation Blank Phase: LIQUID

Concentration Units: mg/L

Analyte	WAVE	Initial Calib. Blank	C	CCB 1	C	CCB 2	C	CCB 3	C	Prep Blank	C	M
Aluminum		0.150	U	0.150	U	0.150	U	0.150	U	0.150	U	P
Antimony		0.025	U	0.025	U	0.025	U	0.025	U	0.025	U	HY
Arsenic		0.025	U	0.025	U	0.025	U	0.025	U	0.025	U	HY
Barium		0.014	U	0.014	U	0.014	U	0.014	U	0.014	U	P
Beryllium		0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	P
Cadmium		0.025	B	0.023	B	0.022	B	0.013	U	0.009	U	P
Calcium		0.068	U	0.068	U	0.068	U	0.068	U	0.068	U	P
Chromium		0.012	U	0.012	U	0.012	U	0.012	U	0.012	U	P
Cobalt		0.009	U	0.009	U	0.009	U	0.009	U	0.009	U	P
Copper		0.034	U	0.034	U	0.034	U	0.034	U	0.034	U	P
Iron		0.017	U	0.017	U	0.017	U	0.017	U	0.017	U	P
Lead		0.177	U	0.0177	U	0.0177	U	0.0177	U	0.0177	U	P
Magnesium		0.072	U	0.072	U	0.072	U	0.072	U	0.072	U	P
Manganese		0.033	U	0.033	U	0.033	U	0.033	U	0.033	U	P
Mercury		0.0003	U	0.0003	U	—		—		0.0003	U	CV
Nickel		0.028	U	0.028	U	0.028	U	0.028	U	0.028	U	P
Selenium		0.025	U	0.025	U	0.025	U	0.025	U	0.025	U	P
Silver		0.016	U	0.016	U	0.016	U	0.016	U	0.0565	B	P
Sodium		0.714	U	0.714	U	0.714	U	0.714	U	0.714	U	P
Thallium		1.00	U	1.00	U	1.00	U	1.00	U	1.00	U	P
Vanadium		0.036	U	0.036	U	0.036	U	0.036	U	0.036	U	P
Zinc		0.016	U	0.016	U	0.016	U	0.016	U	0.016	U	P
Cyanide		0.01	U	0.01	U	—		—		—		C
SULFIDE		—		—		—		—		—		

~~C18~~

FORM V - HCIN

U.S. EPA - CLP
HIGH CONCENTRATION INORGANICS

BLANKS

ORIGINAL (Red)

Lab Name: CHEMTECH CONSULTING GROUP Contract: 4208I 4208I

Lab Code: CHEM Case No.: 4208I-SET47 SDG No. MCBA

Preparation Blank Phase: LIQUID

Concentration Units: mg/L

Analyte	WAVE	Initial Calib. Blank	C	Continuing Calibration Blanks CCB 4	C	CCB 5	C	CCB 6	C	Prep. Blank	C	M
Aluminum		0.1		0.150	U	0.15	U	0.15	U			P
Antimony				0.025	U	0.025	U	0.025	U			HY
Arsenic				0.025	U	0.025	U	0.025	U			HY
Barium				0.019	U	0.019	U	0.019	U			P
Beryllium				0.002	U	0.002	U	0.002	U			P
Cadmium				0.009	U	0.009	U	0.009	U			P
Calcium				0.068	U	0.068	U	0.068	U			P
Chromium				0.012	U	0.012	U	0.012	U			P
Cobalt				0.009	U	0.009	U	0.009	U			P
Copper				0.034	U	0.034	U	0.034	U			P
Iron				0.017	U	0.017	U	0.017	U			P
Lead				0.177	U	0.177	U	0.177	U			P
Magnesium				0.072	U	0.072	U	0.072	U			P
Manganese				0.033	U	0.033	U	0.033	U			P
Mercury				—		—		—				CV
Nickel				0.028	U	0.028	U	0.028	U			P
Selenium				0.025	U	0.025	U	0.025	U			HY
Silver				0.016	U	0.016	U	0.0298	B			P
Sodium				0.714	U	0.714	U	0.714	U			P
Thallium				1.00	U	1.00	U	1.00	U			P
Vanadium				0.036	U	0.036	U	0.036	U			P
Zinc				0.016	U	0.016	U	0.016	U			P
Cyanide				—		—		—				C
SULFIDE				—		—		—				

FORM V - HCIN

~~C10~~

U.S. EPA - CLP
HIGH CONCENTRATION INORGANICS

BLANKS

ORIGINAL (Red)

Lab Name: CHEMTECH CONSULTING GROUP Contract: 4208I

Lab Code: CHEM Case No.: SET47 SDG No. MCBD 01

Preparation Blank Phase: _____

Concentration Units: mg/L

Analyte	WAVE	Initial Calib. Blank	C	Continuing Calibration Blanks CCB 7	C	CCB 8	C	3	C	Prep. Blank	C	M
Aluminum				6								HW
Antimony				0.025	U	0.025	U					HY
Arsenic				0.025	U	0.025	U					
Barium												
Beryllium												
Cadmium												
Calcium												
Chromium												
Cobalt												
Copper												
Iron												
Lead												
Magnesium												
Manganese												
Mercury												
Nickel												HX
Selenium				0.025	U	0.025	U					
Silver												
Sodium												
Thallium												
Vanadium												
Zinc												
Cyanide												

~~C20~~

FORM V - HCIN

U.S. EPA - CLP
HIGH CONCENTRATION INORGANICS

ICS

ORIGINAL (Red)

Lab Name: CHEMTECH CONSULTING GROUP Contract: 4208I

Lab Code: CHEM Case No.: 4208 I SET 47 SDG No.: MCB0 0 4208I

ICP ID Number: PI ICS Source: EPA - LV

Concentration Units: mg/L

Analyte	WAVE	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	%R	Final Found Sol. A	Final Found Sol. AB	%R	M
Aluminum		511.000	508.000	456.2	420.7	82.8	451.5	454	89.4	P
Antimony										
Arsenic										
Barium			0.483		0.455	94.3		0.496	103	P
Beryllium			0.474		0.452	95.4		0.497	105	P
Cadmium			0.909		1.052	116		1.06	117	P
Calcium		476.000	470.000	518	481.6	103	509	511	108	P
Chromium		0.048	0.513	0.045	0.507	98.8	0.052	0.56	110	P
Cobalt			0.478		0.469	98.1		0.455	95.2	P
Copper			0.534		0.466	82.6		0.47	88.0	P
Iron		219.000	211.000	203	193.6	91.7	201.1	205	97.2	P
Lead			4.850		5.15	107		4.95	102	P
Magnesium		513.000	513.000	607	540	105	535	508	99.0	P
Manganese			0.470		0.563	120		0.550	118	P
Mercury										
Nickel			0.916		0.972	106		1.006	110	P
Selenium										
Silver			0.993		0.984	99.1		0.987	99.4	P
Sodium										P
Thallium										P
Vanadium			0.475		0.442	93.1		0.45	90.7	P
Zinc			0.973		1.01	104		1.07	110	P

~~021~~

ORIGINAL (Red)

U.S. EPA - CLP
HIGH CONCENTRATION INORGANICS

SPIKE SAMPLE RECOVERY

EPA SAMPLE

MCBD-01

Lab Name: Chem Tech Consulting Co. Inc. Contract: 4208 I

Lab Code: Chem Case No.: SET47 SDG No.: MCB -(

Phase: Liquid Phase A Percent: _____

liquid (A)

Concentration Units: mg/kg

Analyte	WAVE	Control Limit %R	Spiked Sample Result (SSR)	C	~~Spiked~~ Sample Result (SSR)	C	Spike Added (SA)	%R	Q
Aluminum			2476		850		1258.000	129 OR	N
Antimony			58		20.0	U		4.6	N
Arsenic			707		20.0	U		56.2	N
Barium			997		5.6	U		79.3	
Beryllium			1092		0.80	U		86.8	
Cadmium			1006		3.60	U		79.8	
Calcium			2143		660	B		118	
Chromium			1031		4.80	U		81.9	
Cobalt			1140		3.60	U		90.6	
Copper			1210		18.5	B		94.7	
Iron			1410		133	B		102	
Lead			917		708	U		73.0	
Magnesium			1211		211	B		79.5	
Manganese			855		13.2	U		68.0 ✓	N
Mercury			1.3		0.3	U	~~2.500~~ 1.00	~~80.5~~ ~~100~~	~~N~~ OR
Nickel			1012		11.2	U	1258.000	80.5	
Selenium			287		20.0	U		22.8	N
Silver			516		6.40	U		41.0	
Sodium			1226	B	286	U		97.5	
Thallium			1009		400	U		80.2	
Vanadium			1353		14.4	U		108	
Zinc			808		19.2	B		62.7 ✓	N
Cyanide			1040		1.5	U		82.7	

Comments:

FORM VII - HCIN

ORIGINAL (Red)

U.S. EPA - CLP
HIGH CONCENTRATION INORGANICS

SPIKE SAMPLE RECOVERY

EPA SAMPLE

MCBD-01

Lab Name: Chem Tech consulting Gr. Inc. Contract: 4208I

Lab Code: Chem Case No.: SET47 SDG No.: MC

Phase: SOLID, B Percent: _____

Solid

B

Concentration Units: mg/kg

Analyte	WAVE	Control Limit %R	Spiked Sample Result (SSR)	C	~~Spiked~~ Sample Result (SSR)	C	Spike Added (SA)	%R	Q
Aluminum			5320		4128		1258.000	94.7	
Antimony		~~20~~	20 ~~24.6~~ ~~6.28~~	U	d=ND 41.7		res L	~~68.4~~	
Arsenic			860.0	T	20.0	U	no pos. 68.4	~~N.R.~~	N
Barium			933		14.5	B	OR	73.0	N
Beryllium			1042		0.80	U		82.8	
Cadmium			980		3.60	U		77.9	
Calcium			1842		2650		res L	64.2	N
Chromium			990		8.72	B	OR	78.7	
Cobalt			1121		4.36	B		88.6	
Copper			1138		25.7	B		88.4	
Iron			2336		1206			88.9	
Lead			930		70.8	U	OR	73.9	
Magnesium			1080		398	B	res L	54.2	N
Manganese			947		26.2	B	OR	73.2	
Mercury			1.0		0.3	U	~~2.500~~ 1.00	~~79.0~~ ~~100~~	
Nickel			1009		15.2	B	1258.000 OR	79.0	
Selenium			247 ~~20.0~~	T	20.0	U	dL	18.6 ~~N.R.~~	N
Silver			506		6.40	U	dL	40.2	N
Sodium			1163	B	d=ND 28.7 at IOL	B	d= 92%	69.6	N OR
Thallium			656		400	U	dL	52.1	
Vanadium			1286		14.4	U		102	
Zinc			850		476		res L	63.8	N
Cyanide			1050		1.5	U		83.5	

Comments: NG - spl inhomog. caused low recov.

FORM VII - HC1N

U.S. EPA - CLP
HIGH CONCENTRATION INORGANICS

Method DUPLICATES

EPA SAMPLE
ORIGINAL (Red)
MCBD-01

Lab Name: CHEMTECH CONSULTING GROUP Contract: 4208E

Lab Code: CHEM Case No.: SET 47 SDG No.: MCBD-C

A

Sample Percent: ~~LIQUID~~ A Phase: LIQUID, A Duplicate Percent: _____

Concentration Units: mg/kg

Analyte	WAVE	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum			850		860		1.17		P
Antimony		20	20.0 ~~8.47~~	U	24.6		~~51.6~~ 200		HY
Arsenic			20.0	U	20.0	U	N.R.		HY
Barium			5.60	U	5.60	U	N.R.		P
Beryllium			0.80	U	0.80	U	N.R.		P
Cadmium			3.60	U	13.6	U	N.R.		P
Calcium			660	B	677	B	2.54		P
Chromium			4.80	U	4.80	U	N.R.		P
Cobalt			3.60	U	3.60	U	N.R.		P
Copper			18.50	B	17.2	B	7.28		P
Iron			133	B	140	B	5.12		P
Lead			70.8	U	70.8	U	N.R.		P
Magnesium			211	B	227	B	7.30		P
Manganese			13.2	U	13.2	U	N.R.		P
Mercury		0.3	0.3		0.3	U	ok		CV
Nickel			11.2	U	11.2	U	N.R.		P
Selenium			20.0	U	20.0	U	N.R.		HY
Silver			6.40	U	6.40	U	N.R.		P
Sodium			286	U	286	U	N.R.		P
Thallium			400	U	400	U	N.R.		P
Vanadium			14.4	U	14.4	U	N.R.		P
Zinc			19.2	B	18.9	B	1.58		P
Cyanide			1.5	U	1.5	U	N.R.		C

Comments:

FORM IX - HCIN

U.S. EPA - CLP
HIGH CONCENTRATION INORGANICS

Method DUPLICATES

EPA SAMPLE

MCBD ORIGINAL (Red)

Lab Name: CHEMTECH CONSULTING GROUP Contract: 4208E

Lab Code: CHEM Case No.: SET47 SDG No.: MCBD-C

Sample Percent: B Phase: Solid (B) Duplicate Percent: _____

Concentration Units: mg/kg

Analyte	WAVE	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M	
Aluminum			4128		2354		54.7	*	P	
Antimony		20	41.7		200	U	200		HV	
Arsenic			200	U	20.0	U	N.R.		HV	
Barium		120	14.5	B	9.28	B	43.8		P	
Beryllium			0.80	U	0.80	U	N.R.		P	
Cadmium			3.60	U	3.60	U	N.R.		P	
Calcium		800	2650		1338		59.6	*	P	res (L)
Chromium		30	8.72	B	4.80	U	200	OL	P	mean ICL
Cobalt		200	4.36	B	3.60	U	200	OL	P	
Copper		40	25.7	B	13.6	U	200	OL	P	
Iron		200	1206		743		47.5	*	P	
Lead			70.8	U	70.8	U	N.R.		P	
Magnesium		800	398	B	249	B	46.6		P	
Manganese		40	26.2	B	13.2	U	200		P	
Mercury			0.3	U	3.2		200	*	CV	mean ICL
Nickel		40	15.2	B	11.2	U	200		P	
Selenium			20.0	U	20.0	U	N.R.		HV	
Silver			6.40	U	6.40	U	N.R.		P	
Sodium		4000	287	B	~~4000~~ 286	U	200		P	at ICL
Thallium			400	U	400	U	NR		P	
Vanadium			14.4	U	14.4	U	N.R.		P	
Zinc		40	47.6		29.0	B	48.6		P	
Cyanide			1.5	U	1.5	U	N.R.		C	

Comments:

FORM IX - HCIN

Metal As/Se/Sb
IDL .085 mg/l
U = < IDL

[PDS] = 1.5 ppm
[matrix spike] = 1.57 ppm

ORIGINAL (Red)

Graphite Furnace Spike Recovery Evaluation Form

	Sample ID	Instr. Level Result mg/l	PDS Recovery %	Diluted Result mg/l	Diluted PDS Recovery %	MSA Result (if needed) ~~ug/l~~	Final Result Reported mg/kg
As	MCBD01A	ND	99				20 U
	MCBD01AD	ND	98				20 U
	MCBD01AS	.884	—				56%
	MCBD01B	ND	104				20 U
	MCBD01BD	ND	104				20 U
	MCBD01BS	1.075	—				68%
Se	MCBD01A	ND	106				20 U
	MCBD01AD	ND	95				20 U
	MCBD01AS	.360	—				23%
	MCBD01B	ND	99				20 U
	MCBD01BD	ND	98				20 U
	MCBD01BS	.309	—				20%
Sb	MCBD01A	ND	108				20 U
	MCBD01AD	.0308	114				25
	MCBD01AS	.0725	—				4.6%
	MCBD01B	.0521	95				41.7 ✓ 2xIDL
	MCBD01BD	ND	94				20 U
	MCBD01BS	.000	—				0%

U.S. EPA - CLP
HIGH CONCENTRATION INORGANICS

MDL

ORIGINAL (Red)

Lab Name: CHEMTECH CONSULTING GROUP Contract: 4208I

Lab Code: CHEM Case No.: 4208I-SET- SDG No.: SET

ICP ID Number: P1 Mercury ID Number: CV1

HYICP ID Number: HV1 Cyanide ID Number: C1

Date: 01/11/89

Concentration Units: mg/L (mg/kg)

Analyte	Wave-Length (nm)	WAVE	Integ. Time (sec)	CRQL	MDL	M
Aluminum	308.20		10	400	10.000	P
Antimony	206.80		10	20	80.000	HV
Arsenic	193.70		10	20	20.000	HV
Barium	493.40		10	120	5.600	P
Beryllium	313.00		10	40	0.800	P
Cadmium	226.50		10	10	3.600	P
Calcium	317.90		10	800	27.200	P
Chromium	267.70		10	30	4.800	P
Cobalt	228.60		10	200	3.600	P
Copper	324.70		10	40	13.600	P
Iron	259.90		10	200	6.800	P
Lead	284.60		10	100	70.800	P
Magnesium	279.00		10	800	28.800	P
Manganese	257.60		10	40	13.200	P
Mercury				0.3	0.080	CV
Nickel	231.60		10	40	11.200	P
Selenium	196.00		10	20	20.000	HV
Silver	328.00		10	40	6.400	P
Sodium	588.90		10	4000	285.600	P
Thallium	276.40		10	400	400.000	P
Vanadium	292.40		10	200	14.400	P
Zinc	213.80		10	40	6.400	P
Cyanide				~~10~~ 1.5	1.500	C

FORM XII - HCIN

U.S. EPA - CLP

9

ICP SERIAL DILUTIONS

EPA SAMPLE NO.

MCBD04L

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 12281 SAS No.: SDG No.: MCBD04

Matrix (soil/water): WATER Level (low/med): LOW

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Aluminum	32.07	B					NR
Antimony	26.60	U					NR
Arsenic							F
Barium	98.57	B	50.85	B	48.4	E	P
Beryllium	1.50	U					NR
Cadmium	3.40	U					NR
Calcium	58009.00		55920.00		3.6		P
Chromium	9.13	B					NR
Cobalt	72.15		74.50	B	3.3		P
Copper	6.98	B					NR
Iron	QBB 98.74	B	136.90	B	38.6		P
Lead							F
Magnesium	72376.00		68430.00		5.5		P
Manganese	309.82		303.80		1.9		P
Mercury							CV
Nickel	61.75						NR
Potassium	16119.00		15279.00	B	5.2		P
Selenium							F
Silver	8.40	U					NR
Sodium	128070.00		123020.00		3.9		P
Thallium							F
Vanadium	7.13	B					NR
Zinc	79.15		QBB 87.30	B	10.3		P

0050

ORIGINAL (Red)

U.S. EPA - CLP

9

ICP SERIAL DILUTIONS

EPA SAMPLE NO.

MCBD17L

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 12281 SAS No.: SDG No.: MCBD04

Matrix (soil/water): SOIL Level (low/med): LOW

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Aluminum	79542.00		85655.00		7.7		P
Antimony	26.60	U					NR
Arsenic							F
Barium	503.05		496.35	B	1.3		P
Beryllium	5.45						NR
Cadmium	11.92						NR
Calcium	7286.50		6932.50	B	4.9		P
Chromium	489.78		485.70		0.8		P
Cobalt	48.41	B					NR
Copper	351.21		346.55		1.3		P
Iron	74516.00		75095.00		0.8		P
Lead							F
Magnesium	15327.00		15019.00	B	2.0		P
Manganese	639.96		646.55		1.0		P
Mercury							CV
Nickel	83.63		80.20	B	4.1		P
Potassium	8498.30		7984.00	B	6.1		P
Selenium							F
Silver	8.40	U					NR
Sodium	538.88	B	369.25	B	31.5		P
Thallium							F
Vanadium	162.79		153.40	B	5.8		P
Zinc	1057.40		1078.00		1.9		P

0051

Metal As
IDL 1.6 ug/l
U = < IDL

ORIGINAL (Red)

Graphite Furnace Spike Recovery Evaluation Form

	Sample ID	Instr. Level Result ug/l	PDS Recovery %	Diluted Result ug/l	Diluted PDS Recovery %	MSA Result (if needed) ug/l	Final Result Reported	
	MCBD04	7.0	10	(B) 7.05 #	10	no msa # < CRDL	14.1	B spl spec. effect
	04D	9.1	0					
	04S	8.0	0				0%	
	05	2.5	101				2.5 ug/l	B
	06	ND	100				U	
	07	ND	107				U	
	09	ND	106			ND	U	
	10	3.0	99				3.0	B
.431	17	42.5	88				18.3 mg/kg	✓
.417	17D	39.4	93				16.4	✓
.437	17S	70.8	81				71%	d=79%
.382	18	26.4	83			32.4	12.4	✓
.273	19	14.7	105				4.00	✓
.247	20	8.72	95				2.2	✓ B
.288	21	8.0	103				2.3	✓ B
.359	22	9.57	99				3.4	✓ B
.236	23	23.7	100				5.6	✓
.231	MCN244	27.0	93				6.2	✓
.222	MCN245	20.7	60			29.2	6.5	✓
.254	MCP961	4.55	0 ?	5x 5.81	74	7.4 mg/kg	7.4 mg/kg	✓ (L)
.387	MCQ102	53 h RSD	3			77.5	30.	✓
.253	MCQ103	16.7	14	2x 11.6	53		5.9	✓ (L)
f-blk	MCBD11	ND	87				U ug/l	✓
	MCBD04			5x 5.6 (B)	23			

Metal Se
IDL 2.1 ug/l
U = < IDL

ORIGINAL (Red)

Graphite Furnace Spike Recovery Evaluation Form

	Sample ID	Instr. Level Result ug/l	PDS Recovery %	Diluted Result ug/l	Diluted pos Recovery %	MSA Result (if needed) ug/l	Final Result Reported	
	MCB004	ND	0	5x ND	15		U ug/l	
	040	ND	0	5x ND	22			dl↗
	045	ND	0					
	05	ND	59					dl↗
	06	ND	74					
	07	ND	71					
	09	ND	66					
	10	ND	44					dl↗
.431	17	ND	67				mg/kg	
.417	170	ND	74					
.437	175	6.0 hi RSD	68	rerun 6.4	87		64%	pos only spike
.382	18	ND	70					
.273	19	ND	86					
.247	20	ND	58 hi RSD	ND	67			
.288	21	ND	79 hi RSD	ND	77			
.354	22	ND	82					
.236	23	ND	86					
.231	MCW244	ND	79					
.222	MCW245	ND	79					
.254	MCP961	ND	36 →	3x ND	75			dl
.387	MCQ302	ND	68					
.258	MCQ303	ND	43				→ mg/kg	dl↗
f-blk	MCBD11	ND	67				↓ ug/l	

Metal Tl
IDL 1.3 ug/l
U = < IDL

ORIGINAL (Red)

Graphite Furnace Spike Recovery Evaluation Form

	Sample ID	Instr. Level Result ug/l	PDS Recovery %	Diluted Result ug/l	Diluted PDS Recovery %	MSA Result (if needed) ug/l	Final Result Reported	
	MCBD04	ND	49				U ug/l	spl. spec.
	04D	ND	46					
	04S	26.8	56				54%	
	05	ND	85					
	06	ND	39 →	(5x) ND	69		5-U	✓
	07	ND	65					
	09	ND	68					
	10	ND	90					
.431	17	ND	102				mg/kg	
.417	17D	ND	99					
+50 .437	17S	4.9	100				10%	dig loss.
.382	18	ND	97					all solids
.273	19	ND	95					affected
.247	20	ND	80					
.288	21	ND	91					
.359	22	ND	93					
.236	23	ND	97					
.231	MCN244	ND	93					
.222	MCN245	ND	91					
.254	MCP961	ND	94					
.387	MCQ102	ND	91					
.253	MCQ103	ND	87					
f blk	MCBD11	ND	101				ug/l	

Metal Pb
IDL 1.0 ug/l
U = < IDL

ORIGINAL (Red)

Graphite Furnace Spike Recovery Evaluation Form

	Sample ID	Instr. Level Result ug/l	PDS Recovery %	Diluted Result ug/l	Diluted PDS Recovery %	MSA Result (if needed) ug/l	Final Result Reported	
	MCBD04	8.8	103				8.8 ug/l	✓
	04D	8.6	101				8.6	✓
	04S	31.05	108				111%	
	05	ND	106				1U	
	06	ND	96				1U	
	07	ND	106				1U	
	09	1.6	113				1.6	✓
	10	ND	107				1U	ICP
.431	17	hi	hi	(10x) 28.26	99		122 mg/kg	✓ 110
.417	17D	hi	hi	25.15	93		105	✓ 115
20 .437	17S	hi	hi	26.53	103		SR77SA	(105%)
.382	18	hi	hi	31.43	100		120	✓ 114
.273	19	hi	hi	(20x) 26.68	100		146	✓ 118
.247	20	hi	hi	(10x) 15.68	101		38.7	✓ 44
.288	21	hi	hi	13.56	111		39.1	✓ 32
.359	22	hi	hi	(20x) 21.96	105		158	✓ 198
.236	23	hi	hi	(10x) 27.88	137	→ 276	65.2	✓ 52
→ .231	MCN244	hi	hi	(20x) 43.3 (866)	124	(2x) 343 = 686	158	✓ (165)
.222	MCN245	hi	hi	(20x) 23.6	98		104	✓ 102
.254	MCP961	hi	hi	(20x) 20.49	99		104	✓ 134
.387	MCQ102	hi	hi	(10x) 10.89	99		42.1	✓ 39
.253	MCQ103	hi	hi	(10x) 14.7	97		37.2	✓ 40
f. blk	MCBD11	ND	108				1U ug/l	

065 -14	M3S	MCBD23	10.00x	27 JUL 89 17:13

	Pb-S	Tl-S
Value	54.81	60.63
Spike added	30.00	30.00
Intercept	26.291	-0.866
Slope	0.952	2.045
Coefficient	0.9998	1.0000
Calc. conc.	27.6 S	-0.3 S

MF 7/27/89

ORIGINAL (Red)

Off by a factor of 2

correct but actual dilution wrong (40)?

066 -15	MOS	MCN244	20.00x	27 JUL 89 17:15

	Pb-S	Tl-S
Value	15.21	~~-01.86~~
Spike added	0.00	0.00

adjust for MSA anal was not diluted 20X, but 40X.

ICP data + initial anal yield results twice as high.

0214

PGS SAMPLE ID	CODE	CLIENT ID	DILUTION	DATE	TIME
067 -15	M1S	MCN244	20.00x	27 JUL 89	17:18

	Pb-S	Tl-S
Value	24.08	19.43
Spike added	10.00	10.00

068 -15	M2S	MCN244	20.00x	27 JUL 89 17:21

	Pb-S	Tl-S
Value	34.19	38.79
Spike added	20.00	20.00

069 -15	M3S	MCN244	20.00x	27 JUL 89 17:24

	Pb-S	Tl-S
Value	41.68	58.03
Spike added	30.00	30.00
Intercept	15.362	-1.257
Slope	0.895	1.990
Coefficient	0.9985	0.9997
Calc. conc.	17.2 S	-0.5 S

344 2

070 50 PPB	CCV	068	1.00x	27 JUL 89 17:27

MF 7/27/89

	Pb-S	Tl-S
Value	47.12	49.62
Check	***	***

071 CAL BLK	CCB		1.00x	27 JUL 89 17:30

	Pb-S	Tl-S
Value	-00.18	-00.95

ORIGINAL
(Red)

Analysis Report Tue 07-25-89 03:04:10 PM page 1

Method: CLP01A Sample Name: 8907067-15;S Operator: KDJ
Run Time: 07/25/89 15:01:48
Comment: 8907067--8920601
Mode: CONC Corr. Factor: 1

~~MCB024~~ Kaj
MCN244

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	Cd2265	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	72.146	-.00343	-.00310	.72341	.00162	.00108	57.090
SDev	.822	.02475	.01587	.00461	.00040	.00328	.190
%RSD	1.1397	-722.15	-512.12	.63708	24.744	302.39	.33225
#1	71.647	-.02783	-.02043	.72075	.00209	-.00134	57.114
#2	71.696	.02165	.00042	.72075	.00139	.00481	56.889
#3	73.095	-.00410	.01071	.72873	.00139	-.00022	57.266

Elem	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.94979	.39572	.52768	98.506	.72306	18.764	3.9594
SDev	.00284	.00380	.00325	.360	.00741	.082	.0080
%RSD	.29909	.96041	.61570	.36546	1.0251	.43921	.20104
#1	.95143	.39416	.52468	98.296	.72199	18.686	3.9601
#2	.94651	.39294	.52721	98.301	.73095	18.757	3.9511
#3	.95144	.40005	.53113	98.922	.71624	18.850	3.9670

Elem	Ni2316	K_7664	Ag3280	Na5889	V_2924	Zn2138
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.31193	5.9280	.00505	1.3347	.94614	1.1969
SDev	.00497	.1238	.00104	.0142	.00521	.0040
%RSD	1.5930	2.0880	20.559	1.0675	.55065	.33410
#1	.31744	5.7903	.00617	1.3184	.94095	1.1982
#2	.31055	6.0300	.00486	1.3445	.94611	1.1924
#3	.30779	5.9639	.00412	1.3413	.95137	1.2001

723 X .228 = 165 mg/kg

Report

RAW DATA FROM ADS200 DATA SYSTEM

Page ORIGINAL (Red)

Instrument code: F1
Run ID: 8920801

POS	SAMPLE ID	CODE	CLIENT ID	DILUTION	DATE	TIME
046	-15	S	MCN244	20.00x	27 JUL 89	15:18

	Pb-S	T1-S
Burn 1	42.42	-01.31
Burn 2	44.27	-00.51
Mean	43.34 =	-00.91 =
RSD	03.01	-62.08

43.34 X 20 = 867 ug/l

POS	SAMPLE ID	CODE	CLIENT ID	DILUTION	DATE	TIME
047	-15	AS	MCN244A	20.00x	27 JUL 89	15:24

agrees well w/ ICP data

	Pb-S	T1-S
Burn 1	54.53	22.04
Burn 2	57.06	24.32
Mean	55.79 =	23.18 =
RSD	03.20	06.95
Sample value	43.34	1.30U
Spike added	10.00	20.00
Spike recovery, %	124.5	115.9

MF 7/27/89

MSA result maybe 2X higher (df = 40, not 20) ?

POS	SAMPLE ID	CODE	CLIENT ID	DILUTION	DATE	TIME
048	50 PPB	CCV		1.00x	27 JUL 89	15:35

	Pb-S	T1-S
Burn 1	49.47	50.15
Burn 2	49.74	50.58
Mean	49.60 =	50.36 =
RSD	00.38	00.60
Check	OK	OK

POS	SAMPLE ID	CODE	CLIENT ID	DILUTION	DATE	TIME
[illegible]	CAL BLK	CCB		1.00x	27 JUL 89	15:41

	Pb-S	T1-S
Burn 1	00.34	-00.40
Burn 2	00.23	-00.62
Mean	00.28 =	-00.51 =
RSD	27.85	-30.39
Check	OK	OK

POS	SAMPLE ID	CODE	CLIENT ID	DILUTION	DATE	TIME
050	-16	S	MCN245	20.00x	27 JUL 89	15:46

	Pb-S	T1-S
Burn 1	23.47	-00.85
Burn 2	23.74	-00.88
Mean	23.60 =	-00.87 =
RSD	00.80	-02.52

MF 7/27/89

ORIGINAL
(Red)

APPENDIX B

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

ORIGINAL (Red)

EPA SAMPLE NO.

CCM17 00136

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Matrix: (soil/water) WATER Lab Sample ID: CCM17

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 52611EC1

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ Date Analyzed: 07/20/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	4	BJ
67-64-1	Acetone	3	J
75-15-0	Carbon Disulfide	2	J
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylenes (Total)	5	U

ORIGINAL (Red)

Instrument code: F3
Run ID: 8921201

POS	SAMPLE ID	CODE	CLIENT ID	DILUTION	DATE	TIME
051	-17	AS	MCP961A	2.00x	31 JUL 89	13:32

	As-S	Se-S
Burn 1	10.62	04.97
Burn 2	11.60	05.87
Mean	11.11 =	05.42 =
RSD	06.22	11.73
Sample value	5.36	2.10U
Spike added	20.00	10.00
Spike recovery, %	28.8	54.2

SV 7-31-89

POS	SAMPLE ID	CODE	CLIENT ID	DILUTION	DATE	TIME
052	-17	S	MCP961	5.00x	31 JUL 89	13:35

	As-S	Se-S
Burn 1	05.80	-00.73
Burn 2	05.83	-00.02
Mean	05.81 =	-00.38 =
RSD	00.37	DIG HI

SV 7-31-89

use; report 7.4 mg/kg (L)

5.81x5=29.05
x.254=7.4 mg/kg

POS	SAMPLE ID	CODE	CLIENT ID	DILUTION	DATE	TIME
053	-17	AS	MCP961A	5.00x	31 JUL 89	13:39

	As-S	Se-S
Burn 1	20.56	08.43
Burn 2	20.79	06.53
Mean	20.67 =	07.48 =
RSD	00.78	17.95
Sample value	5.81	2.10U
Spike added	20.00	10.00
Spike recovery, %	74.3	74.8

POS	SAMPLE ID	CODE	CLIENT ID	DILUTION	DATE	TIME
054	-18	S	MCQ102	5.00x	31 JUL 89	13:43

	As-S	Se-S
Burn 1	16.60	-00.73
Burn 2	17.52	-00.51
Mean	17.06 =	-00.62 =
RSD	03.81	-25.00

NOT NECESSARY SV 7-31-89

SV 7-31-89

POS	SAMPLE ID	CODE	CLIENT ID	DILUTION	DATE	TIME
055	-18	AS	MCQ102A	5.00x	31 JUL 89	13:47

	As-S	Se-S
Burn 1	36.92	09.78
Burn 2	35.35	08.79
Mean	36.13 =	09.28 =
RSD	03.07	07.54
Sample value	17.06	2.10U
Spike added	20.00	10.00
Spike recovery, %	95.4	92.8

0164

rerun MSA

ORIGINAL (Red)

SEQ NO: 335

Skinner & Sherman Labs
COLD VAPOUR ATOMIC ABSORPTION
MERCURY BENCH SHEET

	SAMPLE ID	CLIENT ID	PK HT(mm)	CONC(ppb)	COMMENT
	8907089 -07	MCR 742	1	-0.113	
	-08	744	1	-0.113	
	CCV		39	1.98	98.7%
	CCB		0	-0.168	
	8907089 -09	MCR 746	0	-0.168	
	-10	748	1	-0.113	
	-11	750	1	-0.113	
	-12	752	1	-0.113	
	-13	756	3	-0.003	
	-14	758	1	-0.113	
	-15	760	1	-0.113	
	8907090 -DBS		2	-0.058	
	-LBS		55	2.85	
	-01	MCBX81	31	1.54	
	CCV		41	2.09	104.2%
	CCB		0	-0.168	
	8907090 -02	MCBX82	29	1.43	
	-03	83	11	0.436	
	-03S2	83D	11	0.436	
	-03DS	83S	34	1.70	
	-04	84	15	0.656	
	-DBW		1	-0.113	
	-05	MCBX85	1	-0.113	
	-06	86	5	0.107	
	-07	87	1	-0.113	
	-08	88	2	-0.058	
8	CCV 1		41	2.09	104.2%
9	CCB 1		0	-0.168	
	8907090 -09	MCBX89	1	-0.113	
	-10	90	1	-0.113	
	-10S2	90D	1	-0.113	
	-11	91	1	-0.113	
	-11DS	91S	23	1.10	
	-12	92	1	-0.113	
	-13	93	1	-0.113	
10	8907067 -16(1:3)		26	1.26 x4 = 5.04 mg/kg	
11	CCV 2		33	1.65	82.3%
12	CCB 2		0	-0.168	

NOT THIS CASE

07/29/89

NOT THIS CASE 07/29/89

5.04 x .53 = 2.67 mg/kg

Report

ORIGINAL (Red)

$\frac{101\,mm}{87\,mm} \times 5\,ppb = 5.8\,ppb$

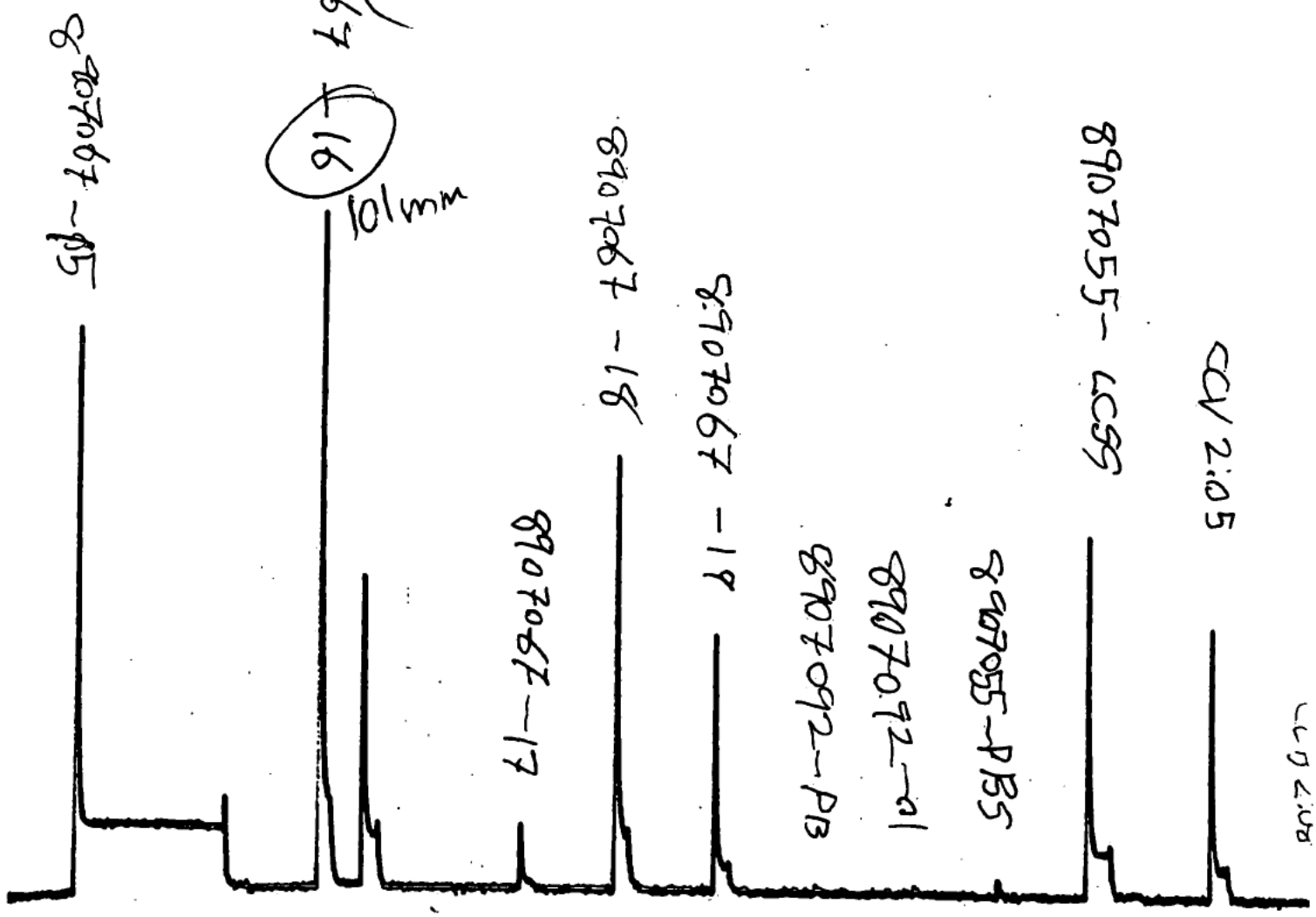
89 20601-06
7-25-89

initial analy

5.8 x .53 = 3.1 mg/kg (est.)

MCN 245

8907067 (over highest STD)



0222

4X dilution :

8920701-04
7-27-89

27mm x 4 = 108 mm
Very close
to initial
analysis

CCV 4:26
8907067-16(113)
8907090-13
8907090-12
8907090-11D5
8907090-11
8907090-10
8907090-09
CCB 3:45
CCV 3:42
8907090-08
8907090-07
8907090-06
8907090-05

0227

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Fisher Scientific Co. Pittsburgh, PA

PROJECT NAME: Gulf Oil Darby Creek
TDD NO.: F3B906-07

EPA SITE NO.: PA-799
REGION: III

ORIGINAL (Red)

SUPPORT DOCUMENTATION FOR THE REVIEW OF ORGANIC ANALYSIS LAB DATA PACKAGE

CASE (SAS) NO.: 4368I set 41
TYPE OF ANALYSIS: hi conc organics/PCBs
CONTRACT LABORATORY: WRT
APPLICABLE IFB OR SOW: 2/88
REVIEWER: R Cohen
REVIEW DATE: April 11, 1990

APPLICABLE SAMPLE NO's.:
CCM18 WML
CCM18 WIL

THE FOLLOWING TABLE INDICATES AREAS WHICH WERE EXAMINED IN DETAIL, THE IDENTIFIED PROBLEM AREAS, AND SUPPORT DOCUMENTATION ATTACHMENTS:

	AREAS EXAMINED IN DETAIL — CHECK (✓) IF YES OR FOOTNOTE LETTER FOR COMMENTS BELOW				PROBLEM AREAS IDENTIFIED — CHECK (✓) IF YES OR FOOTNOTE NUMBER FOR COMMENTS BELOW				SUPPORT DOCUMENTATION ATTACHMENTS — CHECK (✓) IF YES OR IDENTIFY ATTACHMENT NO.			
	ALL APPLICABLE ANALYSES	VOA	BNA	PEST/PCB	ALL APPLICABLE ANALYSES	VOA	BNA	PEST/PCB	ALL APPLICABLE ANALYSES	VOA	BNA	PEST/PCB
HOLDING TIMES	✓											
BLANK ANALYSIS RESULTS: TARGET COMPOUNDS	✓						✓		✓			
BLANK ANALYSIS RESULTS: TENTATIVE I.D.s	✓								✓			
SURROGATE SPIKE RESULTS	✓						✓		✓			
MATRIX SPIKE RESULTS	✓						✓		✓			
DUPLICATE ANALYSIS RESULTS	✓											
TARGET COMPOUND MATCHING QUALITY	✓								✓			
TENTATIVELY IDENTIFIED COMPOUNDs	✓											
DFTPP & BFB SPECTRUM TUNE RESULTS	✓											
GC INSTRUMENT PERFORMANCE	✓											
INITIAL CALIBRATIONS	✓											
CONTINUING CALIBRATIONS	✓					✓				✓		
QUANTITATION OF RESULTS	✓											
OTHERS	✓											

COMMENTS:

SAS

BLANK ANALYSIS RESULTS FOR TARGET COMPOUNDS

FRACTION	TYPE	CONC	MATRIX	SAMPLE #	SOURCE OF H_2O	CONTAMINANTS (CONCENTRATION / DETECTION LIMIT)
VOA	hi conc WMC blank			VBlk1	lab	toluene 0.41 ug/l ORIGINAL (Red)
BNA	hi conc extraction blank			EBlk1	lab	di-n-octyl phthalate 14.6 ug/ml
PCB toxaphene	hi conc PCB blank			ABlk1 IMBlk1-3	lab	none detected

LABORATORY REPORTED FIELD BLANK DATA IS COMPARED WITH THE SAMPLE DATA IN A TABULATION FORM WITHIN THE SAMPLE ANALYTICAL DATA SUMMARY. TENTATIVELY IDENTIFIED COMPOUNDS IN BLANKS ARE LISTED ON A SEPARATE FORM

COMMENTS:

(1) RESULT REPORTED BY LABORATORY AND CONFIRMED BY REVIEWER.

(2) RESULT INFERRED FROM QUANTITATION LIST, DIAGNOSTICS, CHROMATOGRAM AND/OR SPECTRA.

ND = none detected

ORIGINAL (Red)

U.S. EPA - CLP

3 AA
STANDARD ADDITION RESULTS

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 12281 SAS No.: SDG No.: MCBD04

Concentration Units: ug/L

EPA Sample No.	An	Dil	0 ADD ABS	1 ADD CON	1 ADD ABS	2 ADD CON	2 ADD ABS	3 ADD CON	3 ADD ABS	Final Conc.	r	Q
MCBD09	AS	1	0.680	10	10.380	20	21.020	30	30.920	0.5	0.9999	
MCBD18	AS	1	35.480	10	44.940	20	55.040	30	67.830	32.4	0.9974	
MCN245	AS	1	18.130	10	24.450	20	30.060	30	36.940	29.2	0.9993	
MCQ102	AS	2	41.370	10	51.670	20	60.880	30	73.570	77.5	0.9978	
MCBD23	PB	10	26.460	10	35.440	20	45.550	30	54.810	276.3	0.9998	
MCN244	PB	~~20~~ 40	15.210	10	24.080	20	34.190	30	41.680	~~343.2~~ 686	0.9985	

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

ORIGINAL (Red)

EPA SAMPLE NO.

CCM17 00137

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Matrix: (soil/water) WATER Lab Sample ID: CCM17

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 52611EC1

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ Date Analyzed: 07/20/89

Column (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CCM17 00420

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Matrix: (soil/water) WATER Lab Sample ID: CCM17

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 52611EJ2

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ dec. ____ Date Extracted: 07/15/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 07/18/89

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	50	U
83-32-9	Acenaphthene	17	
51-28-5	2,4-Dinitrophenol	50	U
100-02-7	4-Nitrophenol	50	U
132-64-9	Dibenzofuran	3	J
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenyl Ether	10	U
86-73-7	Fluorene	3	J
100-01-6	4-Nitroaniline	50	U
534-52-1	4,6-Dinitro-2-methylphenol	50	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenyl Ether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	50	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	20	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	U
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CCM17 00419

ORIGINAL

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Matrix: (soil/water) WATER Lab Sample ID: CCM17

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 52611EJ2

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ dec. ____ Date Extracted: 07/15/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 07/18/89

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
100-51-6	Benzyl Alcohol	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	bis(2-Chloroisopropyl)Ether	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
65-85-0	Benzoic Acid	50	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	50	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	50	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U

ESe 745, 967, 1307, 1596, 2128, 2395

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

CCM17 00421

ORIGINAL (Red)

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Matrix: (soil/water) WATER Lab Sample ID: CCM17

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 52611EJ2

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ dec. ____ Date Extracted: 07/15/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 07/18/89

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.00

Number TICs found: 15

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. ~~289 16-7~~	1,2,4-~~PRITHIOLANE~~ $C_2H_4S_3$	~~14.24~~	854 — 14	J
2. 644-08-6	UNKNOWN 4-methyl-1,1-biphenyl $C_{13}H_{12}$	23.70	1422 20	J
3. 2523-39-9	UNKNOWN $C_{14}H_{12}$ 3-methyl-9H-Fluorene	25.44	1526 8	J
4. 17233-71-5	HEXATHIEPANE CH_2S_6	25.69	1541 40	J
5. 10544-50-0	MOLECULAR SULFUR(S8)	30.47	1828 40	J
6.	UNKNOWN Oxygen cont unknown	32.72	1963 12	J
7.	UNKNOWN unknown HC	34.71	2082 14	J
8.	UNKNOWN unknown HC	36.19	2171 12	J
9. 85-60-9	4,4'-BUTYLIDENEBIS-phenol $C_{26}H_{38}O_2$	37.71	2262 20	J
10.	UNKNOWN HYDROCARBON ~~sat~~ unsat HC, unk struct	41.96	2517 12	J
11.	UNKNOWN ~~HC~~ unsat HC, unk str	42.33	2539 14	J
12.	UNKNOWN HYDROCARBON unsat HC, unk str, unk subst	42.63	2557 10	J
13.	UNKNOWN HYDROCARBON unsat HC	42.91	2574 14	J
14.	UNKNOWN HYDROCARBON sat ~~unsat~~ HC	43.48	2608 12	J
15.	UNKNOWN HYDROCARBON sat HC	44.81	2683 12	J

1,2,4-TRITHIOLANE $C_2H_4S_3$ CAS# 289-16-7 — 14 ISO

4-methyl-1,1-biphenyl $C_{13}H_{12}$ — 20

Sulfur — 40

HEXATHIEPANE CH_2S_6 17233-71-5 — 40

Oxygen cont unknown — 12 unk

4,4-butylidene bis(2-1,1-dimethylethyl)-5-methyl phenol $C_{26}H_{38}O_2$ CAS 85-60-9 — 20

Sat ~~unsat~~ hydrocarbon unk structure — 12, 12, 12 — 36(3)

unsat HC unk str — 14, 10, 14 — 38(3)

3-methyl 9H-Fluorene $C_{14}H_{12}$ — 8 ISO

unknown — 14, 12 — 26(2)

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CCM17 00969

ORIGINAL (Red)

Lab Name: IT CERRITOS Contract: 68-W8-0058

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Matrix: (soil/water) WATER Lab Sample ID: CCM17

Sample wt/vol: 1000 (g/ml) ML Lab File ID: PC-199-1016

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ dec. ____ Date Extracted: 07/14/89

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 07/17/89

GPC Cleanup: (Y/N) N pH: ____ Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/KG) ug/L	Q
319-84-6	alpha-BHC	0.05	U
319-85-7	beta-BHC	0.05	U
319-86-8	delta-BHC	0.05	U
58-89-9	gamma-BHC(Lindane)	0.05	U
76-44-8	Heptachlor	0.05	U
309-00-2	Aldrin	0.05	U
1024-57-3	Heptachlor epoxide	0.05	U
959-98-8	Endosulfan I	0.05	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin Ketone	0.10	U
5103-71-9	alpha-Chlordane	0.50	U
5103-74-2	gamma-Chlordane	0.50	U
8001-35-2	Toxaphene	1.00	U
12674-11-2	Aroclor-1016	0.50	U
11104-28-2	Aroclor-1221	0.50	U
11141-16-5	Aroclor-1232	0.50	U
53469-21-9	Aroclor-1242	0.50	U
12672-29-6	Aroclor-1248	0.50	U
11097-69-1	Aroclor-1254	1.00	U
11096-82-5	Aroclor-1260	1.00	U

mis

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CCM19 00150

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Matrix: (soil/water) WATER Lab Sample ID: CCM19

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 52611EC2

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ Date Analyzed: 07/20/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	3	BJ
67-64-1	Acetone	4	J
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylenes (Total)	5	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

CCM19 00151

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Matrix: (soil/water) WATER Lab Sample ID: CCM19

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 52611EC2

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ Date Analyzed: 07/20/89

Column (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
(Med.)
CCM19 00456

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Matrix: (soil/water) WATER Lab Sample ID: CCM19

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 52611EJ3

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ dec. ____ Date Extracted: 07/15/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 07/18/89

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
100-51-6	Benzyl Alcohol	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	bis(2-Chloroisopropyl)Ether	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
65-85-0	Benzoic Acid	50	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	50	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	50	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ORIGINAL (Red) CCM19 0045

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Matrix: (soil/water) WATER Lab Sample ID: CCM19

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 52611EJ3

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ dec. ____ Date Extracted: 07/15/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 07/18/89

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	50	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	50	U
100-02-7	4-Nitrophenol	50	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	22	
7005-72-3	4-Chlorophenyl-phenyl Ether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	50	U
534-52-1	4,6-Dinitro-2-methylphenol	50	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenyl Ether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	50	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	20	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	U
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

Ise 744, 966, 1308, 1589, 2120

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

CCM19 00458

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Matrix: (soil/water) WATER Lab Sample ID: CCM19

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 52611EJ3

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ dec. ____ Date Extracted: 07/15/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 07/18/89

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.00

Number TICs found: 2

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN ALKANE Still, or Unknown HC	9.60	Sat 576 22	J
2.	UNKNOWN Ansal unknown Oxygen cont	32.72	1913 8	J

Oxygen cont unknown 8

Unknown HC 22

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

ORIGINAL (Red)

EPA SAMPLE NO.

DCM19 00973

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: DCM17

Matrix: (soil/water) WATER Lab Sample ID: DCM19

Sample wt/vol: 1000 (g/ml) ML Lab File ID: PD-198-1017

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ dec. ____ Date Extracted: 07/14/89

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 07/18/89

GPC Cleanup: (Y/N) N pH: ____ Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/KG) ug/L	Q
319-84-6	alpha-BHC	0.05	U
319-85-7	beta-BHC	0.05	U
319-86-8	delta-BHC	0.05	U
58-89-9	gamma-BHC(Lindane)	0.05	U
76-44-8	Heptachlor	0.05	U
309-00-2	Aldrin	0.05	U
1024-57-3	Heptachlor epoxide	0.05	U
959-98-8	Endosulfan I	0.05	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin Ketone	0.10	U
5103-71-9	alpha-Chlordane	0.50	U
5103-74-2	gamma-Chlordane	0.50	U
8001-35-2	Toxaphene	1.00	U
12674-11-2	Aroclor-1016	0.50	U
11104-28-2	Aroclor-1221	0.50	U
11141-16-5	Aroclor-1232	0.50	U
53469-21-9	Aroclor-1242	0.50	U
12672-29-6	Aroclor-1248	0.50	U
11097-69-1	Aroclor-1254	1.00	U
11096-82-5	Aroclor-1260	1.00	U

MMS

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CCM20 00161

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Matrix: (soil/water) WATER Lab Sample ID: CCM20

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 52611EC3

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ Date Analyzed: 07/20/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	3	BJ
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylenes (Total)	5	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

ORIGINAL (Red)

CCM20 0016

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Matrix: (soil/water) WATER Lab Sample ID: CCM20

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 52611EC3

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ Date Analyzed: 07/20/89

Column (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ORIGINAL (Red) CCM20 0047

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Matrix: (soil/water) WATER Lab Sample ID: CCM20

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 52611EJ4

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ dec. ____ Date Extracted: 07/15/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 07/18/89

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
100-51-6	Benzyl Alcohol	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	bis(2-Chloroisopropyl)Ether	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
65-85-0	Benzoic Acid	50	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	50	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	50	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ORIGINAL (Red) CCM20 00475

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Matrix: (soil/water) WATER Lab Sample ID: CCM20

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 52611EJ4

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ dec. ____ Date Extracted: 07/15/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 07/18/89

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		Q
99-09-2	3-Nitroaniline	50	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	50	U
100-02-7	4-Nitrophenol	50	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenyl Ether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	50	U
534-52-1	4,6-Dinitro-2-methylphenol	50	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenyl Ether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	50	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	20	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	U
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

ISe 747, 969, 1310, 1591, 2123, 2397

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

ORIGINAL (Red) 00476

CCM20

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Matrix: (soil/water) WATER Lab Sample ID: CCM20

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 52611EJ4

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ dec. ____ Date Extracted: 07/15/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 07/18/89

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.00

Number TICs found: 2

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.		Q
1.	UNKNOWN ~~ALKANE~~	9.70	582	16	J
2.	UNKNOWN oxygen cont unk	32.76	1965	8	J

unknown 16 oxy cont unk 8

ORIGINAL (Red)

ID

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CCM20

00977

Lab Name: IT CORPITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Matrix: (soil/water) WATER Lab Sample ID: CCM20

Sample wt/vol: 1000 (g/ml) ML Lab File ID: PO-198-1018

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ dec. ____ Date Extracted: 07/14/89

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 07/18/89

GPC Cleanup: (Y/N) N pH: ____ Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/KG) ug/L	Q
319-84-6	alpha-BHC	0.05	U
319-85-7	beta-BHC	0.05	U
319-86-8	delta-BHC	0.05	U
58-89-9	gamma-BHC(Lindane)	0.05	U
76-44-8	Heptachlor	0.05	U
309-00-2	Aldrin	0.05	U
1024-57-3	Heptachlor epoxide	0.05	U
959-98-8	Endosulfan I	0.05	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin Ketone	0.10	U
5103-71-9	alpha-Chlordane	0.50	U
5103-74-2	gamma-Chlordane	0.50	U
8001-35-2	Toxaphene	1.00	U
12674-11-2	Aroclor-1016	0.50	U
11104-28-2	Aroclor-1221	0.50	U
11141-16-5	Aroclor-1232	0.50	U
53469-21-9	Aroclor-1242	0.50	U
12672-29-6	Aroclor-1248	0.50	U
11097-69-1	Aroclor-1254	1.00	U
11096-82-5	Aroclor-1260	1.00	U

mp

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
ORIGINAL (Red)
CCM21 00170

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Matrix: (soil/water) WATER Lab Sample ID: CCM21

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 52611EC4

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ Date Analyzed: 07/20/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	3	BJ
67-64-1	Acetone	2	J
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylenes (Total)	5	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
ORIGINAL (Red)
CCM21 00171

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Matrix: (soil/water) WATER Lab Sample ID: CCM21

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 52611EC4

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ Date Analyzed: 07/20/89

Column (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

ORIGINAL (Red)

EPA SAMPLE NO.

CCM21 0049

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Matrix: (soil/water) WATER Lab Sample ID: CCM21

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 52611EJ5

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ dec. ____ Date Extracted: 07/15/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 07/18/89

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
100-51-6	Benzyl Alcohol	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	bis(2-Chloroisopropyl)Ether	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
65-85-0	Benzoic Acid	50	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	50	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	50	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ORIGINAL (Red) CCM21 00491

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Matrix: (soil/water) WATER Lab Sample ID: CCM21

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 52611EJ5

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ dec. ____ Date Extracted: 07/15/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 07/18/89

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	50	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	50	U
100-02-7	4-Nitrophenol	50	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenyl Ether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	50	U
534-52-1	4,6-Dinitro-2-methylphenol	50	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenyl Ether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	50	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	20	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	U
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

Ise 747, 969, 1309

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

ORIGINAL (Red)

EPA SAMPLE NO.

CCM21 00492

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Matrix: (soil/water) WATER Lab Sample ID: CCM21

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 52611EJ5

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ dec. ____ Date Extracted: 07/15/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 07/18/89

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.00

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN ~~ALKANE~~	9.67	580 34	J
2.	~~TRIMETHYL BENZENE ISOMER~~ blank CCM33	~~12.04~~	~~722~~ ~~20~~	J

Unknown
34

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

ORIGINAL

EPA SAMPLE NO.

CCM21 00981

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: ____ SDG No.: CCM17

Matrix: (soil/water) WATER Lab Sample ID: CCM21

Sample wt/vol: 1000 (g/ml) ML Lab File ID: PU-198-1032

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ dec. ____ Date Extracted: 07/14/89

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 07/18/89

GPC Cleanup: (Y/N) N pH: ____ Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/KG) ug/L	Q
319-84-6	alpha-BHC	0.05	U
319-85-7	beta-BHC	0.05	U
319-86-8	delta-BHC	0.05	U
58-89-9	gamma-BHC(Lindane)	0.05	U
76-44-8	Heptachlor	0.05	U
309-00-2	Aldrin	0.05	U
1024-57-3	Heptachlor epoxide	0.05	U
959-98-8	Endosulfan I	0.05	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin Ketone	0.10	U
5103-71-9	alpha-Chlordane	0.50	U
5103-74-2	gamma-Chlordane	0.50	U
8001-35-2	Toxaphene	1.00	U
12674-11-2	Aroclor-1016	0.50	U
11104-28-2	Aroclor-1221	0.50	U
11141-16-5	Aroclor-1232	0.50	U
53469-21-9	Aroclor-1242	0.50	U
12672-29-6	Aroclor-1248	0.50	U
11097-69-1	Aroclor-1254	1.00	U
11096-82-5	Aroclor-1260	1.00	U

MMS

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

ORIGINAL (Red)

EPA SAMPLE NO.

CCM22 0018

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Matrix: (soil/water) WATER Lab Sample ID: CCM22

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 52611EC5

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ Date Analyzed: 07/20/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	3	BJ
67-64-1	Acetone	2	J
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylenes (Total)	5	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

ORIGINAL (Red)

EPA SAMPLE NO.

CCM22 00183

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Matrix: (soil/water) WATER Lab Sample ID: CCM22

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 52611EC5

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ Date Analyzed: 07/20/89

Column (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

ORIGINAL (Red)

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CCM22 00505

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Matrix: (soil/water) WATER Lab Sample ID: CCM22

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 52611EJ6

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ dec. ____ Date Extracted: 07/15/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 07/18/89

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
100-51-6	Benzyl Alcohol	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	bis(2-Chloroisopropyl)Ether	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
65-85-0	Benzoic Acid	50	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	50	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	50	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

ORIGINAL (Red)

EPA SAMPLE NO.

CCM22 00506

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Matrix: (soil/water) WATER Lab Sample ID: CCM22

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 52611EJ6

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ dec. ____ Date Extracted: 07/15/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 07/18/89

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		Q
99-09-2	3-Nitroaniline	50	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	50	U
100-02-7	4-Nitrophenol	50	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenyl Ether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	50	U
534-52-1	4,6-Dinitro-2-methylphenol	50	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenyl Ether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	50	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	20	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	U
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

ISe 741, 963, 1304

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

ORIGINAL (Red)

EPA SAMPLE NO.

CCM22 00507

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Matrix: (soil/water) WATER Lab Sample ID: CCM22

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 52611EJ6

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ dec. ____ Date Extracted: 07/15/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 07/18/89

GPC Cleanup: (Y/N) N pH: ____ Dilution Factor: 1.00

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN ~~ALKANE~~	9.67	580 26	J
2.	~~TRIMETHYL BENZENE ISOMER~~	~~12.05~~	~~20~~	~~J~~
3. 29424-94-0	TRANS-2,4-DIMETHYL OXETANE	18.14	1086 16	J

trans-2,4-dimethyl Oxetane
$C_5H_{10}O$ CAS 29424-94-0

16

unknown

26

ORIGINAL (Red)

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE No.

CCM22

00985

Lab Name: IT CERITOS Contract: 68-W8-00-8

Lab Code: IT Case No.: 10091 SAS No.: SDG No.: CC117

Matrix: (soil/water) WATER Lab Sample ID: CCM22

Sample wt/vol: 1000 (g/ml) ML Lab File ID: P3-198-1021

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. dec. Date Extracted: 07/14/89

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 07/18/89

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/KG) ug/L	Q
319-84-6	alpha-BHC	0.05	U
319-85-7	beta-BHC	0.05	U
319-86-8	delta-BHC	0.05	U
58-89-9	gamma-BHC(Lindane)	0.05	U
76-44-8	Heptachlor	0.05	U
309-00-2	Aldrin	0.05	U
1024-57-3	Heptachlor epoxide	0.05	U
959-98-8	Endosulfan I	0.05	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin Ketone	0.10	U
5103-71-9	alpha-Chlordane	0.50	U
5103-74-2	gamma-Chlordane	0.50	U
8001-35-2	Toxaphene	1.00	U
12674-11-2	Aroclor-1016	0.50	U
11104-28-2	Aroclor-1221	0.50	U
11141-16-5	Aroclor-1232	0.50	U
53469-21-9	Aroclor-1242	0.50	U
12672-29-6	Aroclor-1248	0.50	U
11097-69-1	Aroclor-1254	1.00	U
11096-82-5	Aroclor-1260	1.00	U

MMS

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CCM23 ORIGINAL (Red) 0193

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Matrix: (soil/water) WATER Lab Sample ID: CCM23

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 52611EC6

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ Date Analyzed: 07/20/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	4	BJ
67-64-1	Acetone	3	J
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylenes (Total)	5	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

ORIGINAL (Red)

EPA SAMPLE NO.

CCM23 0019

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Matrix: (soil/water) WATER Lab Sample ID: CCM23

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 52611EC6

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ Date Analyzed: 07/20/89

Column (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

ORIGINAL (Red)

EPA SAMPLE NO.

CCM23 0052

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Matrix: (soil/water) WATER Lab Sample ID: CCM23

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 52611EJ7

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ dec. ____ Date Extracted: 07/15/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 07/18/89

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
100-51-6	Benzyl Alcohol	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	bis(2-Chloroisopropyl)Ether	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
65-85-0	Benzoic Acid	50	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	50	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	50	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

ORIGINAL (Red)

EPA SAMPLE NO.

CCM23 0052

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Matrix: (soil/water) WATER Lab Sample ID: CCM23

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 52611EJ7

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ dec. ____ Date Extracted: 07/15/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 07/18/89

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	50	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	50	U
100-02-7	4-Nitrophenol	50	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenyl Ether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	50	U
534-52-1	4,6-Dinitro-2-methylphenol	50	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenyl Ether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	50	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	20	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	U
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

Ise 745, 968, 1309

ORIGINAL (Red)

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

CCM23 0052

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Matrix: (soil/water) WATER Lab Sample ID: CCM23

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 52611EJ7

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ dec. ____ Date Extracted: 07/15/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 07/18/89

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.00

Number TICs found: 4

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.		Q
1.	UNKNOWN ~~ALKANE~~	9.62	572	18	J
2.	~~TRIMETHYL BENZENE ISOMER~~ ~~blank~~	~~[illegible]~~	~~719~~	~~18~~	J
3.	UNKNOWN oxygen cont unknown	13.95	837	18	J
4.	UNKNOWN pass N cont aromatic	19.40	1164	10	J

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

ORIGINAL (Red)

EPA SAMPLE NO.

CCM23 009189

Lab Name: IT CORPORATION Contract: 68-03-0048

Lab Code: IT Case No.: 12281 SAS No.: SDG No.: CCM17

Matrix: (soil/water) WATER Lab Sample ID: CCM23

Sample wt/vol: 1000 (g/ml) ML Lab File ID: PP-198-1020

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. dec. Date Extracted: 07/14/89

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 07/18/89

GPC Cleanup: (Y/N) N pH: 7 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/KG) ug/L	Q
319-84-6	alpha-BHC	0.05	U
319-85-7	beta-BHC	0.05	U
319-86-8	delta-BHC	0.05	U
58-89-9	gamma-BHC(Lindane)	0.05	U
76-44-8	Heptachlor	0.05	U
309-00-2	Aldrin	0.05	U
1024-57-3	Heptachlor epoxide	0.05	U
959-98-8	Endosulfan I	0.05	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin Ketone	0.10	U
5103-71-9	alpha-Chlordane	0.50	U
5103-74-2	gamma-Chlordane	0.50	U
8001-35-2	Toxaphene	1.00	U
12674-11-2	Aroclor-1016	0.50	U
11104-28-2	Aroclor-1221	0.50	U
11141-16-5	Aroclor-1232	0.50	U
53469-21-9	Aroclor-1242	0.50	U
12672-29-6	Aroclor-1248	0.50	U
11097-69-1	Aroclor-1254	1.00	U
11096-82-5	Aroclor-1260	1.00	U

CMS

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

ORIGINAL (Red)

EPA SAMPLE NO.

CCM24 00204

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Matrix: (soil/water) WATER Lab Sample ID: CCM24

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 52611EC7

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ Date Analyzed: 07/20/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	4	BJ
67-64-1	Acetone	2	J
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylenes (Total)	5	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

ORIGINAL (Red)

EPA SAMPLE NO.

CCM24 00205

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Matrix: (soil/water) WATER Lab Sample ID: CCM24

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 52611EC7

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ Date Analyzed: 07/20/89

Column (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

ORIGINAL (Red)

EPA SAMPLE NO.

CCM24 00540

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Matrix: (soil/water) WATER Lab Sample ID: CCM24

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 52611EJ8

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ dec. ____ Date Extracted: 07/15/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 07/18/89

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
100-51-6	Benzyl Alcohol	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	bis(2-Chloroisopropyl)Ether	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
65-85-0	Benzoic Acid	50	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	50	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	50	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CCM24 0054

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Matrix: (soil/water) WATER Lab Sample ID: CCM24

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 52611EJ8

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ dec. ____ Date Extracted: 07/15/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 07/18/89

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	50	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	50	U
100-02-7	4-Nitrophenol	50	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenyl Ether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	50	U
534-52-1	4,6-Dinitro-2-methylphenol	50	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenyl Ether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	50	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	20	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	U
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

ISe 745, 969, 1307

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

ORIGINAL (Red)

EPA SAMPLE NO.

CCM24 00542

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Matrix: (soil/water) WATER Lab Sample ID: CCM24

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 52611EJ8

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ dec. ____ Date Extracted: 07/15/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 07/18/89

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.00

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN ~~ALKANE~~	9.62	572 12	J
2.	UNKNOWN Oxygen cont aromatics poss phenol	19.42	1165 14	J

unknown
12

Oxygen cont aromatic poss phenol
14

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

ORIGINAL (Red)

EPA SAMPLE NO.

CCM24 0099

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Matrix: (soil/water) WATER Lab Sample ID: CCM24

Sample wt/vol: 1000 (g/ml) ML Lab File ID: PO-198-1023

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ dec. ____ Date Extracted: 07/14/89

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 07/18/89

GPC Cleanup: (Y/N) N pH: ____ Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/KG) ug/L	Q
319-84-6	alpha-BHC	0.05	U
319-85-7	beta-BHC	0.05	U
319-86-8	delta-BHC	0.05	U
58-89-9	gamma-BHC(Lindane)	0.05	U
76-44-8	Heptachlor	0.05	U
309-00-2	Aldrin	0.05	U
1024-57-3	Heptachlor epoxide	0.05	U
959-98-8	Endosulfan I	0.05	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin Ketone	0.10	U
5103-71-9	alpha-Chlordane	0.50	U
5103-74-2	gamma-Chlordane	0.50	U
8001-35-2	Toxaphene	1.00	U
12674-11-2	Aroclor-1016	0.50	U
11104-28-2	Aroclor-1221	0.50	U
11141-16-5	Aroclor-1232	0.50	U
53469-21-9	Aroclor-1242	0.50	U
12672-29-6	Aroclor-1248	0.50	U
11097-69-1	Aroclor-1254	1.00	U
11096-82-5	Aroclor-1260	1.00	U

MMS

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

ORIGINAL (Red)

EPA SAMPLE N

CCM25 0021

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Matrix: (soil/water) WATER Lab Sample ID: CCM25

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 52611EC8

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ Date Analyzed: 07/20/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	4	BJ
67-64-1	Acetone	2	J
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylenes (Total)	5	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

ORIGINAL (Red)

EPA SAMPLE NO

CCM25 0021

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Matrix: (soil/water) WATER Lab Sample ID: CCM25

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 52611EC8

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ Date Analyzed: 07/20/89

Column (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

ORIGINAL (Red)

EPA SAMPLE NO.

CCM25 00555

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: SDG No.: CCM17

Matrix: (soil/water) WATER Lab Sample ID: CCM25

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 52611EJ9

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. dec. Date Extracted: 07/15/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 07/18/89

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
100-51-6	Benzyl Alcohol	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	bis(2-Chloroisopropyl)Ether	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
65-85-0	Benzoic Acid	50	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	50	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	50	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CCM25 00556

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Matrix: (soil/water) WATER Lab Sample ID: CCM25

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 52611EJ9

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ dec. ____ Date Extracted: 07/15/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 07/18/89

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	50	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	50	U
100-02-7	4-Nitrophenol	50	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenyl Ether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	50	U
534-52-1	4,6-Dinitro-2-methylphenol	50	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenyl Ether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	50	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	20	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	U
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

ORIGINAL (Red)

EPA SAMPLE NO.

CCM25RE 00575

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Matrix: (soil/water) WATER Lab Sample ID: CCM25RE

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 52611EI7

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ dec. ____ Date Extracted: 07/15/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 07/18/89

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
100-51-6	Benzyl Alcohol	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	bis(2-Chloroisopropyl)Ether	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
65-85-0	Benzoic Acid	50	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	50	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	50	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

ORIGINAL (Red)

EPA SAMPLE NO.

CCM25RE 0057

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Matrix: (soil/water) WATER Lab Sample ID: CCM25RE

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 52611EI7

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ dec. ____ Date Extracted: 07/15/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 07/18/89

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	50	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	50	U
100-02-7	4-Nitrophenol	50	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenyl Ether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	50	U
534-52-1	4,6-Dinitro-2-methylphenol	50	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenyl Ether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	50	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	20	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	U
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

~~897~~ 150 160 180 200 270 2-6-0
Ise 1743, 965, 1307, 1588, 2117 2394

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

ORIGINAL (Red)

EPA SAMPLE N

CCM25 005

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Matrix: (soil/water) WATER Lab Sample ID: CCM25

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 52611EJ9

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ dec. ____ Date Extracted: 07/15/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 07/18/89

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.00

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 620-02-0	5-METHYL-2-FURANCARBOXALDEHYDE $C_6H_6O_2$	11.24	674 22	~~J~~ conc reported from reanalysis
2.	~~TRIMETHYL BENZENE ISOMER~~ blank acid	~~12.04~~	~~722~~ ~~170~~	J
3.	UNKNOWN Oxygen cont aromatic, poss phenol	19.40	1164 ~~10~~	~~J~~
4. 57-10-3	HEXADECANOIC ACID $C_{16}H_{32}O_2$	28.89	1733 26	J
5.	UNKNOWN unsaturated, prob cyclic, HC	31.22	1873 40	J

5-methyl-2-Furancarboxaldehyde
$C_6H_6O_2$ CAS 620-02-0
~~22~~ conc reported from reanalysis

Oxygen cont aromatic, poss phenol
~~16~~ unk
conc reported from reanal

hexadecanoic acid $C_{16}H_{32}O_2$
CAS# 57-10-3
26

unsat prob cyclic, HC
40

RSe 594, 806, 1122, ~~2131~~ 1388 1882, 2131

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

ORIGINAL (Red) CCM25RE00577

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Matrix: (soil/water) WATER Lab Sample ID: CCM25RE

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 52611EI7

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ dec. ____ Date Extracted: 07/15/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 07/18/89

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.00

Number TICs found: 12

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.		Q
1.	UNKNOWN unknown	8.08	485	14	J
2.	UNKNOWN 1-methyl-3-propylcyclohexane $C_{10}H_{20}$	8.57	514	8	J
3. 620-02-0	5-METHYL-2-FURANCARBOXALDEHYDE $C_6H_6O_2$	8.89	533	40	J
4.	~~TRIMETHYL BENZENE ISOMER~~ blank cont	~~9.59~~	~~575~~	~~120~~	~~J~~
5.	UNKNOWN 1-methylene-3-(1-methylethylidene) C_9H_{14}	9.74	584	10	J
6.	UNKNOWN 6-methyl-5-methylene-2-heptanone $C_9H_{16}O$ Cyclopentane	11.55	693	20	J
7.	UNKNOWN unknown	15.42	925	20	J
8.	UNKNOWN oxygen cont aromatic, poss. phenol	16.59	995	40	J
9.	UNKNOWN oxygen cont aromatic, poss phenol	16.74	1004	14	J
10.	UNKNOWN unknown	24.62	1477	12	J
11. 57-10-3	UNKNOWN hexadecanoic acid $C_{16}H_{32}O_2$	25.57	1534	~~12~~	~~J~~ Conc taken from orig.
12.	UNKNOWN Unknown	26.36	1581	8	J

Unknown
14
20
12
8
54(4) tot unk

6-methyl-5-methylene-2-heptanone $C_9H_{16}O$
20

1-methyl-3-propylcyclohexane
$C_{10}H_{20}$
8

5-methyl-2-Furancarboxaldehyde
$C_6H_6O_2$
40

oxygen cont aromatic, possible phenol
40
14
54(2)

hexadecanoic acid $C_{16}H_{32}O_2$
~~12~~ conc taken from original analysis

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

ORIGINAL (Red)

EPA SAMPLE NO

CCM26 0015

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM26

Matrix: (soil/water) SOIL Lab Sample ID: CCM26

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 52610EC1

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. 63 Date Analyzed: 07/19/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND		Q
74-87-3	Chloromethane	27	U
74-83-9	Bromomethane	27	U
75-01-4	Vinyl Chloride	27	U
75-00-3	Chloroethane	27	U
75-09-2	Methylene Chloride	17	B
67-64-1	Acetone	27	U
75-15-0	Carbon Disulfide	14	U
75-35-4	1,1-Dichloroethene	14	U
75-34-3	1,1-Dichloroethane	14	U
540-59-0	1,2-Dichloroethene (total)	14	U
67-66-3	Chloroform	14	U
107-06-2	1,2-Dichloroethane	14	U
78-93-3	2-Butanone	27	U
71-55-6	1,1,1-Trichloroethane	14	U
56-23-5	Carbon Tetrachloride	14	U
108-05-4	Vinyl Acetate	27	U
75-27-4	Bromodichloromethane	14	U
78-87-5	1,2-Dichloropropane	14	U
10061-01-5	cis-1,3-Dichloropropene	14	U
79-01-6	Trichloroethene	14	U
124-48-1	Dibromochloromethane	14	U
79-00-5	1,1,2-Trichloroethane	14	U
71-43-2	Benzene	14	U
10061-02-6	trans-1,3-Dichloropropene	14	U
75-25-2	Bromoform	14	U
108-10-1	4-Methyl-2-Pentanone	27	U
591-78-6	2-Hexanone	27	U
127-18-4	Tetrachloroethene	14	U
79-34-5	1,1,2,2-Tetrachloroethane	14	U
108-88-3	Toluene	14	U
108-90-7	Chlorobenzene	14	U
100-41-4	Ethylbenzene	14	U
100-42-5	Styrene	14	U
1330-20-7	Xylenes (Total)	14	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

ORIGINAL (Red)

EPA SAMPLE NO.

CCM26 0015

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM26

Matrix: (soil/water) SOIL Lab Sample ID: CCM26

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 52610EC1

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. 63 Date Analyzed: 07/19/89

Column (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

ORIGINAL (Red)

EPA SAMPLE NO.

CCM26 0042

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM26

Matrix: (soil/water) SOIL Lab Sample ID: CCM26

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 52610EK2

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ dec. 49 Date Extracted: 07/20/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 07/21/89

GPC Cleanup: (Y/N) N pH: 7.1 Dilution Factor: 10.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	6500	U
111-44-4	bis(2-Chloroethyl)Ether	6500	U
95-57-8	2-Chlorophenol	6500	U
541-73-1	1,3-Dichlorobenzene	6500	U
106-46-7	1,4-Dichlorobenzene	6500	U
100-51-6	Benzyl Alcohol	6500	U
95-50-1	1,2-Dichlorobenzene	6500	U
95-48-7	2-Methylphenol	6500	U
108-60-1	bis(2-Chloroisopropyl)Ether	6500	U
106-44-5	4-Methylphenol	6500	U
621-64-7	N-Nitroso-di-n-propylamine	6500	U
67-72-1	Hexachloroethane	6500	U
98-95-3	Nitrobenzene	6500	U
78-59-1	Isophorone	6500	U
88-75-5	2-Nitrophenol	6500	U
105-67-9	2,4-Dimethylphenol	6500	U
65-85-0	Benzoic Acid	31000	U
111-91-1	bis(2-Chloroethoxy)methane	6500	U
120-83-2	2,4-Dichlorophenol	6500	U
120-82-1	1,2,4-Trichlorobenzene	6500	U
91-20-3	Naphthalene	6500	U
106-47-8	4-Chloroaniline	6500	U
87-68-3	Hexachlorobutadiene	6500	U
59-50-7	4-Chloro-3-methylphenol	6500	U
91-57-6	2-Methylnaphthalene	6500	U
77-47-4	Hexachlorocyclopentadiene	6500	U
88-06-2	2,4,6-Trichlorophenol	6500	U
95-95-4	2,4,5-Trichlorophenol	31000	U
91-58-7	2-Chloronaphthalene	6500	U
88-74-4	2-Nitroaniline	31000	U
131-11-3	Dimethylphthalate	6500	U
208-96-8	Acenaphthylene	6500	U
606-20-2	2,6-Dinitrotoluene	6500	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

ORIGINAL (Red)

EPA SAMPLE NO.

CCM26 00423

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM26

Matrix: (soil/water) SOIL Lab Sample ID: CCM26

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 52610EK2

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ dec. 49 Date Extracted: 07/20/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 07/21/89

GPC Cleanup: (Y/N) N pH: 7.1 Dilution Factor: 10.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	31000	U
83-32-9	Acenaphthene	6500	U
51-28-5	2,4-Dinitrophenol	31000	U
100-02-7	4-Nitrophenol	31000	U
132-64-9	Dibenzofuran	6500	U
121-14-2	2,4-Dinitrotoluene	6500	U
84-66-2	Diethylphthalate	6500	U
7005-72-3	4-Chlorophenyl-phenyl Ether	6500	U
86-73-7	Fluorene	6500	U
100-01-6	4-Nitroaniline	31000	U
534-52-1	4,6-Dinitro-2-methylphenol	31000	U
86-30-6	N-Nitrosodiphenylamine (1)	6500	U
101-55-3	4-Bromophenyl-phenyl Ether	6500	U
118-74-1	Hexachlorobenzene	6500	U
87-86-5	Pentachlorophenol	31000	U
85-01-8	Phenanthrene	670	J
120-12-7	Anthracene	6500	U
84-74-2	Di-n-butylphthalate	6500	U
206-44-0	Fluoranthene	1200	J
129-00-0	Pyrene	1300	J
85-68-7	Butylbenzylphthalate	6500	U
91-94-1	3,3'-Dichlorobenzidine	13000	U
56-55-3	Benzo(a)anthracene	6500	U
218-01-9	Chrysene	740	J
117-81-7	bis(2-Ethylhexyl)phthalate	6500	U
117-84-0	Di-n-octylphthalate	6500	U
205-99-2	Benzo(b)fluoranthene	6500	U
207-08-9	Benzo(k)fluoranthene	6500	U
50-32-8	Benzo(a)pyrene	6500	U
193-39-5	Indeno(1,2,3-cd)pyrene	6500	U
53-70-3	Dibenz(a,h)anthracene	6500	U
191-24-2	Benzo(g,h,i)perylene	6500	U

(1) - Cannot be separated from Diphenylamine

ISE 3470

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

ORIGINAL (Red)

EPA SAMPLE NO.

0042

CCM26

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM26

Matrix: (soil/water) SOIL Lab Sample ID: CCM26

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 52610EK2

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ dec. 49 Date Extracted: 07/20/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 07/21/89

GPC Cleanup: (Y/N) N pH: 7.1 Dilution Factor: 10.00

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN HYDROCARBON UAE	33.69	3490 2600	J

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

ORIGINAL (Red)

EPA SAMPLE NO.

CCM26 01136

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12781 SAS No.: SDG No.: CCM26

Matrix: (soil/water) SOIL Lab Sample ID: CCM26 Y

Sample wt/vol: 30.1 (g/ml) G Lab File ID: PD-201-1024

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. dec. 49 Date Extracted: 07/20/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 07/21/89

GPC Cleanup: (Y/N) N pH: 7.1 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/KG) ug/KG	Q
319-84-6	alpha-BHC	16	U
319-85-7	beta-BHC	16	U
319-86-8	delta-BHC	16	U
58-89-9	gamma-BHC(Lindane)	16	U
76-44-8	Heptachlor	16	U
309-00-2	Aldrin	16	U
1024-57-3	Heptachlor epoxide	16	U
959-98-8	Endosulfan I	16	U
60-57-1	Dieldrin	31	U
72-55-9	4,4'-DDE	31	U
72-20-8	Endrin	31	U
33213-65-9	Endosulfan II	31	U
72-54-8	4,4'-DDD	31	U
1031-07-8	Endosulfan sulfate	31	U
50-29-3	4,4'-DDT	31	U
72-43-5	Methoxychlor	160	U
53494-70-5	Endrin Ketone	31	U
5103-71-9	alpha-Chlordane	160	U
5103-74-2	gamma-Chlordane	160	U
8001-35-2	Toxaphene	310	U
12674-11-2	Aroclor-1016	160	U
11104-28-2	Aroclor-1221	160	U
11141-16-5	Aroclor-1232	160	U
53469-21-9	Aroclor-1242	160	U
12672-29-6	Aroclor-1248	160	U
11097-69-1	Aroclor-1254	310	U
11096-82-5	Aroclor-1260	310	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

ORIGINAL (Red)

EPA SAMPLE NO.

CCM27 00162

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: SDG No.: CCM26

Matrix: (soil/water) SOIL Lab Sample ID: CCM27

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 52610EC4

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. 42 Date Analyzed: 07/19/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	17	U
74-83-9	Bromomethane	17	U
75-01-4	Vinyl Chloride	17	U
75-00-3	Chloroethane	17	U
75-09-2	Methylene Chloride	24	B
67-64-1	Acetone	6	J
75-15-0	Carbon Disulfide	9	U
75-35-4	1,1-Dichloroethene	9	U
75-34-3	1,1-Dichloroethane	9	U
540-59-0	1,2-Dichloroethene (total)	9	U
67-66-3	Chloroform	9	U
107-06-2	1,2-Dichloroethane	9	U
78-93-3	2-Butanone	17	U
71-55-6	1,1,1-Trichloroethane	9	U
56-23-5	Carbon Tetrachloride	9	U
108-05-4	Vinyl Acetate	17	U
75-27-4	Bromodichloromethane	9	U
78-87-5	1,2-Dichloropropane	9	U
10061-01-5	cis-1,3-Dichloropropene	9	U
79-01-6	Trichloroethene	9	U
124-48-1	Dibromochloromethane	9	U
79-00-5	1,1,2-Trichloroethane	9	U
71-43-2	Benzene	9	U
10061-02-6	trans-1,3-Dichloropropene	9	U
75-25-2	Bromoform	9	U
108-10-1	4-Methyl-2-Pentanone	17	U
591-78-6	2-Hexanone	17	U
127-18-4	Tetrachloroethene	9	U
79-34-5	1,1,2,2-Tetrachloroethane	9	U
108-88-3	Toluene	9	U
108-90-7	Chlorobenzene	9	U
100-41-4	Ethylbenzene	9	U
100-42-5	Styrene	9	U
1330-20-7	Xylenes (Total)	9	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

ORIGINAL (Red)

CCM27 0016

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM26

Matrix: (soil/water) SOIL Lab Sample ID: CCM27

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 52610EC4

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. 42 Date Analyzed: 07/19/89

Column (pack/cap) PACK Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

ORIGINAL (Red)

EPA SAMPLE NO.

CCM27 00446

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: SDG No.: CCM26

Matrix: (soil/water) SOIL Lab Sample ID: CCM27

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 52610EK3

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. 42 dec. Date Extracted: 07/20/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 07/21/89

GPC Cleanup: (Y/N) N pH: 7.1 Dilution Factor: 10.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	5700	U
111-44-4	bis(2-Chloroethyl)Ether	5700	U
95-57-8	2-Chlorophenol	5700	U
541-73-1	1,3-Dichlorobenzene	5700	U
106-46-7	1,4-Dichlorobenzene	5700	U
100-51-6	Benzyl Alcohol	5700	U
95-50-1	1,2-Dichlorobenzene	5700	U
95-48-7	2-Methylphenol	5700	U
108-60-1	bis(2-Chloroisopropyl)Ether	5700	U
106-44-5	4-Methylphenol	5700	U
621-64-7	N-Nitroso-di-n-propylamine	5700	U
67-72-1	Hexachloroethane	5700	U
98-95-3	Nitrobenzene	5700	U
78-59-1	Isophorone	5700	U
88-75-5	2-Nitrophenol	5700	U
105-67-9	2,4-Dimethylphenol	5700	U
65-85-0	Benzoic Acid	28000	U
111-91-1	bis(2-Chloroethoxy)methane	5700	U
120-83-2	2,4-Dichlorophenol	5700	U
120-82-1	1,2,4-Trichlorobenzene	5700	U
91-20-3	Naphthalene	5700	U
106-47-8	4-Chloroaniline	5700	U
87-68-3	Hexachlorobutadiene	5700	U
59-50-7	4-Chloro-3-methylphenol	5700	U
91-57-6	2-Methylnaphthalene	5700	U
77-47-4	Hexachlorocyclopentadiene	5700	U
88-06-2	2,4,6-Trichlorophenol	5700	U
95-95-4	2,4,5-Trichlorophenol	28000	U
91-58-7	2-Chloronaphthalene	5700	U
88-74-4	2-Nitroaniline	28000	U
131-11-3	Dimethylphthalate	5700	U
208-96-8	Acenaphthylene	5700	U
606-20-2	2,6-Dinitrotoluene	5700	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

ORIGINAL (Red)

EPA SAMPLE NO.

CCM27

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM26

Matrix: (soil/water) SOIL Lab Sample ID: CCM27

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 52610EK3

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. 42 dec. ____ Date Extracted: 07/20/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 07/21/89

GPC Cleanup: (Y/N) N pH: 7.1 Dilution Factor: 10.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	28000	U
83-32-9	Acenaphthene	5700	U
51-28-5	2,4-Dinitrophenol	28000	U
100-02-7	4-Nitrophenol	28000	U
132-64-9	Dibenzofuran	5700	U
121-14-2	2,4-Dinitrotoluene	5700	U
84-66-2	Diethylphthalate	5700	U
7005-72-3	4-Chlorophenyl-phenyl Ether	5700	U
86-73-7	Fluorene	5700	U
100-01-6	4-Nitroaniline	28000	U
534-52-1	4,6-Dinitro-2-methylphenol	28000	U
86-30-6	N-Nitrosodiphenylamine (1)	5700	U
101-55-3	4-Bromophenyl-phenyl Ether	5700	U
118-74-1	Hexachlorobenzene	5700	U
87-86-5	Pentachlorophenol	28000	U
85-01-8	Phenanthrene	5700	U
120-12-7	Anthracene	5700	U
84-74-2	Di-n-butylphthalate	5700	U
206-44-0	Fluoranthene	1000	J
129-00-0	Pyrene	1000	J
85-68-7	Butylbenzylphthalate	5700	U
91-94-1	3,3'-Dichlorobenzidine	11000	U
56-55-3	Benzo(a)anthracene	5700	U
218-01-9	Chrysene	620	J
117-81-7	bis(2-Ethylhexyl)phthalate	5700	U
117-84-0	Di-n-octylphthalate	5700	U
205-99-2	Benzo(b)fluoranthene	5700	U
207-08-9	Benzo(k)fluoranthene	5700	U
50-32-8	Benzo(a)pyrene	5700	U
193-39-5	Indeno(1,2,3-cd)pyrene	5700	U
53-70-3	Dibenz(a,h)anthracene	5700	U
191-24-2	Benzo(g,h,i)perylene	5700	U

(1) - Cannot be separated from Diphenylamine

ISe 795, 1191, 1748, 2207, 3049, 3469

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

ORIGINAL (Red)

EPA SAMPLE NO.

CCM27 00448

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM26

Matrix: (soil/water) SOIL Lab Sample ID: CCM27

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 52610EK3

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. 42 dec. ____ Date Extracted: 07/20/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 07/21/89

GPC Cleanup: (Y/N) N pH: 7.1 Dilution Factor: 10.00

Number TICs found: 7

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC. Scan	EST. CONC.	Q
1. 10544-50-0	MOL. SULFUR(S8)	24.60	2550	2300	J
2.	UNKNOWN HYDROCARBON SHC	29.91	2699	4000	J
3.	UNKNOWN HYDROCARBON SHC	31.87	3302	2900	J
4.	UNKNOWN HYDROCARBON UHC	33.69	3490	3400	J
5.	UNKNOWN HYDROCARBON UHC	35.47	3676	2300	J
6. 55515-18-9	UNKNOWN LANOST-7-en-3-one ($C_{30}H_{50}O$)	37.36	3871	4000	J
7. 79-62-9	UNKNOWN LANOST-8-En-3-01 ($C_{30}H_{52}O$)	37.71	3907	2300	J

Sulfur	SHC	UHC	LANOST-7en-3-one $C_{30}H_{50}O$	LANOST-8en-3-01 $C_{30}H_{52}O$
2300	4000	3400		
	2900	2300		
	6900(2)	5700(2)	4000	2300

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

ORIGINAL (Red)

EPA SAMPLE NO.

CCM27 01146

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: SDG No.: CCM26

Matrix: (soil/water) SOIL Lab Sample ID: CCM27 Y

Sample wt/vol: 30.0 (g/ml) G Lab File ID: PO-201-1095

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. 42 dec. Date Extracted: 07/20/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 07/21/89

GPC Cleanup: (Y/N) N pH: 7.1 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/KG) ug/KG	Q
319-84-6	alpha-BHC	14	U
319-85-7	beta-BHC	14	U
319-86-8	delta-BHC	14	U
58-89-9	gamma-BHC(Lindane)	14	U
76-44-8	Heptachlor	14	U
309-00-2	Aldrin	14	U
1024-57-3	Heptachlor epoxide	14	U
959-98-8	Endosulfan I	14	U
60-57-1	Dieldrin	28	U
72-55-9	4,4'-DDE	28	U
72-20-8	Endrin	28	U
33213-65-9	Endosulfan II	28	U
72-54-8	4,4'-DDD	28	U
1031-07-8	Endosulfan sulfate	28	U
50-29-3	4,4'-DDT	28	U
72-43-5	Methoxychlor	140	U
53494-70-5	Endrin Ketone	28	U
5103-71-9	alpha-Chlordane	140	U
5103-74-2	gamma-Chlordane	140	U
8001-35-2	Toxaphene	280	U
12674-11-2	Aroclor-1016	140	U
11104-28-2	Aroclor-1221	140	U
11141-16-5	Aroclor-1232	140	U
53469-21-9	Aroclor-1242	140	U
12672-29-6	Aroclor-1248	140	U
11097-69-1	Aroclor-1254	280	U
11096-82-5	Aroclor-1260	280	U

MRS

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

ORIGINAL (Red)

EPA SAMPLE NO

CCM28 001

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM26

Matrix: (soil/water) SOIL Lab Sample ID: CCM28

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 52610EC6

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. 59 Date Analyzed: 07/19/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	24	U
74-83-9	Bromomethane	24	U
75-01-4	Vinyl Chloride	24	U
75-00-3	Chloroethane	24	U
75-09-2	Methylene Chloride	23	B
67-64-1	Acetone	3	J
75-15-0	Carbon Disulfide	12	U
75-35-4	1,1-Dichloroethene	12	U
75-34-3	1,1-Dichloroethane	12	U
540-59-0	1,2-Dichloroethene (total)	12	U
67-66-3	Chloroform	12	U
107-06-2	1,2-Dichloroethane	12	U
78-93-3	2-Butanone	24	U
71-55-6	1,1,1-Trichloroethane	12	U
56-23-5	Carbon Tetrachloride	12	U
108-05-4	Vinyl Acetate	24	U
75-27-4	Bromodichloromethane	12	U
78-87-5	1,2-Dichloropropane	12	U
10061-01-5	cis-1,3-Dichloropropene	12	U
79-01-6	Trichloroethene	12	U
124-48-1	Dibromochloromethane	12	U
79-00-5	1,1,2-Trichloroethane	12	U
71-43-2	Benzene	12	U
10061-02-6	trans-1,3-Dichloropropene	12	U
75-25-2	Bromoform	12	U
108-10-1	4-Methyl-2-Pentanone	24	U
591-78-6	2-Hexanone	24	U
127-18-4	Tetrachloroethene	12	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
108-88-3	Toluene	12	U
108-90-7	Chlorobenzene	12	U
100-41-4	Ethylbenzene	12	U
100-42-5	Styrene	12	U
1330-20-7	Xylenes (Total)	12	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

ORIGINAL (Red)

EPA SAMPLE NO.

CCM28 00174

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM26

Matrix: (soil/water) SOIL Lab Sample ID: CCM28

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 52610EC6

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. 59 Date Analyzed: 07/19/89

Column (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

ORIGINAL (Red)

EPA SAMPLE NO.

CCM28 00471

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM26

Matrix: (soil/water) SOIL Lab Sample ID: CCM28

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 52610EK10

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ dec. 28 Date Extracted: 07/20/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 07/25/89

GPC Cleanup: (Y/N) N pH: 7.2 Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	920	U
111-44-4	bis(2-Chloroethyl)Ether	920	U
95-57-8	2-Chlorophenol	920	U
541-73-1	1,3-Dichlorobenzene	920	U
106-46-7	1,4-Dichlorobenzene	920	U
100-51-6	Benzyl Alcohol	920	U
95-50-1	1,2-Dichlorobenzene	920	U
95-48-7	2-Methylphenol	920	U
108-60-1	bis(2-Chloroisopropyl)Ether	920	U
106-44-5	4-Methylphenol	920	U
621-64-7	N-Nitroso-di-n-propylamine	920	U
67-72-1	Hexachloroethane	920	U
98-95-3	Nitrobenzene	920	U
78-59-1	Isophorone	920	U
88-75-5	2-Nitrophenol	920	U
105-67-9	2,4-Dimethylphenol	920	U
65-85-0	Benzoic Acid	4400	U
111-91-1	bis(2-Chloroethoxy)methane	920	U
120-83-2	2,4-Dichlorophenol	920	U
120-82-1	1,2,4-Trichlorobenzene	920	U
91-20-3	Naphthalene	920	U
106-47-8	4-Chloroaniline	920	U
87-68-3	Hexachlorobutadiene	920	U
59-50-7	4-Chloro-3-methylphenol	920	U
91-57-6	2-Methylnaphthalene	920	U
77-47-4	Hexachlorocyclopentadiene	920	U
88-06-2	2,4,6-Trichlorophenol	920	U
95-95-4	2,4,5-Trichlorophenol	4400	U
91-58-7	2-Chloronaphthalene	920	U
88-74-4	2-Nitroaniline	4400	U
131-11-3	Dimethylphthalate	920	U
208-96-8	Acenaphthylene	920	U
606-20-2	2,6-Dinitrotoluene	920	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

ORIGINAL (Red)

EPA SAMPLE NO.

CCM28 00475

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: SDG No.: CCM26

Matrix: (soil/water) SOIL Lab Sample ID: CCM28

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 52610EK10

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. dec. 28 Date Extracted: 07/20/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 07/25/89

GPC Cleanup: (Y/N) N pH: 7.2 Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	4400	U
83-32-9	Acenaphthene	920	U
51-28-5	2,4-Dinitrophenol	4400	U
100-02-7	4-Nitrophenol	4400	U
132-64-9	Dibenzofuran	920	U
121-14-2	2,4-Dinitrotoluene	920	U
84-66-2	Diethylphthalate	920	U
7005-72-3	4-Chlorophenyl-phenyl Ether	920	U
86-73-7	Fluorene	920	U
100-01-6	4-Nitroaniline	4400	U
534-52-1	4,6-Dinitro-2-methylphenol	4400	U
86-30-6	N-Nitrosodiphenylamine (1)	920	U
101-55-3	4-Bromophenyl-phenyl Ether	920	U
118-74-1	Hexachlorobenzene	920	U
87-86-5	Pentachlorophenol	4400	U
85-01-8	Phenanthrene	410	J
120-12-7	Anthracene	920	U
84-74-2	Di-n-butylphthalate	920	U
206-44-0	Fluoranthene	620	J
129-00-0	Pyrene	560	J
85-68-7	Butylbenzylphthalate	920	U
91-94-1	3,3'-Dichlorobenzidine	1800	U
56-55-3	Benzo(a)anthracene	320	J
218-01-9	Chrysene	350	J
117-81-7	bis(2-Ethylhexyl)phthalate	280	J
117-84-0	Di-n-octylphthalate	920	U
205-99-2	Benzo(b)fluoranthene	300	J
207-08-9	Benzo(k)fluoranthene	920	U
50-32-8	Benzo(a)pyrene	290	J
193-39-5	Indeno(1,2,3-cd)pyrene	920	U
53-70-3	Dibenz(a,h)anthracene	920	U
191-24-2	Benzo(g,h,i)perylene	200	J

(1) - Cannot be separated from Diphenylamine

Ise 788, 1182, 1739, 2196, 3036, 3456

ORIGINAL (Red)

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

CCM28

00476

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM26

Matrix: (soil/water) SOIL Lab Sample ID: CCM28

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 52610EK10

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ dec. 28 Date Extracted: 07/20/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 07/25/89

GPC Cleanup: (Y/N) N pH: 7.2 Dilution Factor: 2.00

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.		Q
1.	~~UNKNOWN Oxygen cont HC blank SO2K2~~	~~5.18~~	~~537~~	~~370~~	J
2. 10544-50-0	UNKNOWN Sulfur (S_8)	24.50	2539	740	J
3.	UNKNOWN HYDROCARBON UHC	33.56	3472	370	J
4.	UNKNOWN Cholesterol derivative	35.17	3644	460	J
5. 57-88-5	CHOLESTEROL $C_{27}H_{46}O$	35.54	3682	650	J

Sulfur	Cholesterol ($C_{27}H_{46}O$)	Cholesterol deriv	Oxygen cont HC	Unsat HC
740	650	460	370	370

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

ORIGINAL (Red)

EPA SAMPLE NO.

CCM28 01156

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: SDG No.: CCM26

Matrix: (soil/water) SOIL Lab Sample ID: CCM28 Y

Sample wt/vol: 30.0 (g/ml) G Lab File ID: PD-201-1026

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. dec. 28 Date Extracted: 07/20/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 07/21/89

GPC Cleanup: (Y/N) N pH: 7.2 Dilution Factor: 1.0

CONCENTRATION UNITS: (ug/L or ug/KG) ug/KG

CAS NO.	COMPOUND		Q
319-84-6	alpha-BHC	11	U
319-85-7	beta-BHC	11	U
319-86-8	delta-BHC	11	U
58-89-9	gamma-BHC(Lindane)	11	U
76-44-8	Heptachlor	11	U
309-00-2	Aldrin	11	U
1024-57-3	Heptachlor epoxide	11	U
959-98-8	Endosulfan I	11	U
60-57-1	Dieldrin	22	U
72-55-9	4,4'-DDE	22	U
72-20-8	Endrin	22	U
33213-65-9	Endosulfan II	22	U
72-54-8	4,4'-DDD	22	U
1031-07-8	Endosulfan sulfate	22	U
50-29-3	4,4'-DDT	22	U
72-43-5	Methoxychlor	110	U
53494-70-5	Endrin Ketone	22	U
5103-71-9	alpha-Chlordane	110	U
5103-74-2	gamma-Chlordane	110	U
8001-35-2	Toxaphene	220	U
12674-11-2	Aroclor-1016	110	U
11104-28-2	Aroclor-1221	110	U
11141-16-5	Aroclor-1232	110	U
53469-21-9	Aroclor-1242	110	U
12672-29-6	Aroclor-1248	110	U
11097-69-1	Aroclor-1254	220	U
11096-82-5	Aroclor-1260	220	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

ORIGINAL (Red)

EPA SAMPLE NO.

CCM29 00184

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM26

Matrix: (soil/water) SOIL Lab Sample ID: CCM29

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 52610EC2

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. 16 Date Analyzed: 07/19/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	12	U
74-83-9	Bromomethane	12	U
75-01-4	Vinyl Chloride	12	U
75-00-3	Chloroethane	12	U
75-09-2	Methylene Chloride	8	B
67-64-1	Acetone	12	U
75-15-0	Carbon Disulfide	6	U
75-35-4	1,1-Dichloroethene	6	U
75-34-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene (total)	6	U
67-66-3	Chloroform	6	U
107-06-2	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	12	U
71-55-6	1,1,1-Trichloroethane	6	U
56-23-5	Carbon Tetrachloride	6	U
108-05-4	Vinyl Acetate	12	U
75-27-4	Bromodichloromethane	6	U
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-1,3-Dichloropropene	6	U
79-01-6	Trichloroethene	6	U
124-48-1	Dibromochloromethane	6	U
79-00-5	1,1,2-Trichloroethane	6	U
71-43-2	Benzene	6	U
10061-02-6	trans-1,3-Dichloropropene	6	U
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-Pentanone	12	U
591-78-6	2-Hexanone	12	U
127-18-4	Tetrachloroethene	6	U
79-34-5	1,1,2,2-Tetrachloroethane	6	U
108-88-3	Toluene	6	U
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	6	U
1330-20-7	Xylenes (Total)	6	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

ORIGINAL (Red)

EPA SAMPLE NO.

CCM29 0018

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM26

Matrix: (soil/water) SOIL Lab Sample ID: CCM29

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 52610EC2

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. 16 Date Analyzed: 07/19/89

Column (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

ORIGINAL (Red)

EPA SAMPLE NO.

CCM29 0051

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM26

Matrix: (soil/water) SOIL Lab Sample ID: CCM29

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 52610EK4

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. 16 dec. ____ Date Extracted: 07/20/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 07/21/89

GPC Cleanup: (Y/N) N pH: 7.9 Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	790	U
111-44-4	bis(2-Chloroethyl)Ether	790	U
95-57-8	2-Chlorophenol	790	U
541-73-1	1,3-Dichlorobenzene	790	U
106-46-7	1,4-Dichlorobenzene	790	U
100-51-6	Benzyl Alcohol	790	U
95-50-1	1,2-Dichlorobenzene	790	U
95-48-7	2-Methylphenol	790	U
108-60-1	bis(2-Chloroisopropyl)Ether	790	U
106-44-5	4-Methylphenol	790	U
621-64-7	N-Nitroso-di-n-propylamine	790	U
67-72-1	Hexachloroethane	790	U
98-95-3	Nitrobenzene	790	U
78-59-1	Isophorone	790	U
88-75-5	2-Nitrophenol	790	U
105-67-9	2,4-Dimethylphenol	790	U
65-85-0	Benzoic Acid	3800	U
111-91-1	bis(2-Chloroethoxy)methane	790	U
120-83-2	2,4-Dichlorophenol	790	U
120-82-1	1,2,4-Trichlorobenzene	790	U
91-20-3	Naphthalene	790	U
106-47-8	4-Chloroaniline	790	U
87-68-3	Hexachlorobutadiene	790	U
59-50-7	4-Chloro-3-methylphenol	790	U
91-57-6	2-Methylnaphthalene	790	U
77-47-4	Hexachlorocyclopentadiene	790	U
88-06-2	2,4,6-Trichlorophenol	790	U
95-95-4	2,4,5-Trichlorophenol	3800	U
91-58-7	2-Chloronaphthalene	790	U
88-74-4	2-Nitroaniline	3800	U
131-11-3	Dimethylphthalate	790	U
208-96-8	Acenaphthylene	790	U
606-20-2	2,6-Dinitrotoluene	790	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

ORIGINAL (Red)

EPA SAMPLE NO.

CCM29 00512

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM26

Matrix: (soil/water) SOIL Lab Sample ID: CCM29

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 52610EK4

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. 16 dec. ____ Date Extracted: 07/20/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 07/21/89

GPC Cleanup: (Y/N) N pH: 7.9 Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	3800	U
83-32-9	Acenaphthene	790	U
51-28-5	2,4-Dinitrophenol	3800	U
100-02-7	4-Nitrophenol	3800	U
132-64-9	Dibenzofuran	790	U
121-14-2	2,4-Dinitrotoluene	790	U
84-66-2	Diethylphthalate	790	U
7005-72-3	4-Chlorophenyl-phenyl Ether	790	U
86-73-7	Fluorene	790	U
100-01-6	4-Nitroaniline	3800	U
534-52-1	4,6-Dinitro-2-methylphenol	3800	U
86-30-6	N-Nitrosodiphenylamine (1)	790	U
101-55-3	4-Bromophenyl-phenyl Ether	790	U
118-74-1	Hexachlorobenzene	790	U
87-86-5	Pentachlorophenol	3800	U
85-01-8	Phenanthrene	790	U
120-12-7	Anthracene	790	U
84-74-2	Di-n-butylphthalate	790	U
206-44-0	Fluoranthene	190	J
129-00-0	Pyrene	190	J
85-68-7	Butylbenzylphthalate	790	U
91-94-1	3,3'-Dichlorobenzidine	1600	U
56-55-3	Benzo(a)anthracene	790	U
218-01-9	Chrysene	130	J
117-81-7	bis(2-Ethylhexyl)phthalate	790	U
117-84-0	Di-n-octylphthalate	790	U
205-99-2	Benzo(b)fluoranthene	790	U
207-08-9	Benzo(k)fluoranthene	790	U
50-32-8	Benzo(a)pyrene	790	U
193-39-5	Indeno(1,2,3-cd)pyrene	790	U
53-70-3	Dibenz(a,h)anthracene	790	U
191-24-2	Benzo(g,h,i)perylene	790	U

(1) - Cannot be separated from Diphenylamine

ISe 795

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

ORIGINAL (Red)

EPA SAMPLE NO.

CCM29 00513

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM26

Matrix: (soil/water) SOIL Lab Sample ID: CCM29

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 52610EK4

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. 16 dec. ____ Date Extracted: 07/20/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 07/21/89

GPC Cleanup: (Y/N) N pH: 7.9 Dilution Factor: 2.00

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	~~UNKNOWN Blank SOLK 3~~	5.25	~~400~~	J

ORIGINAL (Red)

EPA SAMPLE NO.

CCM29 01166

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

Lab Name: IT CERRITOS Contract: 68-W8-0058

Lab Code: IC Case No.: 10281 SAS No.: _____ SDG No.: CCM26

Matrix: (soil/water) SOIL Lab Sample ID: CCM29 Y

Sample Wt/Vol: 30.0 (g/ml) G Lab File ID: PO-201-1027

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. 16 dec. ____ Date Extracted: 07/20/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 07/21/89

GPC Cleanup: (Y/N) N pH: 7.9 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/KG) ug/KG	Q
319-84-6	alpha-BHC	9.5	U
319-85-7	beta-BHC	9.5	U
319-86-8	delta-BHC	9.5	U
58-89-9	gamma-BHC(Lindane)	9.5	U
76-44-8	Heptachlor	9.5	U
309-00-2	Aldrin	9.5	U
1024-57-3	Heptachlor epoxide	9.5	U
959-98-8	Endosulfan I	9.5	U
60-57-1	Dieldrin	19	U
72-55-9	4,4'-DDE	19	U
72-20-8	Endrin	19	U
33213-65-9	Endosulfan II	19	U
72-54-8	4,4'-DDD	19	U
1031-07-8	Endosulfan sulfate	19	U
50-29-3	4,4'-DDT	19	U
72-43-5	Methoxychlor	95	U
53494-70-5	Endrin Ketone	19	U
5103-71-9	alpha-Chlordane	95	U
5103-74-2	gamma-Chlordane	95	U
8001-35-2	Toxaphene	190	U
12674-11-2	Aroclor-1016	95	U
11104-28-2	Aroclor-1221	95	U
11141-16-5	Aroclor-1232	95	U
53469-21-9	Aroclor-1242	95	U
12672-29-6	Aroclor-1248	95	U
11097-69-1	Aroclor-1254	190	U
11096-82-5	Aroclor-1260	190	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

ORIGINAL (Red)

EPA SAMPLE NO.

CCM30 00193

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM26

Matrix: (soil/water) SOIL Lab Sample ID: CCM30

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 52610EC3

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. 51 Date Analyzed: 07/19/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	20	U
74-83-9	Bromomethane	20	U
75-01-4	Vinyl Chloride	20	U
75-00-3	Chloroethane	20	U
75-09-2	Methylene Chloride	12	B
67-64-1	Acetone	4	J
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	20	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
108-05-4	Vinyl Acetate	20	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	20	U
591-78-6	2-Hexanone	20	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylenes (Total)	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

ORIGINAL (Red)

EPA SAMPLE NO.

CCM30 00194

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM26

Matrix: (soil/water) SOIL Lab Sample ID: CCM30

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 52610EC3

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. 51 Date Analyzed: 07/19/89

Column (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

ORIGINAL (Red) EPA SAMPLE NO.

CCM30 00534

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: SDG No.: CCM26

Matrix: (soil/water) SOIL Lab Sample ID: CCM30

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 52610EK11

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. dec. 33 Date Extracted: 07/20/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 07/25/89

GPC Cleanup: (Y/N) N pH: 7.4 Dilution Factor: 10.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	4900	U
111-44-4	bis(2-Chloroethyl)Ether	4900	U
95-57-8	2-Chlorophenol	4900	U
541-73-1	1,3-Dichlorobenzene	4900	U
106-46-7	1,4-Dichlorobenzene	4900	U
100-51-6	Benzyl Alcohol	4900	U
95-50-1	1,2-Dichlorobenzene	4900	U
95-48-7	2-Methylphenol	4900	U
108-60-1	bis(2-Chloroisopropyl)Ether	4900	U
106-44-5	4-Methylphenol	4900	U
621-64-7	N-Nitroso-di-n-propylamine	4900	U
67-72-1	Hexachloroethane	4900	U
98-95-3	Nitrobenzene	4900	U
78-59-1	Isophorone	4900	U
88-75-5	2-Nitrophenol	4900	U
105-67-9	2,4-Dimethylphenol	4900	U
65-85-0	Benzoic Acid	24000	U
111-91-1	bis(2-Chloroethoxy)methane	4900	U
120-83-2	2,4-Dichlorophenol	4900	U
120-82-1	1,2,4-Trichlorobenzene	4900	U
91-20-3	Naphthalene	4900	U
106-47-8	4-Chloroaniline	4900	U
87-68-3	Hexachlorobutadiene	4900	U
59-50-7	4-Chloro-3-methylphenol	4900	U
91-57-6	2-Methylnaphthalene	4900	U
77-47-4	Hexachlorocyclopentadiene	4900	U
88-06-2	2,4,6-Trichlorophenol	4900	U
95-95-4	2,4,5-Trichlorophenol	24000	U
91-58-7	2-Chloronaphthalene	4900	U
88-74-4	2-Nitroaniline	24000	U
131-11-3	Dimethylphthalate	4900	U
208-96-8	Acenaphthylene	4900	U
606-20-2	2,6-Dinitrotoluene	4900	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

ORIGINAL (Red)

EPA SAMPLE NO.

CCM30 0053

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM26

Matrix: (soil/water) SOIL Lab Sample ID: CCM30

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 52610EK11

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ dec. 33 Date Extracted: 07/20/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 07/25/89

GPC Cleanup: (Y/N) N pH: 7.4 Dilution Factor: 10.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	24000	U
83-32-9	Acenaphthene	4900	U
51-28-5	2,4-Dinitrophenol	24000	U
100-02-7	4-Nitrophenol	24000	U
132-64-9	Dibenzofuran	4900	U
121-14-2	2,4-Dinitrotoluene	4900	U
84-66-2	Diethylphthalate	4900	U
7005-72-3	4-Chlorophenyl-phenyl Ether	4900	U
86-73-7	Fluorene	4900	U
100-01-6	4-Nitroaniline	24000	U
534-52-1	4,6-Dinitro-2-methylphenol	24000	U
86-30-6	N-Nitrosodiphenylamine (1)	4900	U
101-55-3	4-Bromophenyl-phenyl Ether	4900	U
118-74-1	Hexachlorobenzene	4900	U
87-86-5	Pentachlorophenol	24000	U
85-01-8	Phenanthrene	4900	U
120-12-7	Anthracene	4900	U
84-74-2	Di-n-butylphthalate	4900	U
206-44-0	Fluoranthene	4900	U
129-00-0	Pyrene	4900	U
85-68-7	Butylbenzylphthalate	4900	U
91-94-1	3,3'-Dichlorobenzidine	9900	U
56-55-3	Benzo(a)anthracene	4900	U
218-01-9	Chrysene	4900	U
117-81-7	bis(2-Ethylhexyl)phthalate	4900	U
117-84-0	Di-n-octylphthalate	4900	U
205-99-2	Benzo(b)fluoranthene	4900	U
207-08-9	Benzo(k)fluoranthene	4900	U
50-32-8	Benzo(a)pyrene	4900	U
193-39-5	Indeno(1,2,3-cd)pyrene	4900	U
53-70-3	Dibenz(a,h)anthracene	4900	U
191-24-2	Benzo(g,h,i)perylene	4900	U

(1) - Cannot be separated from Diphenylamine

Ise 788, 1183, 1739, 2196, 3036, 3456

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

ORIGINAL (Red)

CCM30 0053

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM26

Matrix: (soil/water) SOIL Lab Sample ID: CCM30

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 52610EK11

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ dec. 33 Date Extracted: 07/20/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 07/25/89

GPC Cleanup: (Y/N) N pH: 7.4 Dilution Factor: 10.00

Number TICs found: 4

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN sulfur	24.50	2538 2000	J
2.	UNKNOWN HYDROCARBON UHC	33.57	3479 2500	J
3.	UNKNOWN Triterpane HC	34.97	3624 2500	J
4.	UNKNOWN Triterpane HC	35.69	3697 3000	J

sulfur 2000

unsat HC 2500

triterpane HC 2500 3000 5500 (2)

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CCM30 01176

ORIGINAL (Red)

Lab Name: IT CERRITOS Contract: 68-W8-0066

Lab Code: IT Case No.: 12281 SAS No.: SDG No.: CCM26

Matrix: (soil/water) SOIL Lab Sample ID: CCM30 Y

Sample wt/vol: 30.0 (g/ml) G Lab File ID: PQ-201-1029

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. dec. 33 Date Extracted: 07/20/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 07/22/89

GPC Cleanup: (Y/N) N pH: 7.4 Dilution Factor: 5.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/KG) ug/KG	Q
319-84-6	alpha-BHC	60	U
319-85-7	beta-BHC	60	U
319-86-8	delta-BHC	60	U
58-89-9	gamma-BHC(Lindane)	60	U
76-44-8	Heptachlor	60	U
309-00-2	Aldrin	60	U
1024-57-3	Heptachlor epoxide	60	U
959-98-8	Endosulfan I	60	U
60-57-1	Dieldrin	120	U
72-55-9	4,4'-DDE	120	U
72-20-8	Endrin	120	U
33213-65-9	Endosulfan II	120	U
72-54-8	4,4'-DDD	120	U
1031-07-8	Endosulfan sulfate	120	U
50-29-3	4,4'-DDT	120	U
72-43-5	Methoxychlor	600	U
53494-70-5	Endrin Ketone	120	U
5103-71-9	alpha-Chlordane	600	U
5103-74-2	gamma-Chlordane	600	U
8001-35-2	Toxaphene	1200	U
12674-11-2	Aroclor-1016	600	U
11104-28-2	Aroclor-1221	600	U
11141-16-5	Aroclor-1232	600	U
53469-21-9	Aroclor-1242	600	U
12672-29-6	Aroclor-1248	600	U
11097-69-1	Aroclor-1254	1200	U
11096-82-5	Aroclor-1260	1200	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

ORIGINAL (Red)

EPA SAMPLE NO.

CCM31 00204

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM26

Matrix: (soil/water) SOIL Lab Sample ID: CCM31

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 52610EC5

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. 72 Date Analyzed: 07/19/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	36	U
74-83-9	Bromomethane	36	U
75-01-4	Vinyl Chloride	36	U
75-00-3	Chloroethane	36	U
75-09-2	Methylene Chloride	32	B
67-64-1	Acetone	22	J
75-15-0	Carbon Disulfide	18	U
75-35-4	1,1-Dichloroethene	18	U
75-34-3	1,1-Dichloroethane	18	U
540-59-0	1,2-Dichloroethene (total)	18	U
67-66-3	Chloroform	18	U
107-06-2	1,2-Dichloroethane	18	U
78-93-3	2-Butanone	36	U
71-55-6	1,1,1-Trichloroethane	18	U
56-23-5	Carbon Tetrachloride	18	U
108-05-4	Vinyl Acetate	36	U
75-27-4	Bromodichloromethane	18	U
78-87-5	1,2-Dichloropropane	18	U
10061-01-5	cis-1,3-Dichloropropene	18	U
79-01-6	Trichloroethene	18	U
124-48-1	Dibromochloromethane	18	U
79-00-5	1,1,2-Trichloroethane	18	U
71-43-2	Benzene	18	U
10061-02-6	trans-1,3-Dichloropropene	18	U
75-25-2	Bromoform	18	U
108-10-1	4-Methyl-2-Pentanone	36	U
591-78-6	2-Hexanone	36	U
127-18-4	Tetrachloroethene	18	U
79-34-5	1,1,2,2-Tetrachloroethane	18	U
108-88-3	Toluene	18	U
108-90-7	Chlorobenzene	18	U
100-41-4	Ethylbenzene	18	U
100-42-5	Styrene	18	U
1330-20-7	Xylenes (Total)	18	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

ORIGINAL (Red)

EPA SAMPLE NO.

CCM31 00205

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM26

Matrix: (soil/water) SOIL Lab Sample ID: CCM31

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 52610EC5

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. 72 Date Analyzed: 07/19/89

Column (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET ORIGINAL (Red)

EPA SAMPLE NO.

CCM31 0055

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM26

Matrix: (soil/water) SOIL Lab Sample ID: CCM31

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 52610EK12

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ dec. 40 Date Extracted: 07/20/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 07/25/89

GPC Cleanup: (Y/N) N pH: 7.2 Dilution Factor: 10.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	5500	U
111-44-4	bis(2-Chloroethyl)Ether	5500	U
95-57-8	2-Chlorophenol	5500	U
541-73-1	1,3-Dichlorobenzene	5500	U
106-46-7	1,4-Dichlorobenzene	5500	U
100-51-6	Benzyl Alcohol	5500	U
95-50-1	1,2-Dichlorobenzene	5500	U
95-48-7	2-Methylphenol	5500	U
108-60-1	bis(2-Chloroisopropyl)Ether	5500	U
106-44-5	4-Methylphenol	5500	U
621-64-7	N-Nitroso-di-n-propylamine	5500	U
67-72-1	Hexachloroethane	5500	U
98-95-3	Nitrobenzene	5500	U
78-59-1	Isophorone	5500	U
88-75-5	2-Nitrophenol	5500	U
105-67-9	2,4-Dimethylphenol	5500	U
65-85-0	Benzoic Acid	27000	U
111-91-1	bis(2-Chloroethoxy)methane	5500	U
120-83-2	2,4-Dichlorophenol	5500	U
120-82-1	1,2,4-Trichlorobenzene	5500	U
91-20-3	Naphthalene	5500	U
106-47-8	4-Chloroaniline	5500	U
87-68-3	Hexachlorobutadiene	5500	U
59-50-7	4-Chloro-3-methylphenol	5500	U
91-57-6	2-Methylnaphthalene	5500	U
77-47-4	Hexachlorocyclopentadiene	5500	U
88-06-2	2,4,6-Trichlorophenol	5500	U
95-95-4	2,4,5-Trichlorophenol	27000	U
91-58-7	2-Chloronaphthalene	5500	U
88-74-4	2-Nitroaniline	27000	U
131-11-3	Dimethylphthalate	5500	U
208-96-8	Acenaphthylene	5500	U
606-20-2	2,6-Dinitrotoluene	5500	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

ORIGINAL (Red)

EPA SAMPLE NO.

CCM31 0055

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM26

Matrix: (soil/water) SOIL Lab Sample ID: CCM31

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 52610EK12

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ dec. 40 Date Extracted: 07/20/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 07/25/89

GPC Cleanup: (Y/N) N pH: 7.2 Dilution Factor: 10.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	27000	U
83-32-9	Acenaphthene	690	J
51-28-5	2,4-Dinitrophenol	27000	U
100-02-7	4-Nitrophenol	27000	U
132-64-9	Dibenzofuran	5500	U
121-14-2	2,4-Dinitrotoluene	5500	U
84-66-2	Diethylphthalate	5500	U
7005-72-3	4-Chlorophenyl-phenyl Ether	5500	U
86-73-7	Fluorene	5500	U
100-01-6	4-Nitroaniline	27000	U
534-52-1	4,6-Dinitro-2-methylphenol	27000	U
86-30-6	N-Nitrosodiphenylamine (1)	5500	U
101-55-3	4-Bromophenyl-phenyl Ether	5500	U
118-74-1	Hexachlorobenzene	5500	U
87-86-5	Pentachlorophenol	27000	U
85-01-8	Phenanthrene	7900	
120-12-7	Anthracene	1500	J
84-74-2	Di-n-butylphthalate	5500	U
206-44-0	Fluoranthene	9800	
129-00-0	Pyrene	7900	
85-68-7	Butylbenzylphthalate	5500	U
91-94-1	3,3'-Dichlorobenzidine	11000	U
56-55-3	Benzo(a)anthracene	4600	J
218-01-9	Chrysene	4900	J
117-81-7	bis(2-Ethylhexyl)phthalate	2300	J
117-84-0	Di-n-octylphthalate	5500	U
205-99-2	Benzo(b)fluoranthene	4300	J
207-08-9	Benzo(k)fluoranthene	3400	J
50-32-8	Benzo(a)pyrene	3600	J
193-39-5	Indeno(1,2,3-cd)pyrene	2300	J
53-70-3	Dibenz(a,h)anthracene	5500	U
191-24-2	Benzo(g,h,i)perylene	2400	J

(1) - Cannot be separated from Diphenylamine

ISe 787, 1182, 1739, 2196, 3032, 3457

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

ORIGINAL (Red)

EPA SAMPLE NO.

~~00553~~

CCM31

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM26

Matrix: (soil/water) SOIL Lab Sample ID: CCM31

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 52610EK12

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ dec. 40 Date Extracted: 07/20/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 07/25/89

GPC Cleanup: (Y/N) N pH: 7.2 Dilution Factor: 10.00

Number TICs found: 7

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.		Q
1.	UNKNOWN HYDROCARBON SHC	31.76	3290	3900	J
2. 205-82-3	BENZO[J]FLUORANTHENE ISOMER $C_{20}H_{12}$	33.04	3424	3300	J
3.	UNKNOWN HYDROCARBON SHC	33.57	3478	11000	J
4. 516-95-0	UNKNOWN Cholestan-3-01 ($C_{27}H_{48}O$)	35.17	3645	4400	J
5.	UNKNOWN HYDROCARBON SHC	35.34	3661	5600	J
6. 57-88-5	CHOLESTEROL $C_{27}H_{46}O$	35.57	3685	10000	J
7. 83-47-6	.GAMMA.-SITOSTEROL ($C_{29}H_{50}O$)	37.84	3926	6700	J

SHC
3900
11000
5600
20500 (3)

Cholesterol
$C_{27}H_{46}O$
CAS 57-88-5
10000

Gamma-sitosterol
$C_{29}H_{50}O$
CAS 83-47-6
6700

Cholestan-3-01
$C_{27}H_{48}O$
CAS 516-95-0
4400

Benzo(j)Fluoranthene
$C_{20}H_{12}$
CAS 205-82-3
3300 ISO

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

ORIGINAL (Red)

EPA SAMPLE NO.

CCM31 01188

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM26

Matrix: (soil/water) SOIL Lab Sample ID: CCM31 Y

Sample wt/vol: 30.0 (g/ml) G Lab File ID: PD-201-1030

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ dec. 40 Date Extracted: 07/20/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 07/22/89

GPC Cleanup: (Y/N) N pH: 7.2 Dilution Factor: 5.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/KG) ug/KG	Q
319-84-6	alpha-BHC	67	U
319-85-7	beta-BHC	67	U
319-86-8	delta-BHC	67	U
58-89-9	gamma-BHC(Lindane)	67	U
76-44-8	Heptachlor	67	U
309-00-2	Aldrin	67	U
1024-57-3	Heptachlor epoxide	67	U
959-98-8	Endosulfan I	67	U
60-57-1	Dieldrin	130	U
72-55-9	4,4'-DDE	130	U
72-20-8	Endrin	130	U
33213-65-9	Endosulfan II	130	U
72-54-8	4,4'-DDD	130	U
1031-07-8	Endosulfan sulfate	130	U
50-29-3	4,4'-DDT	130	U
72-43-5	Methoxychlor	670	U
53494-70-5	Endrin Ketone	130	U
5103-71-9	alpha-Chlordane	670	U
5103-74-2	gamma-Chlordane	670	U
8001-35-2	Toxaphene	1300	U
12674-11-2	Aroclor-1016	670	U
11104-28-2	Aroclor-1221	670	U
11141-16-5	Aroclor-1232	670	U
53469-21-9	Aroclor-1242	670	U
12672-29-6	Aroclor-1248	670	U
11097-69-1	Aroclor-1254	1300	U
11096-82-5	Aroclor-1260	1300	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

ORIGINAL (Red)

EPA SAMPLE NO

CCM32 0021

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM26

Matrix: (soil/water) SOIL Lab Sample ID: CCM32

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 52610EC14

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. 18 Date Analyzed: 07/19/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND		Q
74-87-3	Chloromethane	12	U
74-83-9	Bromomethane	12	U
75-01-4	Vinyl Chloride	12	U
75-00-3	Chloroethane	12	U
75-09-2	Methylene Chloride	5	BJ
67-64-1	Acetone	12	U
75-15-0	Carbon Disulfide	6	U
75-35-4	1,1-Dichloroethene	6	U
75-34-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene (total)	6	U
67-66-3	Chloroform	6	U
107-06-2	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	12	U
71-55-6	1,1,1-Trichloroethane	6	U
56-23-5	Carbon Tetrachloride	6	U
108-05-4	Vinyl Acetate	12	U
75-27-4	Bromodichloromethane	6	U
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-1,3-Dichloropropene	6	U
79-01-6	Trichloroethene	6	U
124-48-1	Dibromochloromethane	6	U
79-00-5	1,1,2-Trichloroethane	6	U
71-43-2	Benzene	6	U
10061-02-6	trans-1,3-Dichloropropene	6	U
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-Pentanone	12	U
591-78-6	2-Hexanone	12	U
127-18-4	Tetrachloroethene	6	U
79-34-5	1,1,2,2-Tetrachloroethane	6	U
108-88-3	Toluene	6	U
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	6	U
1330-20-7	Xylenes (Total)	6	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

ORIGINAL (Red) CCM32 00217

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM26

Matrix: (soil/water) SOIL Lab Sample ID: CCM32

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 52610EC14

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. 18 Date Analyzed: 07/19/89

Column (pack/cap) PACK Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

ORIGINAL (Red)

EPA SAMPLE NO.

CCM32 00597

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM26

Matrix: (soil/water) SOIL Lab Sample ID: CCM32

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 52610EK8

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. 18 dec. ____ Date Extracted: 07/20/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 07/24/89

GPC Cleanup: (Y/N) N pH: 6.7 Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	800	U
111-44-4	bis(2-Chloroethyl)Ether	800	U
95-57-8	2-Chlorophenol	800	U
541-73-1	1,3-Dichlorobenzene	800	U
106-46-7	1,4-Dichlorobenzene	800	U
100-51-6	Benzyl Alcohol	800	U
95-50-1	1,2-Dichlorobenzene	800	U
95-48-7	2-Methylphenol	800	U
108-60-1	bis(2-Chloroisopropyl)Ether	800	U
106-44-5	4-Methylphenol	800	U
621-64-7	N-Nitroso-di-n-propylamine	800	U
67-72-1	Hexachloroethane	800	U
98-95-3	Nitrobenzene	800	U
78-59-1	Isophorone	800	U
88-75-5	2-Nitrophenol	800	U
105-67-9	2,4-Dimethylphenol	800	U
65-85-0	Benzoic Acid	3900	U
111-91-1	bis(2-Chloroethoxy)methane	800	U
120-83-2	2,4-Dichlorophenol	800	U
120-82-1	1,2,4-Trichlorobenzene	800	U
91-20-3	Naphthalene	800	U
106-47-8	4-Chloroaniline	800	U
87-68-3	Hexachlorobutadiene	800	U
59-50-7	4-Chloro-3-methylphenol	800	U
91-57-6	2-Methylnaphthalene	800	U
77-47-4	Hexachlorocyclopentadiene	800	U
88-06-2	2,4,6-Trichlorophenol	800	U
95-95-4	2,4,5-Trichlorophenol	3900	U
91-58-7	2-Chloronaphthalene	800	U
88-74-4	2-Nitroaniline	3900	U
131-11-3	Dimethylphthalate	800	U
208-96-8	Acenaphthylene	800	U
606-20-2	2,6-Dinitrotoluene	800	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

ORIGINAL (Red)

EPA SAMPLE NO.

CCM32 00598

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: SDG No.: CCM26

Matrix: (soil/water) SOIL Lab Sample ID: CCM32

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 52610EK8

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. 18 dec. Date Extracted: 07/20/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 07/24/89

GPC Cleanup: (Y/N) N pH: 6.7 Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	3900	U
83-32-9	Acenaphthene	800	U
51-28-5	2,4-Dinitrophenol	3900	U
100-02-7	4-Nitrophenol	3900	U
132-64-9	Dibenzofuran	800	U
121-14-2	2,4-Dinitrotoluene	800	U
84-66-2	Diethylphthalate	800	U
7005-72-3	4-Chlorophenyl-phenyl Ether	800	U
86-73-7	Fluorene	800	U
100-01-6	4-Nitroaniline	3900	U
534-52-1	4,6-Dinitro-2-methylphenol	3900	U
86-30-6	N-Nitrosodiphenylamine (1)	800	U
101-55-3	4-Bromophenyl-phenyl Ether	800	U
118-74-1	Hexachlorobenzene	800	U
87-86-5	Pentachlorophenol	3900	U
85-01-8	Phenanthrene	800	U
120-12-7	Anthracene	800	U
84-74-2	Di-n-butylphthalate	800	U
206-44-0	Fluoranthene	88	J
129-00-0	Pyrene	91	J
85-68-7	Butylbenzylphthalate	800	U
91-94-1	3,3'-Dichlorobenzidine	1600	U
56-55-3	Benzo(a)anthracene	800	U
218-01-9	Chrysene	800	U
117-81-7	bis(2-Ethylhexyl)phthalate	800	U
117-84-0	Di-n-octylphthalate	800	U
205-99-2	Benzo(b)fluoranthene	800	U
207-08-9	Benzo(k)fluoranthene	800	U
50-32-8	Benzo(a)pyrene	800	U
193-39-5	Indeno(1,2,3-cd)pyrene	800	U
53-70-3	Dibenz(a,h)anthracene	800	U
191-24-2	Benzo(g,h,i)perylene	800	U

(1) - Cannot be separated from Diphenylamine

RS e 795, 1191, 1750, 2208, 3049, 3470, ORIGINAL (Red)

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

CCM32 00599

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM26

Matrix: (soil/water) SOIL Lab Sample ID: CCM32

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 52610EK8

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. 18 dec. ____ Date Extracted: 07/20/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 07/24/89

GPC Cleanup: (Y/N) N pH: 6.7 Dilution Factor: 2.00

Number TICs found: 10

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	~~UNKNOWN~~ blank	5.23	~~542~~ 410	~~J~~
2.	UNKNOWN HYDROCARBON UHC	33.12	3432 650	J
3.	UNKNOWN HYDROCARBON UHC	33.69	3496 2400	J
4.	UNKNOWN HYDROCARBON SHC	35.47	3678 1600	J
5. 4651-51-8	UNKNOWN ERGOST-5-EN-3-OL ($C_{28}H_{46}O$)	36.87	3821 330	J
6.	UNKNOWN unknown sterol	37.06	3839 410	J
7.	~~UNKNOWN HYDROCARBON~~ STIGMASTEROL ($C_{29}H_{48}O$)	37.27	3862 410	J
8.	UNKNOWN unknown sterol	37.41	3875 330	J
9.	UNKNOWN HYDROCARBON UHC	37.79	3916 490	J
10. 83-47-6	UNKNOWN GAMMA SITOSTEROL ($C_{29}H_{50}O$)	38.02	3946 650	J

Unsat HC	Sat HC	Gamma sitosterol $C_{29}H_{50}O$	STIGMASTEROL $C_{29}H_{48}O$	ERGOST-5-EN-3-OL $C_{28}H_{46}O$)	Unknown sterol
650	1600	650	410	330	410
2400					330
490					
3540 (3)					740 (2)

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

ORIGINAL (Red)

EPA SAMPLE NO.

CCM32 01193

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: SDG No.: CCM26

Matrix: (soil/water) SOIL Lab Sample ID: CCM32

Sample wt/vol: 30.0 (g/ml) G Lab File ID: P0-205-1052

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. 18 dec. Date Extracted: 07/21/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 07/27/89

GPC Cleanup: (Y/N) N pH: 6.7 Dilution Factor: 1.0

CONCENTRATION UNITS: (ug/L or ug/KG) ug/KG

CAS NO.	COMPOUND	Q
319-84-6	alpha-BHC	9.7 U
319-85-7	beta-BHC	9.7 U
319-86-8	delta-BHC	9.7 U
58-89-9	gamma-BHC(Lindane)	9.7 U
76-44-8	Heptachlor	9.7 U
309-00-2	Aldrin	9.7 U
1024-57-3	Heptachlor epoxide	9.7 U
959-98-8	Endosulfan I	9.7 U
60-57-1	Dieldrin	19 U
72-55-9	4,4'-DDE	19 U
72-20-8	Endrin	19 U
33213-65-9	Endosulfan II	19 U
72-54-8	4,4'-DDD	19 U
1031-07-8	Endosulfan sulfate	19 U
50-29-3	4,4'-DDT	19 U
72-43-5	Methoxychlor	97 U
53494-70-5	Endrin Ketone	19 U
5103-71-9	alpha-Chlordane	97 U
5103-74-2	gamma-Chlordane	97 U
8001-35-2	Toxaphene	190 U
12674-11-2	Aroclor-1016	97 U
11104-28-2	Aroclor-1221	97 U
11141-16-5	Aroclor-1232	97 U
53469-21-9	Aroclor-1242	97 U
12672-29-6	Aroclor-1248	97 U
11097-69-1	Aroclor-1254	190 U
11096-82-5	Aroclor-1260	190 U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

ORIGINAL (Red)

EPA SAMPLE NO.

CCM33 00226

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Matrix: (soil/water) WATER Lab Sample ID: CCM33

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 52611EC9

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ Date Analyzed: 07/20/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	4	BJ
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylenes (Total)	5	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

ORIGINAL (Red)

EPA SAMPLE NO.

CCM33 0022

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Matrix: (soil/water) WATER Lab Sample ID: CCM33

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 52611EC9

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ Date Analyzed: 07/20/89

Column (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

ORIGINAL (Red)

EPA SAMPLE NO.

CCM33 00602

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Matrix: (soil/water) WATER Lab Sample ID: CCM33

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 52611EI2

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ dec. ____ Date Extracted: 07/15/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 07/18/89

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
100-51-6	Benzyl Alcohol	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	bis(2-Chloroisopropyl)Ether	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
65-85-0	Benzoic Acid	50	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	50	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	50	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

ORIGINAL (Red)

EPA SAMPLE NO.

CCM33 0060

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Matrix: (soil/water) WATER Lab Sample ID: CCM33

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 52611EI2

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ dec. ____ Date Extracted: 07/15/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 07/18/89

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	50	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	50	U
100-02-7	4-Nitrophenol	50	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenyl Ether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	50	U
534-52-1	4,6-Dinitro-2-methylphenol	50	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenyl Ether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	50	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	20	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	U
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

1F

ORIGINAL (Red)

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

CCM33 0060

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Matrix: (soil/water) WATER Lab Sample ID: CCM33

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 52611EI2

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ dec. ____ Date Extracted: 07/15/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 07/18/89

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.00

Number TICs found: 6

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	Scan EST. CONC.		Q
1.	UNKNOWN Ketone	7.53	452	20	J
2.	TRIMETHYL BENZENE ISOMER	9.74	584	40	J
3.	UNKNOWN C_9H_4 isomer	9.90	594	12	J
4.	UNKNOWN Ketone	11.67	700	18	J
5.	UNKNOWN unknown	15.47	928	8	J
6.	UNKNOWN unknown	16.70	1002	40	J

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CCM33 01001

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Matrix: (soil/water) WATER Lab Sample ID: CCM33

Sample wt/vol: 1000 (g/ml) ML Lab File ID: PP-198-1027

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ dec. ____ Date Extracted: 07/14/89

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 07/18/89

GPC Cleanup: (Y/N) N pH: ____ Dilution Factor: 1.0

CONCENTRATION UNITS: (ug/L or ug/KG) ug/L

CAS NO.	COMPOUND	Q
319-84-6	alpha-BHC	0.05 U
319-85-7	beta-BHC	0.05 U
319-86-8	delta-BHC	0.05 U
58-89-9	gamma-BHC(Lindane)	0.05 U
76-44-8	Heptachlor	0.05 U
309-00-2	Aldrin	0.05 U
1024-57-3	Heptachlor epoxide	0.05 U
959-98-8	Endosulfan I	0.05 U
60-57-1	Dieldrin	0.10 U
72-55-9	4,4'-DDE	0.10 U
72-20-8	Endrin	0.10 U
33213-65-9	Endosulfan II	0.10 U
72-54-8	4,4'-DDD	0.10 U
1031-07-8	Endosulfan sulfate	0.10 U
50-29-3	4,4'-DDT	0.10 U
72-43-5	Methoxychlor	0.50 U
53494-70-5	Endrin Ketone	0.10 U
5103-71-9	alpha-Chlordane	0.50 U
5103-74-2	gamma-Chlordane	0.50 U
8001-35-2	Toxaphene	1.00 U
12674-11-2	Aroclor-1016	0.50 U
11104-28-2	Aroclor-1221	0.50 U
11141-16-5	Aroclor-1232	0.50 U
53469-21-9	Aroclor-1242	0.50 U
12672-29-6	Aroclor-1248	0.50 U
11097-69-1	Aroclor-1254	1.00 U
11096-82-5	Aroclor-1260	1.00 U

mks

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

ORIGINAL (Red)

EPA SAMPLE NO.

CCM34 00236

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Matrix: (soil/water) WATER Lab Sample ID: CCM34

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 52611EC10

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ Date Analyzed: 07/20/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	B
67-64-1	Acetone	1	J
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylenes (Total)	5	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

ORIGINAL (Red)

EPA SAMPLE NO.

CCM34 00237

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Matrix: (soil/water) WATER Lab Sample ID: CCM34

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 52611EC10

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ Date Analyzed: 07/20/89

Column (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

ORIGINAL (Red)

EPA SAMPLE NO.

CP743 0023

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM26

Matrix: (soil/water) SOIL Lab Sample ID: CP743

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 52610EC21

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. 17 Date Analyzed: 07/20/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	12	U
74-83-9	Bromomethane	12	U
75-01-4	Vinyl Chloride	12	U
75-00-3	Chloroethane	12	U
75-09-2	Methylene Chloride	24	B
67-64-1	Acetone	2	J
75-15-0	Carbon Disulfide	6	U
75-35-4	1,1-Dichloroethene	6	U
75-34-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene (total)	6	U
67-66-3	Chloroform	6	U
107-06-2	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	12	U
71-55-6	1,1,1-Trichloroethane	6	U
56-23-5	Carbon Tetrachloride	6	U
108-05-4	Vinyl Acetate	12	U
75-27-4	Bromodichloromethane	6	U
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-1,3-Dichloropropene	6	U
79-01-6	Trichloroethene	6	U
124-48-1	Dibromochloromethane	6	U
79-00-5	1,1,2-Trichloroethane	6	U
71-43-2	Benzene	6	U
10061-02-6	trans-1,3-Dichloropropene	6	U
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-Pentanone	12	U
591-78-6	2-Hexanone	12	U
127-18-4	Tetrachloroethene	6	U
79-34-5	1,1,2,2-Tetrachloroethane	6	U
108-88-3	Toluene	6	U
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	6	U
1330-20-7	Xylenes (Total)	6	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

ORIGINAL (Red)

EPA SAMPLE NO.

CP743 00235

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM26

Matrix: (soil/water) SOIL Lab Sample ID: CP743

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 52610EC21

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. 17 Date Analyzed: 07/20/89

Column (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 4

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN HYDROCARBON 1,1-dimethyl Cyclohexane C_8H_{16}	13.44	403	4	J
2.	UNKNOWN HYDROCARBON Unsat HC	14.54	436	6	J
3.	TRIMETHYL CYCLOHEXANE ISOMER C_9H_{18}	17.34	520	8	J
4.	1-ETHYL-4-METHYL-CYCLOHEXANE C_9H_{18}	18.90	567	10	J

C_9H_{18} Cyclohexane isomer
8
10
18 (2) iso

Unsaturated HC
4
6
10 TOT unk (2)

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

ORIGINAL (Red)

EPA SAMPLE NO.

CP743 00672

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM26

Matrix: (soil/water) SOIL Lab Sample ID: CP743

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 52610EK13

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. 17 dec. ____ Date Extracted: 07/20/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 07/25/89

GPC Cleanup: (Y/N) N pH: 7.5 Dilution Factor: 10.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	4000	U
111-44-4	bis(2-Chloroethyl)Ether	4000	U
95-57-8	2-Chlorophenol	4000	U
541-73-1	1,3-Dichlorobenzene	4000	U
106-46-7	1,4-Dichlorobenzene	4000	U
100-51-6	Benzyl Alcohol	4000	U
95-50-1	1,2-Dichlorobenzene	4000	U
95-48-7	2-Methylphenol	4000	U
108-60-1	bis(2-Chloroisopropyl)Ether	4000	U
106-44-5	4-Methylphenol	4000	U
621-64-7	N-Nitroso-di-n-propylamine	4000	U
67-72-1	Hexachloroethane	4000	U
98-95-3	Nitrobenzene	4000	U
78-59-1	Isophorone	4000	U
88-75-5	2-Nitrophenol	4000	U
105-67-9	2,4-Dimethylphenol	4000	U
65-85-0	Benzoic Acid	19000	U
111-91-1	bis(2-Chloroethoxy)methane	4000	U
120-83-2	2,4-Dichlorophenol	4000	U
120-82-1	1,2,4-Trichlorobenzene	4000	U
91-20-3	Naphthalene	4000	U
106-47-8	4-Chloroaniline	4000	U
87-68-3	Hexachlorobutadiene	4000	U
59-50-7	4-Chloro-3-methylphenol	4000	U
91-57-6	2-Methylnaphthalene	4000	U
77-47-4	Hexachlorocyclopentadiene	4000	U
88-06-2	2,4,6-Trichlorophenol	4000	U
95-95-4	2,4,5-Trichlorophenol	19000	U
91-58-7	2-Chloronaphthalene	4000	U
88-74-4	2-Nitroaniline	19000	U
131-11-3	Dimethylphthalate	4000	U
208-96-8	Acenaphthylene	4000	U
606-20-2	2,6-Dinitrotoluene	4000	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

ORIGINAL (Red)

EPA SAMPLE NO.

CP743 0067

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM26

Matrix: (soil/water) SOIL Lab Sample ID: CP743

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 52610EK13

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. 17 dec. ____ Date Extracted: 07/20/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 07/25/89

GPC Cleanup: (Y/N) N pH: 7.5 Dilution Factor: 10.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	19000	U
83-32-9	Acenaphthene	4000	U
51-28-5	2,4-Dinitrophenol	19000	U
100-02-7	4-Nitrophenol	19000	U
132-64-9	Dibenzofuran	4000	U
121-14-2	2,4-Dinitrotoluene	4000	U
84-66-2	Diethylphthalate	4000	U
7005-72-3	4-Chlorophenyl-phenyl Ether	4000	U
86-73-7	Fluorene	900	J
100-01-6	4-Nitroaniline	19000	U
534-52-1	4,6-Dinitro-2-methylphenol	19000	U
86-30-6	N-Nitrosodiphenylamine (1)	4000	U
101-55-3	4-Bromophenyl-phenyl Ether	4000	U
118-74-1	Hexachlorobenzene	4000	U
87-86-5	Pentachlorophenol	19000	U
85-01-8	Phenanthrene	840	J
120-12-7	Anthracene	430	J
84-74-2	Di-n-butylphthalate	4000	U
206-44-0	Fluoranthene	1500	J
129-00-0	Pyrene	3800	J
85-68-7	Butylbenzylphthalate	4000	U
91-94-1	3,3'-Dichlorobenzidine	8000	U
56-55-3	Benzo(a)anthracene	4000	U
218-01-9	Chrysene	3000	J
117-81-7	bis(2-Ethylhexyl)phthalate	4000	U
117-84-0	Di-n-octylphthalate	4000	U
205-99-2	Benzo(b)fluoranthene	1500	J
207-08-9	Benzo(k)fluoranthene	4000	U
50-32-8	Benzo(a)pyrene	1600	J
193-39-5	Indeno(1,2,3-cd)pyrene	4000	U
53-70-3	Dibenz(a,h)anthracene	4000	U
191-24-2	Benzo(g,h,i)perylene	1500	J

(1) - Cannot be separated from Diphenylamine

Use 788, 1182, 1740, 2198, 3041, 3464

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

ORIGINAL (Red)

EPA SAMPLE NO.

CP743 00674

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM26

Matrix: (soil/water) SOIL Lab Sample ID: CP743

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 52610EK13

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. 17 dec. ____ Date Extracted: 07/20/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 07/25/89

GPC Cleanup: (Y/N) N pH: 7.5 Dilution Factor: 10.00

Number TICs found: 20

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN HYDROCARBON UHC	12.25	1270 2800	J
2.	UNKNOWN HYDROCARBON alcohol, unk other	13.37	1385 3600	J
3.	UNKNOWN HYDROCARBON HC, unknown subst	15.22	1576 2400	J
4.	UNKNOWN HYDROCARBON SHC	16.64	1723 3200	J
5. 2131-42-2	TRIMETHYL NAPHTHALENE ISOMER $C_{13}H_{14}$	17.89	1853 2000	J
6.	UNKNOWN HYDROCARBON HC, unk subst	19.52	2022 4000	J
7. 1812-51-7	UNKNOWN ALKYLBIPHENYL 2-ethyl 1,1'-Biphenyl $C_{14}H_{14}$	20.25	2098 3200	J
8.	UNKNOWN HYDROCARBON UHC	20.35	2108 5600	J
9.	UNKNOWN HYDROCARBON Oxygen cont unknown	21.77	2256 8000	J
10. 613-12-7	2-METHYL ANTHRALENE ($C_{15}H_{12}$)	22.89	2371 2800	J
11. 3674-65-5	2,3-DIMETHYL PHENANTHRENE ISOMER $C_{16}H_{14}$	24.42	2531 4400	J
12.	UNKNOWN Oxygen cont unknown	25.82	2676 3200	J
13.	UNKNOWN unknown aromatic, mw 220	26.07	2702 5200	J
14. 3442-78-2	METHYLPYRENE ISOMER 2-methyl- $C_{17}H_{12}$	26.97	2794 5200	J
15.	11H-BENZO[A]FLUORENE ISOMER ($C_{17}H_{12}$)	27.32	2831 6400	J
16.	1,1':2',1''-TERPHENYL ISOMER $C_{18}H_{14}$	28.32	2934 4400	J
17.	UNKNOWN POLYNUCLEAR AROMATIC mw 244 $C_{19}H_{16}$	29.82	3089 5200	J
18. 3351-31-3	METHYL CHRYSENE ~~ISOMER~~ $C_{19}H_{14}$	30.64	3174 8000	J
19. 54986-63-9	5,8-DIMETHYL- Benzo(c) Phenanthrene $C_{20}H_{16}$	31.79	3293 4000	J
20.	UNKNOWN Oxygen cont unknown	35.72	3702 2800	J

UHC 2800 5600 8400(2)

Oxygen cont unknown 3600 8000 3200 2800 17600(4)

HC, unknown subst 2400 4000 6400(2)

Saturated HC 3200

1,4,6 TRimethyl naphthalene CAS 2131-42-2 $C_{13}H_{14}$ 2000

2-ethyl-1,1'-Biphenyl $C_{14}H_{14}$ CAS# 1812-51-7 3200 ISO

2-methyl anthracene $C_{15}H_{12}$ CAS 613-12-7 2800 ISO

2,3-dimethyl phenanthrene $C_{16}H_{14}$ 3674-65-5 4400 ISO

2-methyl-pyrene $C_{17}H_{12}$ 3442-78-2 5200 ISO 6400 11600(2)

1,1',2',1''-terphenyl CAS# $C_{18}H_{14}$ 1812-51-7 4400 ISO

mw 244 Aromatic HC, possibly $C_{19}H_{16}$ 5200

3-methyl-chrysene $C_{19}H_{14}$ 8000 ISO

5,8-dimethyl-benzo(c) phenanthrene $C_{20}H_{16}$ 4000 ISO

FORM I SV-TIC

1/87 Rev.

ID

PESTICIDE ORGANICS ANALYSIS DATA SHEET

ORIGINAL (Red)

EPA SAMPLE NO.

CP743

01204

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12381 SAS No.: _____ SDG No.: CC026

Matrix: (soil/water) SOIL Lab Sample ID: CP743 Y

Sample wt/vol: 30.0 (g/ml) G Lab File ID: P0-201-1031

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. 12 dec. _____ Date Extracted: 07/20/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 07/22/89

GPC Cleanup: (Y/N) N pH: 7.5 Dilution Factor: 5.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/KG) ug/KG	Q
319-84-6	alpha-BHC	48	U
319-85-7	beta-BHC	48	U
319-86-8	delta-BHC	48	U
58-89-9	gamma-BHC(Lindane)	48	U
76-44-8	Heptachlor	48	U
309-00-2	Aldrin	48	U
1024-57-3	Heptachlor epoxide	48	U
959-98-8	Endosulfan I	48	U
60-57-1	Dieldrin	96	U
72-55-9	4,4'-DDE	96	U
72-20-8	Endrin	96	U
33213-65-9	Endosulfan II	96	U
72-54-8	4,4'-DDD	96	U
1031-07-8	Endosulfan sulfate	96	U
50-29-3	4,4'-DDT	96	U
72-43-5	Methoxychlor	480	U
53494-70-5	Endrin Ketone	96	U
5103-71-9	alpha-Chlordane	480	U
5103-74-2	gamma-Chlordane	480	U
8001-35-2	Toxaphene	960	U
12674-11-2	Aroclor-1016	480	U
11104-28-2	Aroclor-1221	480	U
11141-16-5	Aroclor-1232	480	U
53469-21-9	Aroclor-1242	480	U
12672-29-6	Aroclor-1248	480	U
11097-69-1	Aroclor-1254	960	U
11096-82-5	Aroclor-1260	960	U

MB

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

ORIGINAL (Red)

EPA SAMPLE NO.

CP744 00249

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM26

Matrix: (soil/water) SOIL Lab Sample ID: CP744

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 52610EC10

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. 10 Date Analyzed: 07/19/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	15	B
67-64-1	Acetone	2	J
75-15-0	Carbon Disulfide	6	U
75-35-4	1,1-Dichloroethene	6	U
75-34-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene (total)	6	U
67-66-3	Chloroform	6	U
107-06-2	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	6	U
56-23-5	Carbon Tetrachloride	6	U
108-05-4	Vinyl Acetate	11	U
75-27-4	Bromodichloromethane	6	U
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-1,3-Dichloropropene	6	U
79-01-6	Trichloroethene	6	U
124-48-1	Dibromochloromethane	6	U
79-00-5	1,1,2-Trichloroethane	6	U
71-43-2	Benzene	6	U
10061-02-6	trans-1,3-Dichloropropene	6	U
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	6	U
79-34-5	1,1,2,2-Tetrachloroethane	6	U
108-88-3	Toluene	6	U
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	6	U
1330-20-7	Xylenes (Total)	6	U

1E

ORIGINAL (Red)

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

CP744 00250

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM26

Matrix: (soil/water) SOIL Lab Sample ID: CP744

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 52610EC10

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. 10 Date Analyzed: 07/19/89

Column (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

ORIGINAL (Red)

EPA SAMPLE NO.

CP744 00726

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM26

Matrix: (soil/water) SOIL Lab Sample ID: CP744

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 52610EK14

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. 10 dec. ____ Date Extracted: 07/20/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 07/25/89

GPC Cleanup: (Y/N) N pH: 7.4 Dilution Factor: 10.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	3700	U
111-44-4	bis(2-Chloroethyl)Ether	3700	U
95-57-8	2-Chlorophenol	3700	U
541-73-1	1,3-Dichlorobenzene	3700	U
106-46-7	1,4-Dichlorobenzene	3700	U
100-51-6	Benzyl Alcohol	3700	U
95-50-1	1,2-Dichlorobenzene	3700	U
95-48-7	2-Methylphenol	3700	U
108-60-1	bis(2-Chloroisopropyl)Ether	3700	U
106-44-5	4-Methylphenol	3700	U
621-64-7	N-Nitroso-di-n-propylamine	3700	U
67-72-1	Hexachloroethane	3700	U
98-95-3	Nitrobenzene	3700	U
78-59-1	Isophorone	3700	U
88-75-5	2-Nitrophenol	3700	U
105-67-9	2,4-Dimethylphenol	3700	U
65-85-0	Benzoic Acid	18000	U
111-91-1	bis(2-Chloroethoxy)methane	3700	U
120-83-2	2,4-Dichlorophenol	3700	U
120-82-1	1,2,4-Trichlorobenzene	3700	U
91-20-3	Naphthalene	470	J
106-47-8	4-Chloroaniline	3700	U
87-68-3	Hexachlorobutadiene	3700	U
59-50-7	4-Chloro-3-methylphenol	3700	U
91-57-6	2-Methylnaphthalene	3700	U
77-47-4	Hexachlorocyclopentadiene	3700	U
88-06-2	2,4,6-Trichlorophenol	3700	U
95-95-4	2,4,5-Trichlorophenol	18000	U
91-58-7	2-Chloronaphthalene	3700	U
88-74-4	2-Nitroaniline	18000	U
131-11-3	Dimethylphthalate	3700	U
208-96-8	Acenaphthylene	3700	U
606-20-2	2,6-Dinitrotoluene	3700	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

ORIGINAL (Red)

EPA SAMPLE NO.

CP744 00727

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM26

Matrix: (soil/water) SOIL Lab Sample ID: CP744

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 52610EK14

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. 10 dec. ____ Date Extracted: 07/20/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 07/25/89

GPC Cleanup: (Y/N) N pH: 7.4 Dilution Factor: 10.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	18000	U
83-32-9	Acenaphthene	3700	U
51-28-5	2,4-Dinitrophenol	18000	U
100-02-7	4-Nitrophenol	18000	U
132-64-9	Dibenzofuran	3700	U
121-14-2	2,4-Dinitrotoluene	3700	U
84-66-2	Diethylphthalate	3700	U
7005-72-3	4-Chlorophenyl-phenyl Ether	3700	U
86-73-7	Fluorene	3700	U
100-01-6	4-Nitroaniline	18000	U
534-52-1	4,6-Dinitro-2-methylphenol	18000	U
86-30-6	N-Nitrosodiphenylamine (1)	3700	U
101-55-3	4-Bromophenyl-phenyl Ether	3700	U
118-74-1	Hexachlorobenzene	3700	U
87-86-5	Pentachlorophenol	18000	U
85-01-8	Phenanthrene	3700	U
120-12-7	Anthracene	3700	U
84-74-2	Di-n-butylphthalate	3700	U
206-44-0	Fluoranthene	3700	U
129-00-0	Pyrene	3700	U
85-68-7	Butylbenzylphthalate	3700	U
91-94-1	3,3'-Dichlorobenzidine	7300	U
56-55-3	Benzo(a)anthracene	3700	U
218-01-9	Chrysene	3700	U
117-81-7	bis(2-Ethylhexyl)phthalate	3700	U
117-84-0	Di-n-octylphthalate	3700	U
205-99-2	Benzo(b)fluoranthene	3700	U
207-08-9	Benzo(k)fluoranthene	3700	U
50-32-8	Benzo(a)pyrene	3700	U
193-39-5	Indeno(1,2,3-cd)pyrene	3700	U
53-70-3	Dibenz(a,h)anthracene	3700	U
191-24-2	Benzo(g,h,i)perylene	450	J

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

ORIGINAL (Red)

EPA SAMPLE NO.

CP744 00728

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM26

Matrix: (soil/water) SOIL Lab Sample ID: CP744

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 52610EK14

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. 10 dec. ____ Date Extracted: 07/20/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 07/25/89

GPC Cleanup: (Y/N) N pH: 7.4 Dilution Factor: 10.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

ORIGINAL (Red)

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CP744 01214

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: SDG No.: CC026

Matrix: (soil/water) SOIL Lab Sample ID: CP744 1/4 Y

Sample wt/vol: 30.0 (g/ml) G Lab File ID: PD-205-1045

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. 10 dec. Date Extracted: 07/20/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 07/27/89

GPC Cleanup: (Y/N) N pH: 7.4 Dilution Factor: 20.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/KG) ug/KG	Q
319-84-6	alpha-BHC	180	U
319-85-7	beta-BHC	180	U
319-86-8	delta-BHC	180	U
58-89-9	gamma-BHC(Lindane)	180	U
76-44-8	Heptachlor	180	U
309-00-2	Aldrin	180	U
1024-57-3	Heptachlor epoxide	180	U
959-98-8	Endosulfan I	180	U
60-57-1	Dieldrin	360	U
72-55-9	4,4'-DDE	360	U
72-20-8	Endrin	360	U
33213-65-9	Endosulfan II	360	U
72-54-8	4,4'-DDD	360	U
1031-07-8	Endosulfan sulfate	360	U
50-29-3	4,4'-DDT	360	U
72-43-5	Methoxychlor	1800	U
53494-70-5	Endrin Ketone	360	U
5103-71-9	alpha-Chlordane	1800	U
5103-74-2	gamma-Chlordane	1800	U
8001-35-2	Toxaphene	3600	U
12674-11-2	Aroclor-1016	1800	U
11104-28-2	Aroclor-1221	1800	U
11141-16-5	Aroclor-1232	1800	U
53469-21-9	Aroclor-1242	1800	U
12672-29-6	Aroclor-1248	1800	U
11097-69-1	Aroclor-1254	3600	U
11096-82-5	Aroclor-1260	3600	U

MB

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

ORIGINAL (Red)

EPA SAMPLE NO.

CQ623 0026

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM26

Matrix: (soil/water) SOIL Lab Sample ID: CQ623

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 52610EC19

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. 46 Date Analyzed: 07/19/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	19	U
74-83-9	Bromomethane	19	U
75-01-4	Vinyl Chloride	19	U
75-00-3	Chloroethane	19	U
75-09-2	Methylene Chloride	17	B
67-64-1	Acetone	19	U
75-15-0	Carbon Disulfide	9	U
75-35-4	1,1-Dichloroethene	9	U
75-34-3	1,1-Dichloroethane	9	U
540-59-0	1,2-Dichloroethene (total)	9	U
67-66-3	Chloroform	9	U
107-06-2	1,2-Dichloroethane	9	U
78-93-3	2-Butanone	19	U
71-55-6	1,1,1-Trichloroethane	9	U
56-23-5	Carbon Tetrachloride	9	U
108-05-4	Vinyl Acetate	19	U
75-27-4	Bromodichloromethane	9	U
78-87-5	1,2-Dichloropropane	9	U
10061-01-5	cis-1,3-Dichloropropene	9	U
79-01-6	Trichloroethene	9	U
124-48-1	Dibromochloromethane	9	U
79-00-5	1,1,2-Trichloroethane	9	U
71-43-2	Benzene	9	U
10061-02-6	trans-1,3-Dichloropropene	9	U
75-25-2	Bromoform	9	U
108-10-1	4-Methyl-2-Pentanone	19	U
591-78-6	2-Hexanone	19	U
127-18-4	Tetrachloroethene	9	U
79-34-5	1,1,2,2-Tetrachloroethane	9	U
108-88-3	Toluene	9	U
108-90-7	Chlorobenzene	9	U
100-41-4	Ethylbenzene	9	U
100-42-5	Styrene	9	U
1330-20-7	Xylenes (Total)	9	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

ORIGINAL (Red)

EPA SAMPLE NO.

CQ623RE 00269

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM26

Matrix: (soil/water) SOIL Lab Sample ID: CQ623RE

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 52610EC23

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. 46 Date Analyzed: 07/20/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	19	U
74-83-9	Bromomethane	19	U
75-01-4	Vinyl Chloride	19	U
75-00-3	Chloroethane	19	U
75-09-2	Methylene Chloride	340	B
67-64-1	Acetone	29	
75-15-0	Carbon Disulfide	9	U
75-35-4	1,1-Dichloroethene	9	U
75-34-3	1,1-Dichloroethane	9	U
540-59-0	1,2-Dichloroethene (total)	9	U
67-66-3	Chloroform	9	U
107-06-2	1,2-Dichloroethane	9	U
78-93-3	2-Butanone	19	U
71-55-6	1,1,1-Trichloroethane	9	U
56-23-5	Carbon Tetrachloride	9	U
108-05-4	Vinyl Acetate	19	U
75-27-4	Bromodichloromethane	9	U
78-87-5	1,2-Dichloropropane	9	U
10061-01-5	cis-1,3-Dichloropropene	9	U
79-01-6	Trichloroethene	9	U
124-48-1	Dibromochloromethane	9	U
79-00-5	1,1,2-Trichloroethane	9	U
71-43-2	Benzene	10	
10061-02-6	trans-1,3-Dichloropropene	9	U
75-25-2	Bromoform	9	U
108-10-1	4-Methyl-2-Pentanone	19	U
591-78-6	2-Hexanone	19	U
127-18-4	Tetrachloroethene	9	U
79-34-5	1,1,2,2-Tetrachloroethane	9	U
108-88-3	Toluene	9	U
108-90-7	Chlorobenzene	9	U
100-41-4	Ethylbenzene	9	U
100-42-5	Styrene	9	U
1330-20-7	Xylenes (Total)	9	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

ORIGINAL (Red)

EPA SAMPLE NO.

CQ623RE 00270

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM26

Matrix: (soil/water) SOIL Lab Sample ID: CQ623RE

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 52610EC23

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. 46 Date Analyzed: 07/20/89

Column (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

ORIGINAL (Red)

EPA SAMPLE NO.

CQ623 00261

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM26

Matrix: (soil/water) SOIL Lab Sample ID: CQ623

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 52610EC19

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. 46 Date Analyzed: 07/19/89

Column (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET ORIGINAL (Red)

EPA SAMPLE NO.

CQ623 00741

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM26

Matrix: (soil/water) SOIL Lab Sample ID: CQ623

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 52610REI4

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. 46 dec. ____ Date Extracted: 07/31/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 08/01/89

GPC Cleanup: (Y/N) N pH: 4.1 Dilution Factor: 10.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	6100	U
111-44-4	bis(2-Chloroethyl)Ether	6100	U
95-57-8	2-Chlorophenol	6100	U
541-73-1	1,3-Dichlorobenzene	6100	U
106-46-7	1,4-Dichlorobenzene	6100	U
100-51-6	Benzyl Alcohol	6100	U
95-50-1	1,2-Dichlorobenzene	6100	U
95-48-7	2-Methylphenol	6100	U
108-60-1	bis(2-Chloroisopropyl)Ether	6100	U
106-44-5	4-Methylphenol	6100	U
621-64-7	N-Nitroso-di-n-propylamine	6100	U
67-72-1	Hexachloroethane	6100	U
98-95-3	Nitrobenzene	6100	U
78-59-1	Isophorone	6100	U
88-75-5	2-Nitrophenol	6100	U
105-67-9	2,4-Dimethylphenol	6100	U
65-85-0	Benzoic Acid	30000	U
111-91-1	bis(2-Chloroethoxy)methane	6100	U
120-83-2	2,4-Dichlorophenol	6100	U
120-82-1	1,2,4-Trichlorobenzene	6100	U
91-20-3	Naphthalene	6100	U
106-47-8	4-Chloroaniline	6100	U
87-68-3	Hexachlorobutadiene	6100	U
59-50-7	4-Chloro-3-methylphenol	6100	U
91-57-6	2-Methylnaphthalene	6100	U
77-47-4	Hexachlorocyclopentadiene	6100	U
88-06-2	2,4,6-Trichlorophenol	6100	U
95-95-4	2,4,5-Trichlorophenol	30000	U
91-58-7	2-Chloronaphthalene	6100	U
88-74-4	2-Nitroaniline	30000	U
131-11-3	Dimethylphthalate	6100	U
208-96-8	Acenaphthylene	6100	U
606-20-2	2,6-Dinitrotoluene	6100	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

ORIGINAL (Red)

EPA SAMPLE NO.

CQ623 00742

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM26

Matrix: (soil/water) SOIL Lab Sample ID: CQ623

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 52610REI4

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. 46 dec. ____ Date Extracted: 07/31/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 08/01/89

GPC Cleanup: (Y/N) N pH: 4.1 Dilution Factor: 10.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	30000	U
83-32-9	Acenaphthene	6100	U
51-28-5	2,4-Dinitrophenol	30000	U
100-02-7	4-Nitrophenol	30000	U
132-64-9	Dibenzofuran	6100	U
121-14-2	2,4-Dinitrotoluene	6100	U
84-66-2	Diethylphthalate	6100	U
7005-72-3	4-Chlorophenyl-phenyl Ether	6100	U
86-73-7	Fluorene	6100	U
100-01-6	4-Nitroaniline	30000	U
534-52-1	4,6-Dinitro-2-methylphenol	30000	U
86-30-6	N-Nitrosodiphenylamine (1)	6100	U
101-55-3	4-Bromophenyl-phenyl Ether	6100	U
118-74-1	Hexachlorobenzene	6100	U
87-86-5	Pentachlorophenol	30000	U
85-01-8	Phenanthrene	2200	J
120-12-7	Anthracene	6100	U
84-74-2	Di-n-butylphthalate	6100	U
206-44-0	Fluoranthene	1200	J
129-00-0	Pyrene	2400	J
85-68-7	Butylbenzylphthalate	6100	U
91-94-1	3,3'-Dichlorobenzidine	12000	U
56-55-3	Benzo(a)anthracene	1400	J
218-01-9	Chrysene	2100	J
117-81-7	bis(2-Ethylhexyl)phthalate	6100	U
117-84-0	Di-n-octylphthalate	6100	U
205-99-2	Benzo(b)fluoranthene	6100	U
207-08-9	Benzo(k)fluoranthene	6100	U
50-32-8	Benzo(a)pyrene	6100	U
193-39-5	Indeno(1,2,3-cd)pyrene	6100	U
53-70-3	Dibenz(a,h)anthracene	6100	U
191-24-2	Benzo(g,h,i)perylene	6100	U

(1) - Cannot be separated from Diphenylamine

I S e 699, 921, 1248, 1524, 2036, 2312,

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

ORIGINAL (Red)

EPA SAMPLE NO.

CQ623 0074

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM26

Matrix: (soil/water) SOIL Lab Sample ID: CQ623

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 52610REI4

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. 46 dec. ____ Date Extracted: 07/31/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 08/01/89

GPC Cleanup: (Y/N) N pH: 4.1 Dilution Factor: 10.00

Number TICs found: 20

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 98-82-8	1-METHYLETHYL BENZENE C_9H_{12}	9.65	579 6800	J
2. 2049-95-8	1,1-DIMETHYLPROPYL BENZENE $C_{11}H_{16}$	13.52	811 8600	J
3. 99-62-7	1,3-BIS(1-METHYLETHYL)- $C_{12}H_{18}$	14.75	885 52000	J
4. 2040-07-5	1-(2,4,5-TRIMETHYLPHENYL)-Ethanone $C_{11}H_{14}O$	14.95	897 35000	J
5.	UNKNOWN Oxygen containing aromatic	15.19	911 51000	J
6. 1985-92-3	UNKNOWN 1-Ethyl-1-methyl propyl) benzene $C_{12}H_{18}$	15.54	932 22000	J
7. 6031-02-3	1-METHYLPENTYL BENZENE $C_{12}H_{18}$	15.64	938 9900	J
8. 1129-29-9	1-(1-METHYLETHENYL)-3-(1-methylethyl) benzene $C_{12}H_{16}$	16.04	962 4300	J
9. 1129-29-9	1-(1-METHYLETHENYL)-3- J	16.52	991 6200	J
10. 4951-40-0	UNKNOWN 3-(2,6,6-Trimethyl-1-cyclohexen-1-yl)-2-propenal $C_{12}H_{18}O$ tentative unknown	17.70	1062 16000	J
11. 27322-34-5	UNKNOWN 1,3,5-TRIS(1-methylethyl)-Benzene $C_{15}H_{24}$	18.22	1093 16000	J
12. 27322-34-5	TRIS(1-METHYLETHYL)-Benzene $C_{15}H_{24}$	18.59	1115 10000	J
13.	UNKNOWN unknown aromatic, possibly oxygen containing	19.27	1156 4900	J
14. ~~54789-16-1~~	~~1-(1-ETHYLPROPYL)-4-~~ unknown aromatic possibly oxygen contain	19.54	1172 5600	J
15. 26356-11-6	UNKNOWN (1,1,2-Trimethyl propyl)-Benzene $C_{12}H_{18}$	19.64	1178 4900	J
16. 1889-67-4	1,1'-(1,1,2,2-TETRAMETHYL-1,2-Ethanediyl)-Bis-Benzene $C_{18}H_{22}$	19.77	1186 8600	J
17. 54932-91-1	UNKNOWN 1-methyl-1-propyl pentyl-benzene $(C_{15}H_{24})$	20.37	1222 7400	J
18.	UNKNOWN Oxygen containing aromatic	21.14	1268 3100	J
19. 778-22-3	1,1'-(1-METHYLETHYLIDENE)-Bis-BENZENE $C_{15}H_{16}$	22.82	1309 15000	J
20. 3910-35-8	2,3-DIHYDRO-1,1,3-TRIMETHYL-3-PHENYL-1H-INDENE $(C_{18}H_{20})$	24.52	1471 32000	J

1-methylethyl benzene C_9H_{12} 98-82-8 — 6800

1,1-Dimethyl propyl benzene $C_{11}H_{16}$ 2049-95-8 — 8600

1-methylpentyl-benzene $C_{12}H_{18}$) 52000, 22000, 9900, 4900, 1,3,5-~~88600~~ (4)

1-(2,4,5-Trimethylphenyl) ethanone $C_{11}H_{14}O$ 2040-07-5 — 35,000

Oxygen containing aromatic 51,000, 4900, 5600, 3100 — 64600 (4)

1,1'-(1-methylethylidene)-Bis-Benzene $(C_{15}H_{16})$ 778-22-3 — 15,000

1-(1-methylethenyl)-3-(1-methylethyl)-Benzene $C_{12}H_{16}$ 1129-29-9 — 4300, 6200 — 10500 (2)

3-2,6,6-Trimethyl-1-Cyclohexen-1-yl)-2-propenal $C_{12}H_{18}O$ 4951-40-0 — 16000

Tris(1-methylethyl) benzene $C_{15}H_{24}$ 27322-34-5 — 10000, 6000

1,1,2-TRIMETHYL PROPYL-BENZENE $(C_{12}H_{18})$ 26356-11-6 — 4900

2,3-dihydro-1,1,3-trimethyl-3-phenyl-1H-Indene $C_{18}H_{20}$ 3910-35-8 — 32,000

1,1'-(1,1,2,2-TETRAMETHYL-1,2-ETHANEDIYL)-BIS-BENZENE $C_{18}H_{22}$ 8600

7400 — 33400 (3)

ORIGINAL (Red)

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CQ623 01222

Lab Name: IT CORPORATION Contract: 68-W8-0048

Lab Code: IT Case No.: 12281 SAS No.: SDG No.: CCM26

Matrix: (soil/water) SOIL Lab Sample ID: CQ623 Y

Sample wt/vol: 1.0 (g/ml) G Lab File ID: PD-205-1049

Level: (low/med) MED Date Received: 07/13/89

% Moisture: not dec. 46 dec. Date Extracted: 07/21/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 07/27/89

GPC Cleanup: (Y/N) N pH: 4.1 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/KG) ug/KG	Q
319-84-6	alpha-BHC	220	U
319-85-7	beta-BHC	220	U
319-86-8	delta-BHC	220	U
58-89-9	gamma-BHC(Lindane)	220	U
76-44-8	Heptachlor	220	U
309-00-2	Aldrin	220	U
1024-57-3	Heptachlor epoxide	220	U
959-98-8	Endosulfan I	220	U
60-57-1	Dieldrin	450	U
72-55-9	4,4'-DDE	450	U
72-20-8	Endrin	450	U
33213-65-9	Endosulfan II	450	U
72-54-8	4,4'-DDD	450	U
1031-07-8	Endosulfan sulfate	450	U
50-29-3	4,4'-DDT	450	U
72-43-5	Methoxychlor	2200	U
53494-70-5	Endrin Ketone	450	U
5103-71-9	alpha-Chlordane	2200	U
5103-74-2	gamma-Chlordane	2200	U
8001-35-2	Toxaphene	4500	U
12674-11-2	Aroclor-1016	2200	U
11104-28-2	Aroclor-1221	2200	U
11141-16-5	Aroclor-1232	2200	U
53469-21-9	Aroclor-1242	2200	U
12672-29-6	Aroclor-1248	2200	U
11097-69-1	Aroclor-1254	4500	U
11096-82-5	Aroclor-1260	4500	U

MBS

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

ORIGINAL (Red)

EPA SAMPLE NO.

CQ624 0028

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM26

Matrix: (soil/water) SOIL Lab Sample ID: CQ624

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 52610EC12

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. 24 Date Analyzed: 07/19/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	13	U
74-83-9	Bromomethane	13	U
75-01-4	Vinyl Chloride	13	U
75-00-3	Chloroethane	13	U
75-09-2	Methylene Chloride	11	B
67-64-1	Acetone	13	U
75-15-0	Carbon Disulfide	7	U
75-35-4	1,1-Dichloroethene	7	U
75-34-3	1,1-Dichloroethane	7	U
540-59-0	1,2-Dichloroethene (total)	7	U
67-66-3	Chloroform	7	U
107-06-2	1,2-Dichloroethane	7	U
78-93-3	2-Butanone	13	U
71-55-6	1,1,1-Trichloroethane	7	U
56-23-5	Carbon Tetrachloride	7	U
108-05-4	Vinyl Acetate	13	U
75-27-4	Bromodichloromethane	7	U
78-87-5	1,2-Dichloropropane	7	U
10061-01-5	cis-1,3-Dichloropropene	7	U
79-01-6	Trichloroethene	7	U
124-48-1	Dibromochloromethane	7	U
79-00-5	1,1,2-Trichloroethane	7	U
71-43-2	Benzene	7	U
10061-02-6	trans-1,3-Dichloropropene	7	U
75-25-2	Bromoform	7	U
108-10-1	4-Methyl-2-Pentanone	13	U
591-78-6	2-Hexanone	13	U
127-18-4	Tetrachloroethene	7	U
79-34-5	1,1,2,2-Tetrachloroethane	7	U
108-88-3	Toluene	7	U
108-90-7	Chlorobenzene	7	U
100-41-4	Ethylbenzene	7	U
100-42-5	Styrene	7	U
1330-20-7	Xylenes (Total)	7	U

ORIGINAL
(Red)

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

CQ624 00288

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM26

Matrix: (soil/water) SOIL Lab Sample ID: CQ624

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 52610EC12

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. 24 Date Analyzed: 07/19/89

Column (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

ORIGINAL (Red)

EPA SAMPLE NO.

CQ624 00788

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: SDG No.: CCM26

Matrix: (soil/water) SOIL Lab Sample ID: CQ624

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 52610REI10

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. 24 dec. Date Extracted: 07/31/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 08/09/89

GPC Cleanup: (Y/N) N pH: 4.2 Dilution Factor: 10.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	4300	U
111-44-4	bis(2-Chloroethyl)Ether	4300	U
95-57-8	2-Chlorophenol	4300	U
541-73-1	1,3-Dichlorobenzene	4300	U
106-46-7	1,4-Dichlorobenzene	4300	U
100-51-6	Benzyl Alcohol	4300	U
95-50-1	1,2-Dichlorobenzene	4300	U
95-48-7	2-Methylphenol	4300	U
108-60-1	bis(2-Chloroisopropyl)Ether	4300	U
106-44-5	4-Methylphenol	4300	U
621-64-7	N-Nitroso-di-n-propylamine	4300	U
67-72-1	Hexachloroethane	4300	U
98-95-3	Nitrobenzene	4300	U
78-59-1	Isophorone	4300	U
88-75-5	2-Nitrophenol	4300	U
105-67-9	2,4-Dimethylphenol	4300	U
65-85-0	Benzoic Acid	21000	U
111-91-1	bis(2-Chloroethoxy)methane	4300	U
120-83-2	2,4-Dichlorophenol	4300	U
120-82-1	1,2,4-Trichlorobenzene	4300	U
91-20-3	Naphthalene	4300	U
106-47-8	4-Chloroaniline	4300	U
87-68-3	Hexachlorobutadiene	4300	U
59-50-7	4-Chloro-3-methylphenol	4300	U
91-57-6	2-Methylnaphthalene	4300	U
77-47-4	Hexachlorocyclopentadiene	4300	U
88-06-2	2,4,6-Trichlorophenol	4300	U
95-95-4	2,4,5-Trichlorophenol	21000	U
91-58-7	2-Chloronaphthalene	4300	U
88-74-4	2-Nitroaniline	21000	U
131-11-3	Dimethylphthalate	4300	U
208-96-8	Acenaphthylene	4300	U
606-20-2	2,6-Dinitrotoluene	4300	U

ORIGINAL (Red)

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CQ624 00789

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM26

Matrix: (soil/water) SOIL Lab Sample ID: CQ624

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 52610REI10

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. 24 dec. ____ Date Extracted: 07/31/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 08/09/89

GPC Cleanup: (Y/N) N pH: 4.2 Dilution Factor: 10.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	21000	U
83-32-9	Acenaphthene	4300	U
51-28-5	2,4-Dinitrophenol	21000	U
100-02-7	4-Nitrophenol	21000	U
132-64-9	Dibenzofuran	4300	U
121-14-2	2,4-Dinitrotoluene	4300	U
84-66-2	Diethylphthalate	4300	U
7005-72-3	4-Chlorophenyl-phenyl Ether	4300	U
86-73-7	Fluorene	4300	U
100-01-6	4-Nitroaniline	21000	U
534-52-1	4,6-Dinitro-2-methylphenol	21000	U
86-30-6	N-Nitrosodiphenylamine (1)	4300	U
101-55-3	4-Bromophenyl-phenyl Ether	4300	U
118-74-1	Hexachlorobenzene	4300	U
87-86-5	Pentachlorophenol	21000	U
85-01-8	Phenanthrene	3400	J
120-12-7	Anthracene	710	J
84-74-2	Di-n-butylphthalate	4300	U
206-44-0	Fluoranthene	3300	J
129-00-0	Pyrene	2500	J
85-68-7	Butylbenzylphthalate	4300	U
91-94-1	3,3'-Dichlorobenzidine	8700	U
56-55-3	Benzo(a)anthracene	1200	J
218-01-9	Chrysene	1600	J
117-81-7	bis(2-Ethylhexyl)phthalate	4300	U
117-84-0	Di-n-octylphthalate	4300	U
205-99-2	Benzo(b)fluoranthene	4300	U
207-08-9	Benzo(k)fluoranthene	4300	U
50-32-8	Benzo(a)pyrene	4300	U
193-39-5	Indeno(1,2,3-cd)pyrene	4300	U
53-70-3	Dibenz(a,h)anthracene	4300	U
191-24-2	Benzo(g,h,i)perylene	4300	U

(1) - Cannot be separated from Diphenylamine

IS e 665, 884, 1208, 1483, 1994, 2269

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

ORIGINAL (Red)

EPA SAMPLE NO.

CQ624 0079

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: SDG No.: CCM26

Matrix: (soil/water) SOIL Lab Sample ID: CQ624

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 52610REI10

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. 24 dec. Date Extracted: 07/31/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 08/09/89

GPC Cleanup: (Y/N) N pH: 4.2 Dilution Factor: 10.00

Number TICs found: 11

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 98-82-8	1-METHYLETHYL BENZENE C_9H_{12}	9.09	545 1800	J
2.	UNKNOWN VHC	11.92	715 1800	J
3. 99-62-7	1,3-BIS(1-METHYLETHYL)-BENZENE $C_{12}H_{18}$	14.15	849 3500	J
4. 99-62-7	UNKNOWN 1,3-BIS(1-METHYLETHYL)-BENZENE $C_{12}H_{18}$	14.34	860 2200	J
5.	UNKNOWN $C_{12}H_{18}$ alkylbenzene	14.59	875 3100	J
6.	DIMETHYL(METHYLETHYL)BENZENE $C_{12}H_{18}$	16.64	998 5700	J
7. 717-74-8	1,3,5-TRIS(1-METHYLETHYL)-BENZENE $C_{15}H_{24}$	17.64	1058 2200	J
8. 717-74-8	TRIS(1-METHYLETHYL)BENZENE $C_{15}H_{24}$	17.99	1079 2200	J
9. 87-85-4	HEXAMETHYL BENZENE $C_{12}H_{18}$	19.67	1180 2600	J
10. 3910-35-8	2,3-DIHYDRO-1,1,3-TRIMETHYL-3-PHENYL-1H-INDENE $C_{18}H_{20}$	23.85	1431 3900	J
11. 205-82-3	UNKNOWN BENZO(J)FLUORANTHENE $(C_{20}H_{12})$	36.61	2196 1800	J

VHC
1800

1,3-BIS(1-METHYLETHYL)-BENZENE ($C_{12}H_{18}$)
CAS# 99-62-7
3500
2200
3100
5700
2600
17100 (5)

1-METHYLETHYL BENZENE (C_9H_{12})
CAS# 98-82-8
1800 ISO

1,3,5-TRIS(1-METHYLETHYL) BENZENE ($C_{15}H_{24}$)
CAS# 717-74-8
2200
2200
4400 (2) ISO

2,3-DIHYDRO-1,1,3-TRIMETHYL-3-PHENYL-1H-INDENE ($C_{18}H_{20}$)
CAS# 3910-35-8
3900 ISO

Benzo (J) Fluoranthene
$C_{20}H_{12}$
1800 ISO

ORIGINAL (Red)

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CD624 01226

Lab Name: IT CERRITOS Contract: 68-W8-0048

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM26

Matrix: (soil/water) SOIL Lab Sample ID: CD624 Y

Sample wt/vol: 1.0 (g/ml) G Lab File ID: PD-205-1050

Level: (low/med) MED Date Received: 07/13/89

% Moisture: not dec. 24 dec. ____ Date Extracted: 07/21/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 07/27/89

GPC Cleanup: (Y/N) N pH: 4.2 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/KG) ug/KG	Q
319-84-6	alpha-BHC	160	U
319-85-7	beta-BHC	160	U
319-86-8	delta-BHC	160	U
58-89-9	gamma-BHC(Lindane)	160	U
76-44-8	Heptachlor	160	U
309-00-2	Aldrin	160	U
1024-57-3	Heptachlor epoxide	160	U
959-98-8	Endosulfan I	160	U
60-57-1	Dieldrin	310	U
72-55-9	4,4'-DDE	310	U
72-20-8	Endrin	310	U
33213-65-9	Endosulfan II	310	U
72-54-8	4,4'-DDD	310	U
1031-07-8	Endosulfan sulfate	310	U
50-29-3	4,4'-DDT	310	U
72-43-5	Methoxychlor	1600	U
53494-70-5	Endrin Ketone	310	U
5103-71-9	alpha-Chlordane	1600	U
5103-74-2	gamma-Chlordane	1600	U
8001-35-2	Toxaphene	3100	U
12674-11-2	Aroclor-1016	1600	U
11104-28-2	Aroclor-1221	1600	U
11141-16-5	Aroclor-1232	1600	U
53469-21-9	Aroclor-1242	1600	U
12672-29-6	Aroclor-1248	1600	U
11097-69-1	Aroclor-1254	3100	U
11096-82-5	Aroclor-1260	3100	U

MB

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

ORIGINAL (Red)

EPA SAMPLE NO.

CW504 00258

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Matrix: (soil/water) WATER Lab Sample ID: CW504

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 52611EC20

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ Date Analyzed: 07/21/89

Column: (pack/cap) PACK Dilution Factor: 1.56

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		Q
74-87-3	Chloromethane	16	U
74-83-9	Bromomethane	16	U
75-01-4	Vinyl Chloride	16	U
75-00-3	Chloroethane	16	U
75-09-2	Methylene Chloride	28	B
67-64-1	Acetone	10	BJ
75-15-0	Carbon Disulfide	8	U
75-35-4	1,1-Dichloroethene	8	U
75-34-3	1,1-Dichloroethane	8	U
540-59-0	1,2-Dichloroethene (total)	8	U
67-66-3	Chloroform	8	U
107-06-2	1,2-Dichloroethane	8	U
78-93-3	2-Butanone	16	U
71-55-6	1,1,1-Trichloroethane	8	U
56-23-5	Carbon Tetrachloride	8	U
108-05-4	Vinyl Acetate	16	U
75-27-4	Bromodichloromethane	8	U
78-87-5	1,2-Dichloropropane	8	U
10061-01-5	cis-1,3-Dichloropropene	8	U
79-01-6	Trichloroethene	8	U
124-48-1	Dibromochloromethane	8	U
79-00-5	1,1,2-Trichloroethane	8	U
71-43-2	Benzene	190	
10061-02-6	trans-1,3-Dichloropropene	8	U
75-25-2	Bromoform	8	U
108-10-1	4-Methyl-2-Pentanone	16	U
591-78-6	2-Hexanone	16	U
127-18-4	Tetrachloroethene	8	U
79-34-5	1,1,2,2-Tetrachloroethane	8	U
108-88-3	Toluene	5	J
108-90-7	Chlorobenzene	8	U
100-41-4	Ethylbenzene	8	
100-42-5	Styrene	8	U
1330-20-7	Xylenes (Total)	12	

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

ORIGINAL (Red)

EPA SAMPLE NO.

CW504 00259

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Matrix: (soil/water) WATER Lab Sample ID: CW504

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 52611EC20

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ Date Analyzed: 07/21/89

Column (pack/cap) PACK Dilution Factor: 1.56

Number TICs found: 6

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME		RT	EST. CONC.	Q
1. 287-92-3	CYCLOPENTANE(DOT)	SHC	4.70	141 120	J
2.	~~UNKNOWN~~ ~~HC~~	SHC	5.93	178 16	J
3. 109-66-0	PENTANE(ACN)(DOT)	SHC	6.97	209 9	J
4. 110-82-7	CYCLOHEXANE(DOT)	C_6H_{12}	7.53	226 47	J
5. 96-37-7	METHYL CYCLOPENTANE	C_6H_{12}	8.03	241 31	J
6. 110-83-8	CYCLOHEXENE	C_6H_{10}	8.54	256 9	J

SHC
120
16
9
145

Cyclohexane C_6H_{12}
47
31
78 (2) 150

Cyclohexene C_6H_{10}
9

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

ORIGINAL (Red)

EPA SAMPLE NO.

CW504 00657

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Matrix: (soil/water) WATER Lab Sample ID: CW504

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 52611EI4

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ dec. ____ Date Extracted: 07/15/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 07/18/89

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 4.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	40	U
111-44-4	bis(2-Chloroethyl)Ether	40	U
95-57-8	2-Chlorophenol	40	U
541-73-1	1,3-Dichlorobenzene	40	U
106-46-7	1,4-Dichlorobenzene	40	U
100-51-6	Benzyl Alcohol	40	U
95-50-1	1,2-Dichlorobenzene	40	U
95-48-7	2-Methylphenol	40	U
108-60-1	bis(2-Chloroisopropyl)Ether	40	U
106-44-5	4-Methylphenol	40	U
621-64-7	N-Nitroso-di-n-propylamine	40	U
67-72-1	Hexachloroethane	40	U
98-95-3	Nitrobenzene	40	U
78-59-1	Isophorone	40	U
88-75-5	2-Nitrophenol	40	U
105-67-9	2,4-Dimethylphenol	40	U
65-85-0	Benzoic Acid	200	U
111-91-1	bis(2-Chloroethoxy)methane	40	U
120-83-2	2,4-Dichlorophenol	40	U
120-82-1	1,2,4-Trichlorobenzene	40	U
91-20-3	Naphthalene	10	J
106-47-8	4-Chloroaniline	40	U
87-68-3	Hexachlorobutadiene	40	U
59-50-7	4-Chloro-3-methylphenol	40	U
91-57-6	2-Methylnaphthalene	40	U
77-47-4	Hexachlorocyclopentadiene	40	U
88-06-2	2,4,6-Trichlorophenol	40	U
95-95-4	2,4,5-Trichlorophenol	200	U
91-58-7	2-Chloronaphthalene	40	U
88-74-4	2-Nitroaniline	200	U
131-11-3	Dimethylphthalate	40	U
208-96-8	Acenaphthylene	40	U
606-20-2	2,6-Dinitrotoluene	40	U

1C

ORIGINAL (Red)

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CW504 00658

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Matrix: (soil/water) WATER Lab Sample ID: CW504

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 52611EI4

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ dec. ____ Date Extracted: 07/15/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 07/18/89

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 4.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	200	U
83-32-9	Acenaphthene	40	U
51-28-5	2,4-Dinitrophenol	200	U
100-02-7	4-Nitrophenol	200	U
132-64-9	Dibenzofuran	40	U
121-14-2	2,4-Dinitrotoluene	40	U
84-66-2	Diethylphthalate	40	U
7005-72-3	4-Chlorophenyl-phenyl Ether	40	U
86-73-7	Fluorene	40	U
100-01-6	4-Nitroaniline	200	U
534-52-1	4,6-Dinitro-2-methylphenol	200	U
86-30-6	N-Nitrosodiphenylamine (1)	40	U
101-55-3	4-Bromophenyl-phenyl Ether	40	U
118-74-1	Hexachlorobenzene	40	U
87-86-5	Pentachlorophenol	200	U
85-01-8	Phenanthrene	40	U
120-12-7	Anthracene	40	U
84-74-2	Di-n-butylphthalate	40	U
206-44-0	Fluoranthene	40	U
129-00-0	Pyrene	40	U
85-68-7	Butylbenzylphthalate	40	U
91-94-1	3,3'-Dichlorobenzidine	80	U
56-55-3	Benzo(a)anthracene	40	U
218-01-9	Chrysene	40	U
117-81-7	bis(2-Ethylhexyl)phthalate	40	U
117-84-0	Di-n-octylphthalate	40	U
205-99-2	Benzo(b)fluoranthene	40	U
207-08-9	Benzo(k)fluoranthene	40	U
50-32-8	Benzo(a)pyrene	40	U
193-39-5	Indeno(1,2,3-cd)pyrene	40	U
53-70-3	Dibenz(a,h)anthracene	40	U
191-24-2	Benzo(g,h,i)perylene	40	U

(1) - Cannot be separated from Diphenylamine

I S e 601, 812, 1128, 1395, 1890, 2147

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

ORIGINAL (Red)

EPA SAMPLE NO.

CW504 0065

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Matrix: (soil/water) WATER Lab Sample ID: CW504

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 52611EI4

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ dec. ____ Date Extracted: 07/15/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 07/18/89

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 4.00

Number TICs found: 20

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	Scan	EST. CONC.	Q
1.	UNKNOWN HYDROCARBON UHC	19.77	1186	960	J
2.	UNKNOWN HYDROCARBON SHC	22.14	1328	72	J
3.	UNKNOWN HYDROCARBON UHC	29.69	1781	160	J
4. 119-47-1	UNKNOWN 2,2'-methylene bis-(1,1-dimethylethyl)-4-methyl phenol ($C_{23}H_{32}O_2$)	31.02	1861	80	J
5.	UNKNOWN HYDROCARBON SHC	34.14	2048	160	J
6.	UNKNOWN HYDROCARBON UHC, poss oxygen subst	34.29	2057	160	J
7.	UNKNOWN HYDROCARBON UHC	34.46	2067	160	J
8.	UNKNOWN HYDROCARBON UHC	34.79	2087	240	J
9.	UNKNOWN HYDROCARBON UHC	34.96	2097	160	J
10.	UNKNOWN HYDROCARBON UHC	35.11	2106	240	J
11.	UNKNOWN HYDROCARBON UHC	35.92	2155	240	J
12.	UNKNOWN HYDROCARBON SHC	36.42	2185	240	J
13.	UNKNOWN HYDROCARBON UHC	36.74	2204	240	J
14.	UNKNOWN HYDROCARBON UHC, poss S cont	36.22	2173	2600	J
15.	UNKNOWN HYDROCARBON UHC	36.92	2215	320	J
16.	UNKNOWN HYDROCARBON SHC	37.42	2245	320	J
17.	UNKNOWN HYDROCARBON SHC	37.61	2256	240	J
18.	UNKNOWN HYDROCARBON unknown	38.16	2289	320	J
19.	UNKNOWN HYDROCARBON UHC	38.41	2304	400	J
20.	UNKNOWN HYDROCARBON SHC	39.06	2343	160	J

Unsat HC	Saturated HC	UHC, possibly oxygen subs	UHC, poss S cont	Unknown	2,2'-methylene-bis(-1,1-dimethylethyl)-4-methyl phenol $C_{23}H_{32}O_2$ CAS 119-47-1
960	72	160	2600	320	80
160	160				
160	240				
240	320				
160	240				
240	160				
240	1192 (6)				
240					
320					
400					
3120 (10)					

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

ORIGINAL (Red)

EPA SAMPLE NO.

CW504 0100

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Matrix: (soil/water) WATER Lab Sample ID: CW504 1/4

Sample wt/vol: 1000 (g/ml) ML Lab File ID: PO-198-1028

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ dec. ____ Date Extracted: 07/14/89

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 07/18/89

GPC Cleanup: (Y/N) N pH: ___ Dilution Factor: 4.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/KG) ug/L	Q
319-84-6	alpha-BHC	0.20	U
319-85-7	beta-BHC	0.20	U
319-86-8	delta-BHC	0.20	U
58-89-9	gamma-BHC(Lindane)	0.20	U
76-44-8	Heptachlor	0.20	U
309-00-2	Aldrin	0.20	U
1024-57-3	Heptachlor epoxide	0.20	U
959-98-8	Endosulfan I	0.20	U
60-57-1	Dieldrin	0.40	U
72-55-9	4,4'-DDE	0.40	U
72-20-8	Endrin	0.40	U
33213-65-9	Endosulfan II	0.40	U
72-54-8	4,4'-DDD	0.40	U
1031-07-8	Endosulfan sulfate	0.40	U
50-29-3	4,4'-DDT	0.40	U
72-43-5	Methoxychlor	2.00	U
53494-70-5	Endrin Ketone	0.40	U
5103-71-9	alpha-Chlordane	2.00	U
5103-74-2	gamma-Chlordane	2.00	U
8001-35-2	Toxaphene	4.00	U
12674-11-2	Aroclor-1016	2.00	U
11104-28-2	Aroclor-1221	2.00	U
11141-16-5	Aroclor-1232	2.00	U
53469-21-9	Aroclor-1242	2.00	U
12672-29-6	Aroclor-1248	2.00	U
11097-69-1	Aroclor-1254	4.00	U
11096-82-5	Aroclor-1260	4.00	U

MB

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

ORIGINAL (Red)

EPA SAMPLE NO.

CW505 00286

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Matrix: (soil/water) WATER Lab Sample ID: CW505

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 52611EC12

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ Date Analyzed: 07/20/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	B
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	2	J
75-34-3	1,1-Dichloroethane	2	J
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	1	J
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylenes (Total)	5	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

ORIGINAL (Red)

EPA SAMPLE NO.

CW505 0028

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Matrix: (soil/water) WATER Lab Sample ID: CW505

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 52611EC12

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ Date Analyzed: 07/20/89

Column (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

ORIGINAL (Red)

EPA SAMPLE NO.

CW505 00697

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Matrix: (soil/water) WATER Lab Sample ID: CW505

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 52611EI3

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ dec. ____ Date Extracted: 07/15/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 07/18/89

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
100-51-6	Benzyl Alcohol	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	bis(2-Chloroisopropyl)Ether	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
65-85-0	Benzoic Acid	50	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	50	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	50	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U

ISe 693, 910, 1238, 1515, 2036, 2305

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

ORIGINAL (Red)

EPA SAMPLE NO.

CN938 0062

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM26

Matrix: (soil/water) SOIL Lab Sample ID: CN938

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 52610REJ2

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. 26 dec. ____ Date Extracted: 07/31/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 08/10/89

GPC Cleanup: (Y/N) N pH: 8.2 Dilution Factor: 10.00

Number TICs found: 20

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 98-82-8	1-METHYLETHYL BENZENE C_9H_{12}	9.69	581 2700	J
2.	UNKNOWN UHC	11.79	707 3600	J
3. 2040-07-5	UNKNOWN 1-(2,4,5-trimethyl phenyl) ethanone $C_{11}H_{14}O$	14.55	873 2700	J
4. 1985-57-5	1,1-DIMETHYLBUTYL BENZENE $C_{12}H_{18}$	15.04	902 4500	J
5. 700-12-9	PENTAMETHYL BENZENE $C_{12}H_{18}$	17.12	1027 5400	J
6. 5392-82-5	~~UNKNOWN~~ 1,4-DICHLORO-2-ISOCYANATO-BENZENE $C_7H_3ONCl_2$	17.57	1054 3200	J
7. 27322-34-5	TRIS(1-METHYLETHYL) Benz $C_{18}H_{24}$	18.12	1087 3600	J
8. 27322-34-5	TRIS(1-METHYLETHYL)- Benzene $C_{15}H_{24}$	18.49	1109 3600	J
9. ~~[illegible]~~ 16728-99-7	~~UNKNOWN~~ 1,2,3,4,4A,7-Hexahydro-1,6-dimethyl-4-(1-methylethyl) naphthalene ($C_{15}H_{24}$)	19.40	1164 2300	J
10.	aromatic aldehyde eg 2,5-dimethyl benzaldehyde	19.50	1170 3200	J
11.	~~UNKNOWN~~ phenol, unk structure	20.29	1217 5000	J
12. 635-11-0	1,2,4,5-TETRAKIS-(1-methylethyl) benzene $C_{18}H_{30}$	20.74	1244 4100	J
13. 54789-15-0	UNKNOWN 1-(1-ethyl propyl)-2-propyl-benzene ($C_{14}H_{22}$)	20.85	1251 2300	J
14.	UNKNOWN UHC	21.17	1270 2700	J
15.	UNKNOWN Oxygen cont unknown, poss sterol	21.74	1304 2300	J
16.	UNKNOWN unknown	22.19	1337 2300	J
17.	UNKNOWN unknown, poss $C_{15}H_{24}$ naphthalene deriv	22.49	1349 3200	J
18.	UNKNOWN unknown, poss $C_{15}H_{24}$ naphthalene deriv	23.09	1385 4500	J
19.	UNKNOWN UHC	23.94	1436 3600	J
20.	UNKNOWN unknown	26.16	1569 1800	J

UHC 3600 2700 1600 900(3)

1-(2,4,5-TRIMETHYL (PHENYL) ETHANONE $C_{11}H_{14}O$ 2700 iso

1-methylethyl benzene (C_9H_{12} CAS # 98-82-8 2700 iso

1,1-dimethyl butyl benzene ($C_{12}H_{18}$ CAS# 1985-57-5 4500 iso 5400 4700(2)

unknown 2300 ~~3200~~ 1800 4700(2)

~~pentamethyl benzene $C_{12}H_{18}$ CAS# 700-12-9~~

phenol, unknown structure 3200 unk

1,4-DICHLORO-2-ISOCYANATO-BENZENE $C_7H_3ONCl_2$ CAS# 5392-82-5 3200

TRIS-(1-METHYLETHYL) - Benzene $C_{15}H_{24}$ CAS# 27322-34-5 3600 3600 iso 7200(2) iso

hexahydro-dimethyl 4-(1-methylethyl) naphthalene $C_{15}H_{24}$ 2300 iso

poss $C_{15}H_{24}$ naphthalene derivative 3200 4500 7700(2)

aromatic aldehyde eg 2,5-dimethyl benzaldehyde 5000 unk

1,2,4,5-tetrakis-(1-methylethyl) benzene ($C_{18}H_{30}$ CAS# 635-11-0 4100 iso

Oxygen cont unk, poss sterol 2300

1-(1ethylpropyl)-2-propyl benzene $C_{14}H_{22}$ (CAS# 54789-15-0 2300 iso

FORM I SV-TIC 1/87 Rev.

PESTICIDE ORGANICS ANALYSIS DATA SHEET

ORIGINAL (Red)

EPA SAMPLE NO.

CN978 01200

Lab Name: [illegible] Contract: [illegible]

Lab Code: [illegible] Case No.: [illegible] SAS No.: _____ SDG No.: C M26

Matrix: (soil/water) SOIL Lab Sample ID: [illegible]

Sample Wt (g/ml): 1.0 (g/ml) G Lab File ID: [illegible]

Level: (low/med) MED Date Received: 07/[illegible]/89

% Moisture: not dec. [illegible] dec. ____ Date Extracted: 07/[illegible]/89

Extraction: (SonF/Cont/Sonc) SONC Date Analyzed: 07/[illegible]/89

GPC Cleanup: (Y/N) [illegible] pH: 8.2 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/KG) ug/KG	Q
319-84-6	alpha-BHC	160	U
319-85-7	beta-BHC	160	U
319-86-8	delta-BHC	160	U
58-89-9	gamma-BHC(Lindane)	160	U
76-44-8	Heptachlor	160	U
309-00-2	Aldrin	160	U
1024-57-3	Heptachlor epoxide	160	U
959-98-8	Endosulfan I	160	U
60-57-1	Dieldrin	320	U
72-55-9	4,4'-DDE	320	U
72-20-8	Endrin	320	U
33213-65-9	Endosulfan II	320	U
72-54-8	4,4'-DDD	320	U
1031-07-8	Endosulfan sulfate	320	U
50-29-3	4,4'-DDT	320	U
72-43-5	Methoxychlor	1600	U
53494-70-5	Endrin Ketone	320	U
5103-71-9	alpha-Chlordane	1600	U
5103-74-2	gamma-Chlordane	1600	U
8001-35-2	Toxaphene	3200	U
12674-11-2	Aroclor-1016	1600	U
11104-28-2	Aroclor-1221	1600	U
11141-16-5	Aroclor-1232	1600	U
53469-21-9	Aroclor-1242	1600	U
12672-29-6	Aroclor-1248	1600	U
11097-69-1	Aroclor-1254	3200	U
11096-82-5	Aroclor-1260	3200	U

Mrs

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

ORIGINAL (Red)

EPA SAMPLE NO.

CN939 00247

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Matrix: (soil/water) WATER Lab Sample ID: CN939

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 52611EC11

Level: (low/med) LOW Date Received: 07/14/89

% Moisture: not dec. ____ Date Analyzed: 07/20/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	4	BJ
67-64-1	Acetone	2	J
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylenes (Total)	5	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

ORIGINAL (Red)

EPA SAMPLE NO.

CN939 00248

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Matrix: (soil/water) WATER Lab Sample ID: CN939

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 52611EC11

Level: (low/med) LOW Date Received: 07/14/89

% Moisture: not dec. ____ Date Analyzed: 07/20/89

Column (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

ORIGINAL (Red)

EPA SAMPLE NO.

CN939 00622

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Matrix: (soil/water) WATER Lab Sample ID: CN939

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 52611EJ10

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ dec. ____ Date Extracted: 07/15/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 07/18/89

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
100-51-6	Benzyl Alcohol	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	bis(2-Chloroisopropyl)Ether	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
65-85-0	Benzoic Acid	50	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	50	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	50	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

ORIGINAL (Red)

EPA SAMPLE NO.

CN939 0062

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Matrix: (soil/water) WATER Lab Sample ID: CN939

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 52611EJ10

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ dec. ____ Date Extracted: 07/15/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 07/18/89

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	50	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	50	U
100-02-7	4-Nitrophenol	50	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenyl Ether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	50	U
534-52-1	4,6-Dinitro-2-methylphenol	50	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenyl Ether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	50	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	20	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	U
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

Use 744, 966, 1307, 1588, 2117, 2392

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

ORIGINAL (Red)

EPA SAMPLE NO.

CN939 0062

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Matrix: (soil/water) WATER Lab Sample ID: CN939

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 52611EJ10

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ dec. ____ Date Extracted: 07/15/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 07/18/89

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.00

Number TICs found: 20

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 10544-50-0	MOLECULAR SULFUR(S8)	30.27	1816 8	J
2.	UNKNOWN Oxygen cont unknown	32.67	1966 20	J
3.	UNKNOWN	34.67	16	J
4. 85-60-9	4,4'-BUTYLIDENEBIS-(1,1-dimethylethyl)-5-methyl-phenol	37.64	2258 $C_{26}H_{38}O_2$ 10	J
5.	UNKNOWN HYDROCARBON unknown HC	38.37	2302 24	J
6.	UNKNOWN HYDROCARBON unsat HC	38.89	2332 22	J
7.	UNKNOWN HYDROCARBON unsat HC	39.46	2367 36	J
8.	UNKNOWN HYDROCARBON unknown HC	40.84	2450 26	J
9.	UNKNOWN HYDROCARBON unsat HC	40.97	2458 20	J
10.	UNKNOWN HYDROCARBON unsat HC	41.39	2483 20	J
11.	UNKNOWN HYDROCARBON unsat HC, poss cyclic	41.96	2517 42	J
12.	UNKNOWN HYDROCARBON unknown	42.28	2536 34	J
13.	UNKNOWN HYDROCARBON unsat HC	42.54	2552 28	J
14.	UNKNOWN HYDROCARBON unsat HC	42.84	2570 30	J
15.	UNKNOWN HYDROCARBON unsat HC	43.14	2588 22	J
16.	UNKNOWN HYDROCARBON unsat HC	43.36	2601 42	J
17.	UNKNOWN HYDROCARBON unsat HC	43.66	2619 28	J
18.	UNKNOWN HYDROCARBON unsat HC	43.88	2632 20	J
19.	UNKNOWN HYDROCARBON unsat HC	44.23	2653 24	J
20.	UNKNOWN HYDROCARBON unsat HC	44.71	2682 30	J

unsat HC: 22, 36, 0, 10, 28, 0, 12, 42, 28, 0, 4, 30 — 322 (12)

Sulfur: 8

Oxygen cont unknown: 20

4,4'-butylidenebis(2-1,1-dimethylethyl)-5-methyl-phenol $C_{26}H_{38}O_2$ CAS# 85-60-9: 10

Unknown

Unknown HC: 24, 24, 34 — 82 (3)

unsat HC, poss cyclic: 42

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET ORIGINAL (Red)

EPA SAMPLE NO.

CW505 00698

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Matrix: (soil/water) WATER Lab Sample ID: CW505

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 52611EI3

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ dec. ____ Date Extracted: 07/15/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 07/18/89

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	50	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	50	U
100-02-7	4-Nitrophenol	50	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenyl Ether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	50	U
534-52-1	4,6-Dinitro-2-methylphenol	50	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenyl Ether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	50	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	20	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	U
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

ORIGINAL (Red)

EPA SAMPLE NO.

CW505RE

00716

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Matrix: (soil/water) WATER Lab Sample ID: CW505RE

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 52611EI9

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ dec. ____ Date Extracted: 07/19/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 07/21/89

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
100-51-6	Benzyl Alcohol	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	bis(2-Chloroisopropyl)Ether	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
65-85-0	Benzoic Acid	50	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	50	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	50	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

ORIGINAL (Red)

EPA SAMPLE NO.

CW505RE

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: SDG No.: CCM17 007

Matrix: (soil/water) WATER Lab Sample ID: CW505RE

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 52611EI9

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ dec. ____ Date Extracted: 07/19/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 07/21/89

GPC Cleanup: (Y/N) N pH: ____ Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	50	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	50	U
100-02-7	4-Nitrophenol	50	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenyl Ether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	50	U
534-52-1	4,6-Dinitro-2-methylphenol	50	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenyl Ether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	50	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	20	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	U
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

Ise 597, 811, 1128, 1395, 1890, 2141

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

ORIGINAL (Red)

EPA SAMPLE NO.

CW505 00699

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Matrix: (soil/water) WATER Lab Sample ID: CW505

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 52611EI3

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ dec. ____ Date Extracted: 07/15/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 07/18/89

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.00

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN Oxygen cont HC	9.19	581 20	J
2. 143-07-7	UNKNOWN Dodecanoic acid $C_{12}H_{24}O_2$	20.19	1211 18	J
3.	UNKNOWN oxygen cont unknown	29.12	1747 10	J

Oxygen cont HC
20

Dodecanoic acid
$C_{12}H_{24}O_2$ CAS #143-07-7
18

Oxygen cont unknown
10

20
30 (2)

Ise 587, 801, 1116, 1382, 1876, 2127

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

ORIGINAL (Red)

EPA SAMPLE NO.

CW505RE 0071

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Matrix: (soil/water) WATER Lab Sample ID: CW505RE

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 52611EI9

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ dec. ____ Date Extracted: 07/19/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 07/21/89

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.00

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.		Q
1. 108-94-1	CYCLOHEXANONE(ACN) ($C_6H_{10}O$)	6.98	419	14	J
2. ~~97-78-9~~ 143-07-7	DODECANOIC ACID $C_{12}H_{24}O_2$	19.95	1197	~~8~~	~~J~~ ← [illegible]
3. 85-60-9	4,4'-BUTYLIDENEBIS-[2,1,1-dimethylethyl)-5-methyl-phenol	33.59	2015	14	J

Cyclohexanone
CAS 108-94-1
14

DODECANOIC ACID
$C_{12}H_{24}O_2$
~~8~~ ← [illegible]

4,4'-Butylidenebis
-2,1,1-dimethylethyl
-5-methylphenol
14 iso

ID

PESTICIDE ORGANICS ANALYSIS DATA SHEET

ORIGINAL (Red)

EPA SAMPLE NO.

CW505 01013

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM17

Matrix: (soil/water) WATER Lab Sample ID: CW505

Sample wt/vol: 1000 (g/ml) ML Lab File ID: PO-198-1033

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ dec. ____ Date Extracted: 07/14/89

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 07/18/89

GPC Cleanup: (Y/N) N pH: ____ Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/KG) ug/L	Q
319-84-6	alpha-BHC	0.05	U
319-85-7	beta-BHC	0.05	U
319-86-8	delta-BHC	0.05	U
58-89-9	gamma-BHC(Lindane)	0.05	U
76-44-8	Heptachlor	0.05	U
309-00-2	Aldrin	0.05	U
1024-57-3	Heptachlor epoxide	0.05	U
959-98-8	Endosulfan I	0.05	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin Ketone	0.10	U
5103-71-9	alpha-Chlordane	0.50	U
5103-74-2	gamma-Chlordane	0.50	U
8001-35-2	Toxaphene	1.00	U
12674-11-2	Aroclor-1016	0.50	U
11104-28-2	Aroclor-1221	0.50	U
11141-16-5	Aroclor-1232	0.50	U
53469-21-9	Aroclor-1242	0.50	U
12672-29-6	Aroclor-1248	0.50	U
11097-69-1	Aroclor-1254	1.00	U
11096-82-5	Aroclor-1260	1.00	U

MD

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET ORIGINAL (Red)

EPA SAMPLE NO.

CN938 00225

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: SDG No.: CCM26

Matrix: (soil/water) SOIL Lab Sample ID: CN938

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 52610EC15

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. 26 Date Analyzed: 07/19/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	14	U
74-83-9	Bromomethane	14	U
75-01-4	Vinyl Chloride	14	U
75-00-3	Chloroethane	14	U
75-09-2	Methylene Chloride	9	B
67-64-1	Acetone	14	U
75-15-0	Carbon Disulfide	7	U
75-35-4	1,1-Dichloroethene	7	U
75-34-3	1,1-Dichloroethane	7	U
540-59-0	1,2-Dichloroethene (total)	7	U
67-66-3	Chloroform	7	U
107-06-2	1,2-Dichloroethane	7	U
78-93-3	2-Butanone	14	U
71-55-6	1,1,1-Trichloroethane	7	U
56-23-5	Carbon Tetrachloride	7	U
108-05-4	Vinyl Acetate	14	U
75-27-4	Bromodichloromethane	7	U
78-87-5	1,2-Dichloropropane	7	U
10061-01-5	cis-1,3-Dichloropropene	7	U
79-01-6	Trichloroethene	7	U
124-48-1	Dibromochloromethane	7	U
79-00-5	1,1,2-Trichloroethane	7	U
71-43-2	Benzene	7	U
10061-02-6	trans-1,3-Dichloropropene	7	U
75-25-2	Bromoform	7	U
108-10-1	4-Methyl-2-Pentanone	14	U
591-78-6	2-Hexanone	14	U
127-18-4	Tetrachloroethene	7	U
79-34-5	1,1,2,2-Tetrachloroethane	7	U
108-88-3	Toluene	7	U
108-90-7	Chlorobenzene	7	U
100-41-4	Ethylbenzene	7	U
100-42-5	Styrene	7	U
1330-20-7	Xylenes (Total)	7	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

ORIGINAL (Red)

EPA SAMPLE NO.

CN938 00226

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM26

Matrix: (soil/water) SOIL Lab Sample ID: CN938

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 52610EC15

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. 26 Date Analyzed: 07/19/89

Column (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET ORIGINAL (Red)

EPA SAMPLE NO.

CN938 00627

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: SDG No.: CCM26

Matrix: (soil/water) SOIL Lab Sample ID: CN938

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 52610REJ2

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. 26 dec. Date Extracted: 07/31/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 08/10/89

GPC Cleanup: (Y/N) N pH: 8.2 Dilution Factor: 10.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	22000	U
83-32-9	Acenaphthene	4500	U
51-28-5	2,4-Dinitrophenol	22000	U
100-02-7	4-Nitrophenol	22000	U
132-64-9	Dibenzofuran	4500	U
121-14-2	2,4-Dinitrotoluene	4500	U
84-66-2	Diethylphthalate	4500	U
7005-72-3	4-Chlorophenyl-phenyl Ether	4500	U
86-73-7	Fluorene	4500	U
100-01-6	4-Nitroaniline	22000	U
534-52-1	4,6-Dinitro-2-methylphenol	22000	U
86-30-6	N-Nitrosodiphenylamine (1)	4500	U
101-55-3	4-Bromophenyl-phenyl Ether	4500	U
118-74-1	Hexachlorobenzene	4500	U
87-86-5	Pentachlorophenol	22000	U
85-01-8	Phenanthrene	1400	J
120-12-7	Anthracene	490	J
84-74-2	Di-n-butylphthalate	4500	U
206-44-0	Fluoranthene	1100	J
129-00-0	Pyrene	1100	J
85-68-7	Butylbenzylphthalate	4500	U
91-94-1	3,3'-Dichlorobenzidine	8900	U
56-55-3	Benzo(a)anthracene	4500	U
218-01-9	Chrysene	750	J
117-81-7	bis(2-Ethylhexyl)phthalate	4500	U
117-84-0	Di-n-octylphthalate	4500	U
205-99-2	Benzo(b)fluoranthene	4500	U
207-08-9	Benzo(k)fluoranthene	4500	U
50-32-8	Benzo(a)pyrene	4500	U
193-39-5	Indeno(1,2,3-cd)pyrene	4500	U
53-70-3	Dibenz(a,h)anthracene	4500	U
191-24-2	Benzo(g,h,i)perylene	4500	U

(1) - Cannot be separated from Diphenylamine

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

ORIGINAL (Red)

EPA SAMPLE NO.

CN938 00626

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12281 SAS No.: _____ SDG No.: CCM26

Matrix: (soil/water) SOIL Lab Sample ID: CN938

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 52610REJ2

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. 26 dec. ____ Date Extracted: 07/31/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 08/10/89

GPC Cleanup: (Y/N) N pH: 8.2 Dilution Factor: 10.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	4500	U
111-44-4	bis(2-Chloroethyl)Ether	4500	U
95-57-8	2-Chlorophenol	4500	U
541-73-1	1,3-Dichlorobenzene	4500	U
106-46-7	1,4-Dichlorobenzene	4500	U
100-51-6	Benzyl Alcohol	4500	U
95-50-1	1,2-Dichlorobenzene	4500	U
95-48-7	2-Methylphenol	4500	U
108-60-1	bis(2-Chloroisopropyl)Ether	4500	U
106-44-5	4-Methylphenol	4500	U
621-64-7	N-Nitroso-di-n-propylamine	4500	U
67-72-1	Hexachloroethane	4500	U
98-95-3	Nitrobenzene	4500	U
78-59-1	Isophorone	4500	U
88-75-5	2-Nitrophenol	4500	U
105-67-9	2,4-Dimethylphenol	4500	U
65-85-0	Benzoic Acid	22000	U
111-91-1	bis(2-Chloroethoxy)methane	4500	U
120-83-2	2,4-Dichlorophenol	4500	U
120-82-1	1,2,4-Trichlorobenzene	4500	U
91-20-3	Naphthalene	4500	U
106-47-8	4-Chloroaniline	4500	U
87-68-3	Hexachlorobutadiene	4500	U
59-50-7	4-Chloro-3-methylphenol	4500	U
91-57-6	2-Methylnaphthalene	4500	U
77-47-4	Hexachlorocyclopentadiene	4500	U
88-06-2	2,4,6-Trichlorophenol	4500	U
95-95-4	2,4,5-Trichlorophenol	22000	U
91-58-7	2-Chloronaphthalene	4500	U
88-74-4	2-Nitroaniline	22000	U
131-11-3	Dimethylphthalate	4500	U
208-96-8	Acenaphthylene	4500	U
606-20-2	2,6-Dinitrotoluene	4500	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

ORIGINAL (Red)

EPA SAMPLE NO.

CN939 01005

Lab Name: IT CERRITOS Contract: 68-W8-0068

Lab Code: IT Case No.: 12231 SAS No.: _____ SDG No.: CC012

Matrix: (soil/water) WATER Lab Sample ID: CN939

Sample wt/vol: 1000 (g/ml) ML Lab File ID: PC-198-1034

Level: (low/med) LOW Date Received: 07/13/89

% Moisture: not dec. ____ dec. ____ Date Extracted: 07/14/89

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 07/18/89

GPC Cleanup: (Y/N) N pH: 7 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/KG) ug/L	Q
319-84-6	alpha-BHC	0.05	U
319-85-7	beta-BHC	0.05	U
319-86-8	delta-BHC	0.05	U
58-89-9	gamma-BHC(Lindane)	0.05	U
76-44-8	Heptachlor	0.05	U
309-00-2	Aldrin	0.05	U
1024-57-3	Heptachlor epoxide	0.05	U
959-98-8	Endosulfan I	0.05	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin Ketone	0.10	U
5103-71-9	alpha-Chlordane	0.50	U
5103-74-2	gamma-Chlordane	0.50	U
8001-35-2	Toxaphene	1.00	U
12674-11-2	Aroclor-1016	0.50	U
11104-28-2	Aroclor-1221	0.50	U
11141-16-5	Aroclor-1232	0.50	U
53469-21-9	Aroclor-1242	0.50	U
12672-29-6	Aroclor-1248	0.50	U
11097-69-1	Aroclor-1254	1.00	U
11096-82-5	Aroclor-1260	1.00	U

CMB

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

ORIGINAL (Red)

EPA SAMPLE NO.

MCBD00

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 12281 SAS No.: SDG No.: MCBD00

Matrix (soil/water): WATER Lab Sample ID: 07080-01S

Level (low/med): LOW Date Received: 07/13/89

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	58800.00			P
7440-36-0	Antimony	26.60	U		P
7440-38-2	Arsenic	18.30		N*	F
7440-39-3	Barium	485.00			P
7440-41-7	Beryllium	4.70	B		P
7440-41-7	Cadmium	3.70	B	*	P
7440-70-2	Calcium	88500.00			P
7440-47-3	Chromium	167.00			P
7440-48-4	Cobalt	65.40			P
7440-50-8	Copper	75.20			P
7439-89-6	Iron	219000.00			P
7439-92-1	Lead	47.30			F
7439-95-4	Magnesium	30500.00			P
7439-96-5	Manganese	5290.00			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	102.00			P
7440-09-7	Potassium	25200.00			P
7782-49-2	Selenium	9.00	U	NE	F
7440-22-4	Silver	8.40	U	N	P
7440-23-5	Sodium	12900.00			P
7440-28-0	Thallium	2.10	U		F
7440-62-2	Vanadium	184.00			P
7440-66-6	Zinc	311.00			P
	Cyanide	10.00	U	N*	AS

Color Before: BROWN Clarity Before: OPAQUE Texture:

Color After: BROWN Clarity After: OPAQUE Artifacts:

Comments:

U.S. EPA - CLP

ORIGINAL (Red)

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MCBD02

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 12281 SAS No.: SDG No.: MCBD00

Matrix (soil/water): WATER Lab Sample ID: 07080-02S

Level (low/med): LOW Date Received: 07/13/89

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	13000.00			P
7440-36-0	Antimony	26.60	U		P
7440-38-2	Arsenic	10.70		N*	F
7440-39-3	Barium	248.00			P
7440-41-7	Beryllium	1.50	U		P
7440-41-7	Cadmium	3.40	U	*	P
7440-70-2	Calcium	38900.00			P
7440-47-3	Chromium	22.60			P
7440-48-4	Cobalt	8.90	B		P
7440-50-8	Copper	18.80	B		P
7439-89-6	Iron	63900.00			P
7439-92-1	Lead	16.70			F
7439-95-4	Magnesium	19700.00			P
7439-96-5	Manganese	6940.00			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	16.50	B		P
7440-09-7	Potassium	14700.00			P
7782-49-2	Selenium	1.80	U	NW	F
7440-22-4	Silver	8.40	U	N	P
7440-23-5	Sodium	23100.00			P
7440-28-0	Thallium	2.10	U		F
7440-62-2	Vanadium	30.10	B		P
7440-66-6	Zinc	62.20			P
	Cyanide	10.00	U	N*	AS

Color Before: BROWN Clarity Before: OPAQUE Texture:

Color After: BROWN Clarity After: OPAQUE Artifacts:

0003

Comments:

U.S. EPA - CLP

ORIGINAL (Red)

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MCBD03

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 12281 SAS No.: SDG No.: MCBD00

Matrix (soil/water): WATER Lab Sample ID: 07080-03S

Level (low/med): LOW Date Received: 07/13/89

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	8090.00			P
7440-36-0	Antimony	26.60	U		P
7440-38-2	Arsenic	1.40	U	N*	F
7440-39-3	Barium	72.20	B		P
7440-41-7	Beryllium	1.50	U		P
7440-41-7	Cadmium	3.40	U	*	P
7440-70-2	Calcium	2170.00	B		P
7440-47-3	Chromium	23.70			P
7440-48-4	Cobalt	13.60	B		P
7440-50-8	Copper	22.30	B		P
7439-89-6	Iron	18500.00			P
7439-92-1	Lead	13.50			F
7439-95-4	Magnesium	5550.00			P
7439-96-5	Manganese	244.00			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	26.20	B		P
7440-09-7	Potassium	6230.00			P
7782-49-2	Selenium	9.00	U	NW	F
7440-22-4	Silver	8.40	U	N	P
7440-23-5	Sodium	8170.00			P
7440-28-0	Thallium	2.10	U		F
7440-62-2	Vanadium	26.00	B		P
7440-66-6	Zinc	69.50			P
	Cyanide	10.00	U	N*	AS

Color Before: BROWN Clarity Before: OPAQUE Texture:

Color After: BROWN Clarity After: OPAQUE Artifacts:

0004

Comments:

U.S. EPA - CLP

ORIGINAL (Red)

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MCBD12

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 12281 SAS No.: SDG No.: MCBD00

Matrix (soil/water): WATER Lab Sample ID: 07080-04S

Level (low/med): LOW Date Received: 07/13/89

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	174.00	B		P
7440-36-0	Antimony	26.60	U		P
7440-38-2	Arsenic	1.40	U	N*	F
7440-39-3	Barium	62.00	B		P
7440-41-7	Beryllium	1.50	U		P
7440-41-7	Cadmium	3.40	U	*	P
7440-70-2	Calcium	30000.00			P
7440-47-3	Chromium	3.90	U		P
7440-48-4	Cobalt	5.00	U		P
7440-50-8	Copper	7.30	B		P
7439-89-6	Iron	575.00			P
7439-92-1	Lead	3.60	B		F
7439-95-4	Magnesium	12200.00			P
7439-96-5	Manganese	61.90			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	8.20	B		P
7440-09-7	Potassium	4040.00	B		P
7782-49-2	Selenium	1.80	U	N	F
7440-22-4	Silver	8.40	U	N	P
7440-23-5	Sodium	20700.00			P
7440-28-0	Thallium	2.10	U	W	F
7440-62-2	Vanadium	7.50	B		P
7440-66-6	Zinc	27.90			P
	Cyanide	10.00	U	N*	AS

Color Before: COLORLESS Clarity Before: CLOUDY Texture:

Color After: COLORLESS Clarity After: CLOUDY Artifacts:

0005

Comments:

U.S. EPA - CLP

ORIGINAL (Red)

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MCBD13

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 12281 SAS No.: SDG No.: MCBD00

Matrix (soil/water): WATER Lab Sample ID: 07080-05S

Level (low/med): LOW Date Received: 07/13/89

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	138.00	B		P
7440-36-0	Antimony	26.60	U		P
7440-38-2	Arsenic	1.40	U	N*	F
7440-39-3	Barium	62.30	B		P
7440-41-7	Beryllium	1.50	U		P
7440-41-7	Cadmium	3.40	U	*	P
7440-70-2	Calcium	30100.00			P
7440-47-3	Chromium	3.90	U		P
7440-48-4	Cobalt	5.00	U		P
7440-50-8	Copper	6.40	B		P
7439-89-6	Iron	517.00			P
7439-92-1	Lead	3.00	B		F
7439-95-4	Magnesium	12200.00			P
7439-96-5	Manganese	60.70			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	8.10	U		P
7440-09-7	Potassium	4110.00	B		P
7782-49-2	Selenium	1.80	U	N	F
7440-22-4	Silver	8.40	U	N	P
7440-23-5	Sodium	20900.00			P
7440-28-0	Thallium	2.10	U	W	F
7440-62-2	Vanadium	5.00	U		P
7440-66-6	Zinc	9.40	B		P
	Cyanide	10.00	U	N*	AS

Color Before: COLORLESS Clarity Before: CLOUDY Texture:

Color After: COLORLESS Clarity After: CLOUDY Artifacts:

Comments:

0006

U.S. EPA - CLP

ORIGINAL (Red)

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MCBD14

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 12281 SAS No.: SDG No.: MCBD00

Matrix (soil/water): WATER Lab Sample ID: 07080-06S

Level (low/med): LOW Date Received: 07/13/89

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	717.00			P
7440-36-0	Antimony	26.60	U		P
7440-38-2	Arsenic	1.40	U	N*	F
7440-39-3	Barium	87.50	B		P
7440-41-7	Beryllium	1.50	U		P
7440-41-7	Cadmium	3.40	U	*	P
7440-70-2	Calcium	31800.00			P
7440-47-3	Chromium	8.00	B		P
7440-48-4	Cobalt	5.00	U		P
7440-50-8	Copper	56.50			P
7439-89-6	Iron	1990.00			P
7439-92-1	Lead	16.00			F
7439-95-4	Magnesium	13000.00			P
7439-96-5	Manganese	110.00			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	13.40	B		P
7440-09-7	Potassium	4230.00	B		P
7782-49-2	Selenium	1.80	U	N	F
7440-22-4	Silver	8.40	U	N	P
7440-23-5	Sodium	21600.00			P
7440-28-0	Thallium	2.10	U	W	F
7440-62-2	Vanadium	8.20	B		P
7440-66-6	Zinc	48.00			P
	Cyanide	10.00	U	N*	AS

Color Before: COLORLESS Clarity Before: CLOUDY Texture:

Color After: COLORLESS Clarity After: CLOUDY Artifacts:

Comments:

0007

U.S. EPA - CLP

ORIGINAL (Red)

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MCBD15

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 12281 SAS No.: SDG No.: MCBD00

Matrix (soil/water): WATER Lab Sample ID: 07080-07S

Level (low/med): LOW Date Received: 07/13/89

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	344.00			P
7440-36-0	Antimony	26.60	U		P
7440-38-2	Arsenic	1.40	U	N*	F
7440-39-3	Barium	10.60	B		P
7440-41-7	Beryllium	1.50	U		P
7440-41-7	Cadmium	3.40	U	*	P
7440-70-2	Calcium	32500.00			P
7440-47-3	Chromium	3.90	U		P
7440-48-4	Cobalt	5.00	U		P
7440-50-8	Copper	8.20	B		P
7439-89-6	Iron	606.00			P
7439-92-1	Lead	4.90	B		F
7439-95-4	Magnesium	7840.00			P
7439-96-5	Manganese	115.00			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	11.80	B		P
7440-09-7	Potassium	4590.00	B		P
7782-49-2	Selenium	1.80	U	N	F
7440-22-4	Silver	8.40	U	N	P
7440-23-5	Sodium	14600.00			P
7440-28-0	Thallium	2.10	U	W	F
7440-62-2	Vanadium	25.30	B		P
7440-66-6	Zinc	8.80	B		P
	Cyanide	10.00	U	N*	AS

Color Before: COLORLESS Clarity Before: CLOUDY Texture:

Color After: COLORLESS Clarity After: CLOUDY Artifacts:

Comments:

0008

U.S. EPA - CLP

ORIGINAL (Red)

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MCBD16

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 12281 SAS No.: SDG No.: MCBD00

Matrix (soil/water): WATER Lab Sample ID: 07080-08S

Level (low/med): LOW Date Received: 07/13/89

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	146.00	B		P
7440-36-0	Antimony	26.60	U		P
7440-38-2	Arsenic	1.40	U	N*	F
7440-39-3	Barium	55.80	B		P
7440-41-7	Beryllium	1.50	U		P
7440-41-7	Cadmium	3.40	U	*	P
7440-70-2	Calcium	23200.00			P
7440-47-3	Chromium	3.90	U		P
7440-48-4	Cobalt	5.00	U		P
7440-50-8	Copper	6.90	B		P
7439-89-6	Iron	745.00			P
7439-92-1	Lead	3.50	B		F
7439-95-4	Magnesium	6150.00			P
7439-96-5	Manganese	111.00			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	8.80	B		P
7440-09-7	Potassium	3530.00	B		P
7782-49-2	Selenium	1.80	U	N	F
7440-22-4	Silver	8.40	U	N	P
7440-23-5	Sodium	7130.00			P
7440-28-0	Thallium	2.10	U	W	F
7440-62-2	Vanadium	11.20	B		P
7440-66-6	Zinc	11.30	B		P
	Cyanide	10.00	U	N*	AS

Color Before: COLORLESS Clarity Before: CLOUDY Texture:

Color After: COLORLESS Clarity After: CLOUDY Artifacts:

Comments:

0009

U.S. EPA - CLP ORIGINAL (Red)

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MCBD24

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 12281 SAS No.: SDG No.: MCBD00

Matrix (soil/water): WATER Lab Sample ID: 07080-09S

Level (low/med): LOW Date Received: 07/13/89

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	29.50	U		P
7440-36-0	Antimony	26.60	U		P
7440-38-2	Arsenic	1.40	U	N*	F
7440-39-3	Barium	1.60	U		P
7440-41-7	Beryllium	1.50	U		P
7440-41-7	Cadmium	3.40	U	*	P
7440-70-2	Calcium	70.20	B		P
7440-47-3	Chromium	3.90	U		P
7440-48-4	Cobalt	5.00	U		P
7440-50-8	Copper	5.80	B		P
7439-89-6	Iron	30.20	B		P
7439-92-1	Lead	0.90	U		F
7439-95-4	Magnesium	52.30	B		P
7439-96-5	Manganese	1.70	U		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	12.40	B		P
7440-09-7	Potassium	132.00	U		P
7782-49-2	Selenium	1.80	U	N	F
7440-22-4	Silver	8.40	U	N	P
7440-23-5	Sodium	74.60	B		P
7440-28-0	Thallium	2.10	U		F
7440-62-2	Vanadium	5.60	B		P
7440-66-6	Zinc	7.60	B		P
	Cyanide	10.00	U	N*	AS

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

0010

U.S. EPA - CLP

ORIGINAL (Red)

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MCP962

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 12281 SAS No.: SDG No.: MCBD00

Matrix (soil/water): WATER Lab Sample ID: 07080-10S

Level (low/med): LOW Date Received: 07/13/89

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	993000.00			P
7440-36-0	Antimony	26.60	U		P
7440-38-2	Arsenic	7.00	U	N*W	F
7440-39-3	Barium	2850.00			P
7440-41-7	Beryllium	12.50			P
7440-41-7	Cadmium	18.50		*	P
7440-70-2	Calcium	133000.00			P
7440-47-3	Chromium	179.00			P
7440-48-4	Cobalt	156.00			P
7440-50-8	Copper	363.00			P
7439-89-6	Iron	177000.00			P
7439-92-1	Lead	607.00			F
7439-95-4	Magnesium	66000.00			P
7439-96-5	Manganese	5150.00			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	974.00			P
7440-09-7	Potassium	16800.00			P
7782-49-2	Selenium	18.00	U	NE	F
7440-22-4	Silver	8.40	U	N	P
7440-23-5	Sodium	34100.00			P
7440-28-0	Thallium	2.10	B		F
7440-62-2	Vanadium	2320.00			P
7440-66-6	Zinc	1280.00			P
	Cyanide	10.00	U	N*	AS

Color Before: BROWN Clarity Before: OPAQUE Texture:

Color After: BROWN Clarity After: OPAQUE Artifacts:

Comments:

0011

U.S. EPA - CLP

ORIGINAL (Red)

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MCW073

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 12281 SAS No.: SDG No.: MCBD00

Matrix (soil/water): WATER Lab Sample ID: 07080-11S

Level (low/med): LOW Date Received: 07/13/89

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	92000.00			P
7440-36-0	Antimony	26.60	U		P
7440-38-2	Arsenic	27.90	B	N*E	F
7440-39-3	Barium	277.00			P
7440-41-7	Beryllium	5.20			P
7440-41-7	Cadmium	6.00		*	P
7440-70-2	Calcium	142000.00			P
7440-47-3	Chromium	191.00			P
7440-48-4	Cobalt	392.00			P
7440-50-8	Copper	156.00			P
7439-89-6	Iron	139000.00			P
7439-92-1	Lead	165.00			F
7439-95-4	Magnesium	87700.00			P
7439-96-5	Manganese	2380.00			P
7439-97-6	Mercury	10.00	U		CV
7440-02-0	Nickel	174.00			P
7440-09-7	Potassium	21900.00			P
7782-49-2	Selenium	9.00	U	NE	F
7440-22-4	Silver	8.40	U	N	P
7440-23-5	Sodium	127000.00			P
7440-28-0	Thallium	2.10	U		F
7440-62-2	Vanadium	455.00			P
7440-66-6	Zinc	1550.00			P
	Cyanide	17.60		N*	AS

Color Before: BROWN Clarity Before: OPAQUE Texture:

Color After: BROWN Clarity After: OPAQUE Artifacts:

Comments:

0012

U.S. EPA - CLP

ORIGINAL (Red)

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MCW074

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 12281 SAS No.: SDG No.: MCBD00

Matrix (soil/water): WATER Lab Sample ID: 07080-12S

Level (low/med): LOW Date Received: 07/13/89

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2090.00			P
7440-36-0	Antimony	26.60	U		P
7440-38-2	Arsenic	2.90	B	N*	F
7440-39-3	Barium	56.50	B		P
7440-41-7	Beryllium	1.50	U		P
7440-41-7	Cadmium	3.40	U	*	P
7440-70-2	Calcium	38800.00			P
7440-47-3	Chromium	11.20			P
7440-48-4	Cobalt	5.00	U		P
7440-50-8	Copper	9.20	B		P
7439-89-6	Iron	18100.00			P
7439-92-1	Lead	4.80	B		F
7439-95-4	Magnesium	15900.00			P
7439-96-5	Manganese	1470.00			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	26.80	B		P
7440-09-7	Potassium	6280.00			P
7782-49-2	Selenium	1.80	U	NW	F
7440-22-4	Silver	8.40	U	N	P
7440-23-5	Sodium	74100.00			P
7440-28-0	Thallium	2.10	U	W	F
7440-62-2	Vanadium	9.40	B		P
7440-66-6	Zinc	44.20			P
	Cyanide	10.00	U	N*	AS

Color Before: COLORLESS Clarity Before: CLOUDY Texture:

Color After: COLORLESS Clarity After: CLOUDY Artifacts:

Comments:

0013

ORIGINAL
(Red)

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MCBD04

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 12281 SAS No.: SDG No.: MCBD04

Matrix (soil/water): WATER Lab Sample ID: 07067-01S

Level (low/med): LOW Date Received: 07/13/89

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	32.10	B		P
7440-36-0	Antimony	26.60	U		P
7440-38-2	Arsenic	14.10	B	N*E	F
7440-39-3	Barium	98.60	B	E	P
7440-41-7	Beryllium	1.50	U		P
7440-41-7	Cadmium	3.40	U		P
7440-70-2	Calcium	58000.00			P
7440-47-3	Chromium	9.10	B		P
7440-48-4	Cobalt	72.20			P
7440-50-8	Copper	7.00	B		P
7439-89-6	Iron	98.70	B		P
7439-92-1	Lead	8.80			F
7439-95-4	Magnesium	72400.00			P
7439-96-5	Manganese	310.00			P
7439-97-6	Mercury	0.20	U	N	CV
7440-02-0	Nickel	61.80			P
7440-09-7	Potassium	16100.00			P
7782-49-2	Selenium	10.50	U	NE	F
7440-22-4	Silver	8.40	U	N	P
7440-23-5	Sodium	128000.00			P
7440-28-0	Thallium	1.30	U	NW	F
7440-62-2	Vanadium	7.10	B		P
7440-66-6	Zinc	79.20			P
	Cyanide				NR

Color Before: YELLOW Clarity Before: CLOUDY Texture:

Color After: YELLOW Clarity After: CLOUDY Artifacts:

Comments:

DISSOLVED METALS

ORIGINAL (Red)

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MCBD05

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 12281 SAS No.: SDG No.: MCBD04

Matrix (soil/water): WATER Lab Sample ID: 07067-02S

Level (low/med): LOW Date Received: 07/13/89

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	29.50	U		P
7440-36-0	Antimony	26.60	U		P
7440-38-2	Arsenic	2.50	B	N*	F
7440-39-3	Barium	69.10	B	E	P
7440-41-7	Beryllium	1.50	U		P
7440-41-7	Cadmium	3.40	U		P
7440-70-2	Calcium	77700.00			P
7440-47-3	Chromium	3.90	U		P
7440-48-4	Cobalt	5.00	U		P
7440-50-8	Copper	3.20	B		P
7439-89-6	Iron	32000.00			P
7439-92-1	Lead	1.00	U		F
7439-95-4	Magnesium	12200.00			P
7439-96-5	Manganese	2750.00			P
7439-97-6	Mercury	0.20	U	N	CV
7440-02-0	Nickel	8.10	U		P
7440-09-7	Potassium	7940.00			P
7782-49-2	Selenium	2.10	U	NW	F
7440-22-4	Silver	8.40	U	N	P
7440-23-5	Sodium	12400.00			P
7440-28-0	Thallium	1.30	U	N	F
7440-62-2	Vanadium	5.00	U		P
7440-66-6	Zinc	9.90	B		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

DISSOLVED METALS

ORIGINAL
(Red)

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MCBD06

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 12281 SAS No.: SDG No.: MCBD04

Matrix (soil/water): WATER Lab Sample ID: 07067-03S

Level (low/med): LOW Date Received: 07/13/89

Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	29.50	U		P
7440-36-0	Antimony	26.60	U		P
7440-38-2	Arsenic	1.60	U	N*	F
7440-39-3	Barium	33.30	B	E	P
7440-41-7	Beryllium	1.50	U		P
7440-41-7	Cadmium	3.40	U		P
7440-70-2	Calcium	38000.00			P
7440-47-3	Chromium	3.90	U		P
7440-48-4	Cobalt	5.00	U		P
7440-50-8	Copper	17.40	B		P
7439-89-6	Iron	28.80	B		P
7439-92-1	Lead	1.00	U		F
7439-95-4	Magnesium	15500.00			P
7439-96-5	Manganese	1470.00			P
7439-97-6	Mercury	0.20	U	N	CV
7440-02-0	Nickel	8.10	U		P
7440-09-7	Potassium	5800.00			P
7782-49-2	Selenium	2.10	U	NW	F
7440-22-4	Silver	8.40	U	N	P
7440-23-5	Sodium	85500.00			P
7440-28-0	Thallium	6.50	U	NW	F
7440-62-2	Vanadium	5.00	U		P
7440-66-6	Zinc	7.40	B		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

DISSOLVED METALS

ORIGINAL (Red)

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MCBD07

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 12281 SAS No.: SDG No.: MCBD04

Matrix (soil/water): WATER Lab Sample ID: 07067-04S

Level (low/med): LOW Date Received: 07/13/89

Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	29.50	U		P
7440-36-0	Antimony	26.60	U		P
7440-38-2	Arsenic	1.60	U	N*	F
7440-39-3	Barium	73.70	B	E	P
7440-41-7	Beryllium	1.50	U		P
7440-41-7	Cadmium	3.40	U		P
7440-70-2	Calcium	78700.00			P
7440-47-3	Chromium	3.90	U		P
7440-48-4	Cobalt	5.00	U		P
7440-50-8	Copper	3.10	U		P
7439-89-6	Iron	128.00			P
7439-92-1	Lead	1.00	U		F
7439-95-4	Magnesium	39300.00			P
7439-96-5	Manganese	2320.00			P
7439-97-6	Mercury	0.20	U	N	CV
7440-02-0	Nickel	27.70	B		P
7440-09-7	Potassium	967.00	B		P
7782-49-2	Selenium	2.10	U	NW	F
7440-22-4	Silver	8.40	U	N	P
7440-23-5	Sodium	20600.00			P
7440-28-0	Thallium	1.30	U	NW	F
7440-62-2	Vanadium	5.00	U		P
7440-66-6	Zinc	8.00	B		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

DISSOLVED METALS

ORIGINAL (Red)

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MCBD09

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 12281 SAS No.: SDG No.: MCBD04

Matrix (soil/water): WATER Lab Sample ID: 07067-05S

Level (low/med): LOW Date Received: 07/13/89

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	29.50	U		P
7440-36-0	Antimony	26.60	U		P
7440-38-2	Arsenic	0.54	U	N*S	F
7440-39-3	Barium	132.00	B	E	P
7440-41-7	Beryllium	1.50	U		P
7440-41-7	Cadmium	3.40	U		P
7440-70-2	Calcium	40500.00			P
7440-47-3	Chromium	3.90	U		P
7440-48-4	Cobalt	5.00	U		P
7440-50-8	Copper	5.40	B		P
7439-89-6	Iron	7290.00			P
7439-92-1	Lead	1.60	B		F
7439-95-4	Magnesium	18800.00			P
7439-96-5	Manganese	6610.00			P
7439-97-6	Mercury	0.20	U	N	CV
7440-02-0	Nickel	8.10	U		P
7440-09-7	Potassium	14900.00			P
7782-49-2	Selenium	2.10	U	NW	F
7440-22-4	Silver	8.40	U	N	P
7440-23-5	Sodium	24300.00			P
7440-28-0	Thallium	1.30	U	NW	F
7440-62-2	Vanadium	5.00	U		P
7440-66-6	Zinc	26.60			P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

DISSOLVED METALS

ORIGINAL
(Red)

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MCBD10

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 12281 SAS No.: SDG No.: MCBD04

Matrix (soil/water): WATER Lab Sample ID: 07067-06S

Level (low/med): LOW Date Received: 07/13/89

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	29.50	U		P
7440-36-0	Antimony	26.60	U		P
7440-38-2	Arsenic	3.00	B	N*	F
7440-39-3	Barium	1.60	U	E	P
7440-41-7	Beryllium	1.50	U		P
7440-41-7	Cadmium	3.40	U		P
7440-70-2	Calcium	1840.00	B		P
7440-47-3	Chromium	3.90	U		P
7440-48-4	Cobalt	5.00	U		P
7440-50-8	Copper	4.80	B		P
7439-89-6	Iron	6.80	U		P
7439-92-1	Lead	1.00	U		F
7439-95-4	Magnesium	1000.00	B		P
7439-96-5	Manganese	30.00			P
7439-97-6	Mercury	0.20	U	N	CV
7440-02-0	Nickel	8.10	U		P
7440-09-7	Potassium	880.00	B		P
7782-49-2	Selenium	2.10	U	NW	F
7440-22-4	Silver	8.40	U	N	P
7440-23-5	Sodium	8830.00			P
7440-28-0	Thallium	1.30	U	N	F
7440-62-2	Vanadium	5.00	U		P
7440-66-6	Zinc	18.70	B		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

DISSOLVED METALS

ORIGINAL (Red)

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MCBD11

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 12281 SAS No.: SDG No.: MCBD04

Matrix (soil/water): WATER Lab Sample ID: 07067-07S

Level (low/med): LOW Date Received: 07/13/89

Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	29.50	U		P
7440-36-0	Antimony	26.60	U		P
7440-38-2	Arsenic	1.60	U	N*	F
7440-39-3	Barium	1.60	U	E	P
7440-41-7	Beryllium	1.50	U		P
7440-41-7	Cadmium	3.40	U		P
7440-70-2	Calcium	385.00	B		P
7440-47-3	Chromium	3.90	U		P
7440-48-4	Cobalt	5.00	U		P
7440-50-8	Copper	3.10	U		P
7439-89-6	Iron	6.80	U		P
7439-92-1	Lead	1.00	U		F
7439-95-4	Magnesium	68.80	B		P
7439-96-5	Manganese	1.70	U		P
7439-97-6	Mercury	0.20	U	N	CV
7440-02-0	Nickel	8.10	U		P
7440-09-7	Potassium	132.00	U		P
7782-49-2	Selenium	2.10	U	NW	F
7440-22-4	Silver	8.40	U	N	P
7440-23-5	Sodium	323.00	B		P
7440-28-0	Thallium	1.30	U	N	F
7440-62-2	Vanadium	5.00	U		P
7440-66-6	Zinc	11.30	B		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

DISSOLVED METALS

ORIGINAL

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MCBD17

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 12281 SAS No.: SDG No.: MCBD04

Matrix (soil/water): SOIL Lab Sample ID: 07067-08S

Level (low/med): LOW Date Received: 07/13/89

Solids: 45.4

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	34400.00			P
7440-36-0	Antimony	11.50	U	N	P
7440-38-2	Arsenic	18.30		N	F
7440-39-3	Barium	217.00			P
7440-41-7	Beryllium	2.40			P
7440-41-7	Cadmium	5.20		*	P
7440-70-2	Calcium	3150.00			P
7440-47-3	Chromium	212.00			P
7440-48-4	Cobalt	20.90	B		P
7440-50-8	Copper	152.00			P
7439-89-6	Iron	32200.00			P
7439-92-1	Lead	122.00			F
7439-95-4	Magnesium	6630.00			P
7439-96-5	Manganese	277.00			P
7439-97-6	Mercury	2.20			CV
7440-02-0	Nickel	36.20			P
7440-09-7	Potassium	3670.00			P
7782-49-2	Selenium	0.91	U	NW	F
7440-22-4	Silver	3.60	U		P
7440-23-5	Sodium	233.00	B		P
7440-28-0	Thallium	0.56	U	N	F
7440-62-2	Vanadium	70.40			P
7440-66-6	Zinc	457.00		N	P
	Cyanide	2.20	U		AS

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

ORIGINAL (Red)

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MCBD18

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 12281 SAS No.: SDG No.: MCBD04

Matrix (soil/water): SOIL Lab Sample ID: 07067-09S

Level (low/med): LOW Date Received: 07/13/89

Solids: 51.9

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	27300.00			P
7440-36-0	Antimony	10.00	U	N	P
7440-38-2	Arsenic	12.40		NS	F
7440-39-3	Barium	186.00			P
7440-41-7	Beryllium	1.90	B		P
7440-41-7	Cadmium	2.90		*	P
7440-70-2	Calcium	2840.00			P
7440-47-3	Chromium	143.00			P
7440-48-4	Cobalt	16.20	B		P
7440-50-8	Copper	102.00			P
7439-89-6	Iron	30200.00			P
7439-92-1	Lead	120.00			F
7439-95-4	Magnesium	6290.00			P
7439-96-5	Manganese	209.00			P
7439-97-6	Mercury	1.70			CV
7440-02-0	Nickel	30.90			P
7440-09-7	Potassium	4210.00			P
7782-49-2	Selenium	0.80	U	NW	F
7440-22-4	Silver	3.20	U		P
7440-23-5	Sodium	210.00	B		P
7440-28-0	Thallium	0.50	U	N	F
7440-62-2	Vanadium	59.00			P
7440-66-6	Zinc	456.00		N	P
	Cyanide	1.90	U		AS

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts: YES

Comments:

STONES

ORIGINAL (Red)

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MCBD19

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 12281 SAS No.: SDG No.: MCBD04

Matrix (soil/water): SOIL Lab Sample ID: 07067-10S

Level (low/med): LOW Date Received: 07/13/89

% Solids: 72.2

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	8690.00			P
7440-36-0	Antimony	7.30	U	N	P
7440-38-2	Arsenic	4.00		N	F
7440-39-3	Barium	140.00			P
7440-41-7	Beryllium	0.44	B		P
7440-41-7	Cadmium	0.93	U	*	P
7440-70-2	Calcium	2370.00			P
7440-47-3	Chromium	25.70			P
7440-48-4	Cobalt	7.70	B		P
7440-50-8	Copper	33.90			P
7439-89-6	Iron	15200.00			P
7439-92-1	Lead	146.00			F
7439-95-4	Magnesium	3830.00			P
7439-96-5	Manganese	167.00			P
7439-97-6	Mercury	0.13	U		CV
7440-02-0	Nickel	15.10			P
7440-09-7	Potassium	2440.00			P
7782-49-2	Selenium	0.57	U	N	F
7440-22-4	Silver	2.30	U		P
7440-23-5	Sodium	162.00	B		P
7440-28-0	Thallium	0.36	U	N	F
7440-62-2	Vanadium	26.00			P
7440-66-6	Zinc	158.00		N	P
	Cyanide	1.40	U		AS

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

ORIGINAL (Red)

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MCBD20

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 12281 SAS No.: SDG No.: MCBD04

Matrix (soil/water): SOIL Lab Sample ID: 07067-11S

Level (low/med): LOW Date Received: 07/13/89

% Solids: 78.0

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	9950.00			P
7440-36-0	Antimony	6.60	U	N	P
7440-38-2	Arsenic	2.20	B	N	F
7440-39-3	Barium	61.70			P
7440-41-7	Beryllium	0.58	B		P
7440-41-7	Cadmium	0.85	U	*	P
7440-70-2	Calcium	34400.00			P
7440-47-3	Chromium	34.40			P
7440-48-4	Cobalt	7.40	B		P
7440-50-8	Copper	19.70			P
7439-89-6	Iron	17800.00			P
7439-92-1	Lead	38.70			F
7439-95-4	Magnesium	22100.00			P
7439-96-5	Manganese	353.00			P
7439-97-6	Mercury	0.12			CV
7440-02-0	Nickel	13.00			P
7440-09-7	Potassium	2480.00			P
7782-49-2	Selenium	0.52	U	NW	F
7440-22-4	Silver	2.10	U		P
7440-23-5	Sodium	103.00	B		P
7440-28-0	Thallium	0.32	U	NW	F
7440-62-2	Vanadium	28.90			P
7440-66-6	Zinc	133.00		N	P
	Cyanide	1.30	U		AS

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts: YES

Comments:

STONES AND LEAVES

ORIGINAL
(Red)

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MCBD21

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 12281 SAS No.: SDG No.: MCBD04

Matrix (soil/water): SOIL Lab Sample ID: 07067-12S

Level (low/med): LOW Date Received: 07/13/89

% Solids: 67.5

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4940.00			P
7440-36-0	Antimony	7.70	U	N	P
7440-38-2	Arsenic	2.30	B	N	F
7440-39-3	Barium	37.60	B		P
7440-41-7	Beryllium	0.43	U		P
7440-41-7	Cadmium	0.99	U	*	P
7440-70-2	Calcium	19200.00			P
7440-47-3	Chromium	44.50			P
7440-48-4	Cobalt	4.60	B		P
7440-50-8	Copper	15.00			P
7439-89-6	Iron	11900.00			P
7439-92-1	Lead	39.10			F
7439-95-4	Magnesium	11100.00			P
7439-96-5	Manganese	319.00			P
7439-97-6	Mercury	0.14	U		CV
7440-02-0	Nickel	10.00	B		P
7440-09-7	Potassium	929.00	B		P
7782-49-2	Selenium	0.61	U	NW	F
7440-22-4	Silver	2.40	U		P
7440-23-5	Sodium	56.50	B		P
7440-28-0	Thallium	0.37	U	N	F
7440-62-2	Vanadium	22.30			P
7440-66-6	Zinc	50.00		N	P
	Cyanide	0.01	U		AS

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts: YES

Comments:

STONES AND LEAVES

ORIGINAL (Red)

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MCBD22

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 12281 SAS No.: SDG No.: MCBD04

Matrix (soil/water): SOIL Lab Sample ID: 07067-13S

Level (low/med): LOW Date Received: 07/13/89

Solids: 54.6

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	18800.00			P
7440-36-0	Antimony	9.50	U	N	P
7440-38-2	Arsenic	3.40	B	N	F
7440-39-3	Barium	190.00			P
7440-41-7	Beryllium	1.00	B		P
7440-41-7	Cadmium	1.20	B	*	P
7440-70-2	Calcium	6770.00			P
7440-47-3	Chromium	52.30			P
7440-48-4	Cobalt	14.00	B		P
7440-50-8	Copper	73.70			P
7439-89-6	Iron	29100.00			P
7439-92-1	Lead	158.00			F
7439-95-4	Magnesium	8800.00			P
7439-96-5	Manganese	388.00			P
7439-97-6	Mercury	0.22			CV
7440-02-0	Nickel	30.30			P
7440-09-7	Potassium	4840.00			P
7782-49-2	Selenium	0.76	U	NW	F
7440-22-4	Silver	3.00	U		P
7440-23-5	Sodium	198.00	B		P
7440-28-0	Thallium	0.47	U	N	F
7440-62-2	Vanadium	59.30			P
7440-66-6	Zinc	257.00		N	P
	Cyanide	1.80	U		AS

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

0014

U.S. EPA - CLP

ORIGINAL (Red)

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MCBD23

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 12281 SAS No.: SDG No.: MCBD04

Matrix (soil/water): SOIL Lab Sample ID: 07067-14S

Level (low/med): LOW Date Received: 07/13/89

Solids: 84.0

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	15900.00			P
7440-36-0	Antimony	6.20	U	N	P
7440-38-2	Arsenic	5.60		N	F
7440-39-3	Barium	80.60			P
7440-41-7	Beryllium	0.81	B		P
7440-41-7	Cadmium	0.79	U	*	P
7440-70-2	Calcium	1520.00			P
7440-47-3	Chromium	28.00			P
7440-48-4	Cobalt	7.30	B		P
7440-50-8	Copper	24.10			P
7439-89-6	Iron	22100.00			P
7439-92-1	Lead	65.20		S	F
7439-95-4	Magnesium	2070.00			P
7439-96-5	Manganese	376.00			P
7439-97-6	Mercury	0.11	U		CV
7440-02-0	Nickel	13.80			P
7440-09-7	Potassium	829.00	B		P
7782-49-2	Selenium	0.50	U	N	F
7440-22-4	Silver	1.90	U		P
7440-23-5	Sodium	81.50	B		P
7440-28-0	Thallium	0.31	U	N	F
7440-62-2	Vanadium	40.60			P
7440-66-6	Zinc	62.30		N	P
	Cyanide	1.20	U		AS

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts: YES

Comments:

ROOTS

ORIGINAL (Red)

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MCN244

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 12281 SAS No.: SDG No.: MCBD04

Matrix (soil/water): SOIL Lab Sample ID: 07067-15S

Level (low/med): LOW Date Received: 07/13/89

% Solids: 85.7

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	16400.00			P
7440-36-0	Antimony	6.10	U	N	P
7440-38-2	Arsenic	6.20		N	F
7440-39-3	Barium	165.00			P
7440-41-7	Beryllium	0.37	B		P
7440-41-7	Cadmium	0.77	U	*	P
7440-70-2	Calcium	13000.00			P
7440-47-3	Chromium	216.00			P
7440-48-4	Cobalt	90.10			P
7440-50-8	Copper	120.00			P
7439-89-6	Iron	22400.00			P
7439-92-1	Lead	79.40		S	F
7439-95-4	Magnesium	4270.00			P
7439-96-5	Manganese	901.00			P
7439-97-6	Mercury	2.50			CV
7440-02-0	Nickel	71.00			P
7440-09-7	Potassium	1350.00			P
7782-49-2	Selenium	0.49	U	NW	F
7440-22-4	Silver	1.90	U		P
7440-23-5	Sodium	304.00	B		P
7440-28-0	Thallium	0.30	U	N	F
7440-62-2	Vanadium	215.00			P
7440-66-6	Zinc	273.00		N	P
	Cyanide	1.20	U		AS

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

ORIGINAL (Red)

U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MCN245

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 12281 SAS No.: SDG No.: MCBD04

Matrix (soil/water): SOIL Lab Sample ID: 07067-16S

Level (low/med): LOW Date Received: 07/13/89

% Solids: 87.9

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6830.00			P
7440-36-0	Antimony	5.90	U	N	P
7440-38-2	Arsenic	6.50		NS	F
7440-39-3	Barium	98.50			P
7440-41-7	Beryllium	0.51	B		P
7440-41-7	Cadmium	1.10	B	*	P
7440-70-2	Calcium	5760.00			P
7440-47-3	Chromium	26.20			P
7440-48-4	Cobalt	16.20			P
7440-50-8	Copper	35.90			P
7439-89-6	Iron	15300.00			P
7439-92-1	Lead	104.00			F
7439-95-4	Magnesium	2510.00			P
7439-96-5	Manganese	310.00			P
7439-97-6	Mercury	10.60			CV
7440-02-0	Nickel	18.30			P
7440-09-7	Potassium	1010.00	B		P
7782-49-2	Selenium	0.46	U	NW	F
7440-22-4	Silver	1.90	U		P
7440-23-5	Sodium	134.00	B		P
7440-28-0	Thallium	0.29	U	N	F
7440-62-2	Vanadium	23.20			P
7440-66-6	Zinc	143.00		N	P
	Cyanide	1.10	U		AS

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts: YES

Comments:

STONES

U.S. EPA - CLP

ORIGINAL (Red)

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MCP961

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 12281 SAS No.: SDG No.: MCBD04

Matrix (soil/water): SOIL Lab Sample ID: 07067-17S

Level (low/med): LOW Date Received: 07/13/89

% Solids: 76.9

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	8520.00			P
7440-36-0	Antimony	6.80	B	N	P
7440-38-2	Arsenic	2.70	B	NE	F
7440-39-3	Barium	86.80			P
7440-41-7	Beryllium	0.70	B		P
7440-41-7	Cadmium	0.86	U	*	P
7440-70-2	Calcium	692.00	B		P
7440-47-3	Chromium	45.40			P
7440-48-4	Cobalt	6.30	B		P
7440-50-8	Copper	35.70			P
7439-89-6	Iron	53300.00			P
7439-92-1	Lead	104.00			F
7439-95-4	Magnesium	513.00	B		P
7439-96-5	Manganese	58.30			P
7439-97-6	Mercury	0.20			CV
7440-02-0	Nickel	11.40			P
7440-09-7	Potassium	1480.00			P
7782-49-2	Selenium	2.70	U	NW	F
7440-22-4	Silver	4.20			P
7440-23-5	Sodium	368.00	B		P
7440-28-0	Thallium	0.33	U	N	F
7440-62-2	Vanadium	40.10			P
7440-66-6	Zinc	32.60		N	P
	Cyanide	1.30	U		AS

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts: YES

Comments:

STONES

ORIGINAL (Red)

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MCQ102

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 12281 SAS No.: SDG No.: MCBD04

Matrix (soil/water): SOIL Lab Sample ID: 07067-18S

Level (low/med): LOW Date Received: 07/13/89

% Solids: 50.3

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2520.00			P
7440-36-0	Antimony	10.40	U	N	P
7440-38-2	Arsenic	29.90		NS	F
7440-39-3	Barium	59.00	B		P
7440-41-7	Beryllium	0.59	U		P
7440-41-7	Cadmium	1.30	U	*	P
7440-70-2	Calcium	556.00	B		P
7440-47-3	Chromium	15.50			P
7440-48-4	Cobalt	2.00	U		P
7440-50-8	Copper	8.60	B		P
7439-89-6	Iron	6300.00			P
7439-92-1	Lead	42.10			F
7439-95-4	Magnesium	501.00	B		P
7439-96-5	Manganese	20.80			P
7439-97-6	Mercury	3.10			CV
7440-02-0	Nickel	40.40			P
7440-09-7	Potassium	746.00	B		P
7782-49-2	Selenium	0.81	U	NW	F
7440-22-4	Silver	3.30	U		P
7440-23-5	Sodium	137.00	B		P
7440-28-0	Thallium	0.50	U	N	F
7440-62-2	Vanadium	10.10	B		P
7440-66-6	Zinc	13.40		N	P
	Cyanide	2.00	U		AS

Color Before: BLACK Clarity Before: Texture: FINE

Color After: BLACK Clarity After: Artifacts: YES

Comments:

STONES

ORIGINAL
(Red)

U.S. EPA - CLP

1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MCQ103

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 12281 SAS No.: SDG No.: MCBD04

Matrix (soil/water): SOIL Lab Sample ID: 07067-19S

Level (low/med): LOW Date Received: 07/13/89

% Solids: 76.8

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	8790.00			P
7440-36-0	Antimony	6.70	U	N	P
7440-38-2	Arsenic	5.90		N	F
7440-39-3	Barium	64.00			P
7440-41-7	Beryllium	0.41	B		P
7440-41-7	Cadmium	1.10	B	*	P
7440-70-2	Calcium	18800.00			P
7440-47-3	Chromium	27.20			P
7440-48-4	Cobalt	10.30	B		P
7440-50-8	Copper	20.60			P
7439-89-6	Iron	15200.00			P
7439-92-1	Lead	37.20			F
7439-95-4	Magnesium	2280.00			P
7439-96-5	Manganese	209.00			P
7439-97-6	Mercury	1.20			CV
7440-02-0	Nickel	12.90			P
7440-09-7	Potassium	2480.00			P
7782-49-2	Selenium	0.53	U	NW	F
7440-22-4	Silver	2.10	U		P
7440-23-5	Sodium	238.00	B		P
7440-28-0	Thallium	0.33	U	N	F
7440-62-2	Vanadium	25.30			P
7440-66-6	Zinc	59.60		N	P
	Cyanide	1.30	U		AS

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts: YES

Comments:

STONES

ORIGINAL
(Red) A SAMPLE

1HA
HIGH CONCENTRATION VOLATILE ANALYSIS DATA SHEET

Lab Name: Western Research Institute Contract: _____ CCM18-11

Lab Code: WRI Case No.: _____ SAS No.: 4368I# SDG No.: CCM18-1

Phase Type: WML Lab Sample ID: _____

Phase weight: 1 (g) Lab File ID: >68I42

Final Extract Volume: 10 (mL) Date Received: 7-25-89

Aliquot Volume: 100 (uL) Date Separated: —

Conversion Factor: 500 Date Extracted: 8-2-89

Date Analyzed: 8-3-89

CAS NO.	COMPOUND	CONCENTRATION (mg/Kg)	Q
74-87-3	Chloromethane	5.0	u
74-83-9	Bromomethane	5.0	u
75-01-4	Vinyl Chloride	5.0	u
75-00-3	Chloroethane	5.0	u
75-09-2	Methylene Chloride	2.5	u
67-64-1	Acetone	5.0	u
75-15-0	Carbon Disulfide	2.5	u
75-35-4	1,1-Dichloroethene	2.5	u
75-34-3	1,1-Dichloroethane	2.5	u
540-59-0	1,2-Dichloroethene (total)	2.5	u
67-66-3	Chloroform	2.5	u
107-06-2	1,2-Dichloroethane	2.5	u
78-93-3	2-Butanone	5.0	u
71-55-6	1,1,1-Trichloroethane	2.5	u
56-23-5	Carbon Tetrachloride	2.5	u
108-05-4	Vinyl Acetate	5.0	u
75-27-4	Bromodichloromethane	2.5	u
78-87-5	1,2-Dichloropropane	2.5	u
10061-01-5	cis-1,3-Dichloropropene	2.5	u
79-01-6	Trichloroethene	2.5	u
124-48-1	Dibromochloromethane	2.5	u
79-00-5	1,1,2-Trichloroethane	2.5	u
71-43-2	Benzene	2.5	u
10061-02-6	trans-1,3-Dichloropropene	2.5	u
75-25-2	Bromoform	2.5	u
108-10-1	4-Methyl-2-Pentanone	5.0	u
591-78-6	2-Hexanone	5.0	u
127-18-4	Tetrachloroethene	2.5	u
79-34-5	1,1,2,2-Tetrachloroethane	2.5	u
108-88-3	Toluene	2.5	u
108-90-7	Chlorobenzene	2.5	u
100-41-4	Ethylbenzene	2.5	u
100-42-5	Styrene	2.5	u
1330-20-7	Xylene (total)	2.5	u

FORM I HCV

Rev.

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HIGH CONCENTRATION VOLATILE ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

ORIGINAL (Red)

EPA SAMPLE N

CCM18-11

Lab Name: Western Research Institute Contract: _____

Lab Code: WRI Case No.: _____ SAS No.: 4368I-41 SDG No.: CCM18-11

Phase Type: WML

Lab Sample ID: _____

Phase weight: 1 (g)

Lab File ID: 768I42

Final Extract Volume: 10 (mL)

Date Received: 7-25-89

Aliquot Volume: 100 (uL)

Date Separated: —

Conversion Factor: 500

Date Analyzed: 8-3-89

Number TICs found: 1

CAS NUMBER	COMPOUND NAME	RT	EST. CONC. (mg/Kg)	Q
1. —	2 $C_{11}H_{14}$ isomer	22.36	4.	J
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3.				
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ORIGINAL

1HB

HIGH CONCENTRATION EXTRACTABLE ANALYSIS DATA SHEET

EPA SAMPLE NO.

CCM18-~~12~~ 11

Lab Name: WESTERN RESEARCH INST Contract: 68-W8-0076

Lab Code: WRI Case No.: SAS No.: 4368I_SE T#41 SDG No.:

Phase Type: WML Lab Sample ID:

Phase weight: 1.0 (g) Lab File ID: >#4103

Final Extract Volume: 2.0 (mL) Date Received: 07/25/89

Injection Volume: 2 (uL) Date Seperated: 8/24/89

Conversion Factor: 1.000 Date Extracted: 08/24/89

pH: 7.0 Date Analyzed: 8/30/89

CAS NO.	COMPOUND	CONCENTRATION (mg/Kg)	Q
108-95-2	Phenol	20	U
111-44-4	bis(2-Chloroethyl)Ether	20	U
95-57-8	2-Chlorophenol	20	U
541-73-1	1,3-Dichlorobenzene	20	U
106-46-7	1,4-Dichlorobenzene	20	U
100-51-6	Benzyl_alcohol	20	U
95-50-1	1,2-Dichlorobenzene	20	U
95-48-7	2-Methylphenol	20	U
39638-32-9	bis(2-chloroisopropyl)ether	20	U
106-44-5	4-Methylphenol	20	U
621-64-7	N-Nitroso-Di-n-propylamine	20	U
67-72-1	Hexachloroethane	20	U
98-95-3	Nitrobenzene	20	U
78-59-1	Isophorone	20	U
88-75-5	2-Nitrophenol	20	U
105-67-9	2,4-Dimethylphenol	20	U
65-85-0	Benzoic_acid	100	U
111-91-1	bis(2-Chloroethoxy)methane	20	U
120-83-2	2,4-Dichlorophenol	20	U
120-82-1	1,2,4-Trichlorobenzene	20	U
91-20-3	Naphthalene	20	U
106-47-8	4-Chloroaniline	20	U
87-68-3	Hexachlorobutadiene	20	U
59-50-7	4-Chloro-3-methylphenol	20	U
91-57-6	2-Methylnaphthalene	20	U
77-47-4	Hexachlorocyclopentadiene	20	U
88-06-2	2,4,6-Trichlorophenol	20	U
95-95-4	2,4,5-Trichlorophenol	100	U
91-58-7	2-Chloronaphthalene	20	U
88-74-4	2-Nitroaniline	100	U
131-11-3	Dimethylphthalate	20	U
208-96-8	Acenaphthylene	20	U
606-20-2	2,6-Dinitrotoluene	20	U

ORIGINAL (Red)

1HC

HIGH CONCENTRATION EXTRACTABLE ANALYSIS DATA SHEET

EPA SAMPLE NO.

CCM18-~~12~~11 le 9/1/89

Lab Name: WESTERN RESEARCH INST Contract: 68-W8-0076

Lab Code: WRI Case No.: SAS No.: 4368I_SE (T&4) SDG No.:

Phase Type: WML Lab Sample ID:

Phase weight: 1.0 (g) Lab File ID: >#4103

Final Extract Volume: 2.0 (mL) Date Received: 07/25/89

Injection Volume: 2 (uL) Date Seperated: 8/24/89

Conversion Factor: 1.000 Date Extracted: 08/24/89

pH: 7.0 Date Analyzed: 8/30/89

CAS NO.	COMPOUND	CONCENTRATION (mg/Kg)	Q
99-09-2	3-Nitroaniline	100	U
83-32-9	Acenaphthene	20	U
51-28-5	2,4-Dinitrophenol	100	U
100-02-7	4-Nitrophenol	100	U
132-64-9	Dibenzofuran	20	U
121-14-2	2,4-Dinitrotoluene	20	U
84-66-2	Diethylphthalate	20	U
7005-72-3	4-Chlorophenyl-phenylether	20	U
86-73-7	Fluorene	20	U
100-01-6	4-Nitroaniline	100	U
534-52-1	4,6-Dinitro-2-methylphenol	100	U
86-30-6	N-Nitrosodiphenylamine	20	U
101-55-3	4-Bromophenyl-phenylether	20	U
319-84-6	alpha-BHC	20	U
118-74-1	Hexachlorobenzene	20	U
319-85-7	beta-BHC	20	U
87-86-5	Pentachlorophenol	100	U
58-89-9	gamma-BHC	20	U
85-01-8	Phenanthrene	20	U
120-12-7	Anthracene	20	U
319-86-8	delta-BHC	20	U
76-44-8	Heptachlor	20	U
309-00-2	Aldrin	20	U
84-74-2	Di-n-butylphthalate	20	U
206-44-0	Fluoranthene	20	U
1024-57-3	Heptachlor_epoxide	20	U
27323-18-8	Monochlorobophenyl	100	U
2051-60-7	Dichlorobiphenyl	100	U
2051-61-8	Trichlorobiphenyl	100	U
2051-62-9	Tetrachlorobiphenyl	100	U
129-00-0	Pyrene	20	U
5103-71-9	gamma-Chlordane	20	U

(1) - Cannot be separated from Diphenylamine

1HD

HIGH CONCENTRATION EXTRACTABLE ANALYSIS DATA SHEET

EPA SAMPLE NO. ORIGINAL (Red)

CCM18-~~12~~ 11 JC 9/1/89

Lab Name: WESTERN RESEARCH INST Contract: 68-W8-0076

Lab Code: WRI Case No.: SAS No.: 4368I_SE Tel SDG No.:

Phase Type: WML Lab Sample ID:

Phase weight: 1.0 (g) Lab File ID: >#4103

Final Extract Volume: 2.0 (mL) Date Received: 07/25/89

Injection Volume: 2 (uL) Date Seperated: 8/24/89

Conversion Factor: 1.000 Date Extracted: 08/24/89

pH: 7.0 Date Analyzed: 8/30/89

CAS NO.	COMPOUND	CONCENTRATION (mg/Kg)	Q
959-98-8	Endosulfan_I	20	U
5103-71-9	alpha-Chlordane	20	U
25429-29-2	Pentachlorobiphenyl	100	U
72-55-9	4,4'-DDE	20	U
60-57-1	Dieldrin	20	U
26601-64-9	Hexachlorobiphenyl	100	U
72-20-8	Endrin	20	U
33213-65-9	Endosulfan_II	20	U
72-54-8	4,4'-DDD	20	U
28655-71-2	Heptachlorobiphenyl	100	U
85-68-7	Butylbenzylphthalate	20	U
1031-07-8	Endosulfan_sulfate	20	U
50-29-3	4,4'-DDT	20	U
53494-70-5	Endrin_Ketone	20	U
56-55-3	Benzo(a)anthracene	20	U
72-42-5	Methoxychlor	20	U
218-01-9	Chrysene	20	U
55722-26-4	Octachlorobiphenyl	200	U
91-94-1	3,3'-Dichlorobenzidine	40	U
117-81-7	bis(2-Ethylhexyl)phthalate	20	U
53742-07-7	Nonachlorobiphenyl	200	U
2051-24-3	Decachlorobiphenyl	200	U
117-84-0	Di-n-octylphthalate	22	~~U~~ TW 9/1/89
205-99-2	Benzo(b)fluoranthene	20	U
207-08-9	Benzo(k)fluoranthene	20	U
50-32-8	Benzo(a)pyrene	20	U
193-39-5	Indeno(1,2,3-cd)pyrene	20	U
53-70-3	Dibenz(a,h)anthracene	20	U
191-24-2	Benzo(g,h,i)perylene	20	U

1HF

HIGH CONCENTRATION EXTRACTABLE ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

ORIGINAL (Red)

EPA SAMPLE: CCM18-11

Lab Name: Western Research Institute Contract: _____

Lab Code: WRI Case No.: _____ SAS No.: _____ SDG No.: _____

Phase Type: WML Lab Sample ID: _____

Phase weight: 1 (g) Lab File ID: >#4103

Final Extract Volume: 2 (mL) Date Received: 7/25/89

Injection Volume: 2 (uL) Date Separated: 8/24/89

Conversion Factor: 1 Date Extracted: 8/24/89

pH: 7 Date Analyzed: 8/30/89

Number TICs found: 14

CAS NUMBER	COMPOUND NAME	RT	EST. CONC. (mg/Kg)	
1. 286204	7-Oxabicyclo[4.1.0] heptane or isomer	5.27	4	J
2. 100527	Benzaldehyde	7.12	8	J
3. —	% $C_{15}H_{32}$ Alkane	23.03	6	J
4. —	Unknown Phthalate	26.11	5	J
5. —	Unknown	27.71	5	J
6. —	Unknown Phthalate	27.90	6	J
7. —	Unknown Phthalate	28.00	11	J
8. —	Unknown Phthalate	28.13	12	J
9. —	Unknown	28.21	13	J
10. —	Unknown Phthalate	28.34	10	J
11. —	Unknown Phthalate	28.40	14	J
12. —	Unknown Phthalate	28.52	19	J
13. —	Unknown	28.63	8	J
14. —	Unknown Phthalate	31.21	5	J
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
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27.				
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29.				
30.				

1HG

HIGH CONCENTRATION AROCLOR ANALYSIS DATA SHEET

ORIGINAL (Red)

EPA SAMPLE NO.

CCM 18-~~12~~ 11 MEH 9-1-8

Lab Name: WESTERN RESEARCH INSTITUTE Contract: 68-W8-0076

Lab Code: WRI Case No.: _____ SAS No.: 436RI #41 SDG No.: CCM18

Phase Type: ~~WHL~~ WML MEH 9-1-89

Lab Sample ID: CCM18-~~12~~ 11 MEH 9-1-

Phase weight: 0.502 (g)

Date Received: 7-25-89

Final Extract Volume: 10 (mL)

Date Separated: 8-8-89

Injection Volume: 5 (uL)

Date Extracted: 8-8-89

Conversion Factor: 0.05

Date Analyzed: 8-15-89

pH: ___

Sulfur Clean-up: N (Y/N)

CAS NO.	COMPOUND	CONCENTRATION (mg/Kg)	Q
8001-35-2	Toxaphene	50	U
12674-11-2	Aroclor-1016	10	U
11104-28-2	Aroclor-1221	10	U
11141-16-5	Aroclor-1232	10	U
53469-21-9	Aroclor-1242	10	U
12672-29-6	Aroclor-1248	10	U
11097-69-1	Aroclor-1254	10	U
11096-82-5	Aroclor-1260	10	U

1HB

HIGH CONCENTRATION EXTRACTABLE ANALYSIS DATA SHEET

ORIGINAL EPA SAMPLE NO. (Red)

MEH 9-1-89

CCM18-~~11~~12

Lab Name: WESTERN RESEARCH INST Contract: 68-W8-0076

Lab Code: WRI Case No.: SAS No.: 4368I_SE SDG No.: ~~T440~~ T441 JE 9/1/89

Phase Type: WIL Lab Sample ID:

Phase weight: 0.1 ~~1.0~~ (g) JE 9/1/89 Lab File ID: >#4102

Final Extract Volume: 2.0 (mL) Date Received: 07/25/89

Injection Volume: 2 (uL) Date Seperated: 08/24/89

Conversion Factor: 10.00 Date Extracted: 08/24/89

pH: 7.0 Date Analyzed: 8/30/89

CAS NO.	COMPOUND	CONCENTRATION (mg/Kg)	Q
108-95-2	Phenol	1000	U
111-44-4	bis(2-Chloroethyl)Ether	1000	U
95-57-8	2-Chlorophenol	1000	U
541-73-1	1,3-Dichlorobenzene	1000	U
106-46-7	1,4-Dichlorobenzene	1000	U
100-51-6	Benzyl_alcohol	1000	U
95-50-1	1,2-Dichlorobenzene	1000	U
95-48-7	2-Methylphenol	1000	U
39638-32-9	bis(2-chloroisopropyl)ether	1000	U
106-44-5	4-Methylphenol	1000	U
621-64-7	N-Nitroso-Di-n-propylamine	1000	U
67-72-1	Hexachloroethane	1000	U
98-95-3	Nitrobenzene	1000	U
78-59-1	Isophorone	1000	U
88-75-5	2-Nitrophenol	1000	U
105-67-9	2,4-Dimethylphenol	1000	U
65-85-0	Benzoic_acid	5000	U
111-91-1	bis(2-Chloroethoxy)methane	1000	U
120-83-2	2,4-Dichlorophenol	1000	U
120-82-1	1,2,4-Trichlorobenzene	1000	U
91-20-3	Naphthalene	1000	U
106-47-8	4-Chloroaniline	1000	U
87-68-3	Hexachlorobutadiene	1000	U
59-50-7	4-Chloro-3-methylphenol	1000	U
91-57-6	2-Methylnaphthalene	810	J
77-47-4	Hexachlorocyclopentadiene	1000	U
88-06-2	2,4,6-Trichlorophenol	1000	U
95-95-4	2,4,5-Trichlorophenol	5000	U
91-58-7	2-Chloronaphthalene	1000	U
88-74-4	2-Nitroaniline	5000	U
131-11-3	Dimethylphthalate	1000	U
208-96-8	Acenaphthylene	1000	U
606-20-2	2,6-Dinitrotoluene	1000	U

1HC

HIGH CONCENTRATION EXTRACTABLE ANALYSIS DATA SHEET

EPA SAMPLE NO. ORIGINAL (Red)

MSH 9-1-89
CCM18-~~11~~12

Lab Name: WESTERN RESEARCH INST Contract: 68-W8-0076

Lab Code: WRI Case No.: SAS No.: 4368I_SE T#41 SDG No.:

Phase Type: WIL Lab Sample ID:

Phase weight: 0.1 ~~1.0~~ (g) JL 9/1/89 Lab File ID: >#4102

Final Extract Volume: 2.0 (mL) Date Received: 07/25/89

Injection Volume: 2 (uL) Date Seperated: 08/24/89

Conversion Factor: 10.00 Date Extracted: 08/24/89

pH: 7.0 Date Analyzed: 8/30/89

CAS NO.	COMPOUND	CONCENTRATION (mg/Kg)	Q
99-09-2	3-Nitroaniline	5000	U
83-32-9	Acenaphthene	1000	U
51-28-5	2,4-Dinitrophenol	5000	U
100-02-7	4-Nitrophenol	5000	U
132-64-9	Dibenzofuran	160	J
121-14-2	2,4-Dinitrotoluene	1000	U
84-66-2	Diethylphthalate	1000	U
7005-72-3	4-Chlorophenyl-phenylether	1000	U
86-73-7	Fluorene	510	J
100-01-6	4-Nitroaniline	5000	U
534-52-1	4,6-Dinitro-2-methylphenol	5000	U
86-30-6	N-Nitrosodiphenylamine	1000	U
101-55-3	4-Bromophenyl-phenylether	1000	U
319-84-6	alpha-BHC	1000	U
118-74-1	Hexachlorobenzene	5000	U
319-85-7	beta-BHC	5000	U
87-86-5	Pentachlorophenol	5000	U
58-89-9	gamma-BHC	1000	U
85-01-8	Phenanthrene	1100	
120-12-7	Anthracene	120	J
319-86-8	delta-BHC	1000	U
76-44-8	Heptachlor	1000	U
309-00-2	Aldrin	1000	U
84-74-2	Di-n-butylphthalate	1000	U
206-44-0	Fluoranthene	360	J
1024-57-3	Heptachlor_epoxide	1000	U
27323-18-8	Monochlorobophenyl	5000	U
2051-60-7	Dichlorobiphenyl	5000	U
2051-61-8	Trichlorobiphenyl	5000	U
2051-62-9	Tetrachlorobiphenyl	5000	U
129-00-0	Pyrene	330	J
5103-71-9	gamma-Chlordane	1000	U

(1) - Cannot be separated from Diphenylamine

ORIGINAL (Red)

1HD

HIGH CONCENTRATION EXTRACTABLE ANALYSIS DATA SHEET

EPA SAMPLE NO.

MEH 9-1-89

CCM18-~~11~~12

Lab Name: WESTERN RESEARCH INST Contract: 68-W8-0076

Lab Code: WRI Case No.: SAS No.: 4368I_SE T#41 SDG No.:

Phase Type: WIL Lab Sample ID:

Phase weight: 0.1 ~~1.0~~ (g) JL 9/1/89 Lab File ID: >#4102

Final Extract Volume: 2.0 (mL) Date Received: 07/25/89

Injection Volume: 2 (uL) Date Seperated: 08/24/89

Conversion Factor: 1.000 Date Extracted: 08/24/89

pH: 7.0 Date Analyzed: 8/30/89

CAS NO.	COMPOUND	CONCENTRATION (mg/Kg)	Q
959-98-8	Endosulfan_I	1000	U
5103-71-9	alpha-Chlordane	1000	U
25429-29-2	Pentachlorobiphenyl	5000	U
72-55-9	4,4'-DDE	1000	U
60-57-1	Dieldrin	1000	U
26601-64-9	Hexachlorobiphenyl	5000	U
72-20-8	Endrin	1000	U
33213-65-9	Endosulfan_II	1000	U
72-54-8	4,4'-DDD	1000	U
28655-71-2	Heptachlorobiphenyl	5000	U
85-68-7	Butylbenzylphthalate	1000	U
1031-07-8	Endosulfan_sulfate	1000	U
50-29-3	4,4'-DDT	1000	U
53494-70-5	Endrin_Ketone	1000	U
56-55-3	Benzo(a)anthracene	110	J
72-42-5	Methoxychlor	1000	U
218-01-9	Chrysene	220	J
55722-26-4	Octachlorobiphenyl	2000	U
91-94-1	3,3'-Dichlorobenzidine	4000	U
117-81-7	bis(2-Ethylhexyl)phthalate	1000	U
53742-07-7	Nonachlorobiphenyl	1000	U
2051-24-3	Decachlorobiphenyl	1000	U
117-84-0	Di-n-octylphthalate	220	B
205-99-2	Benzo(b)fluoranthene	1000	U
207-08-9	Benzo(k)fluoranthene	1000	U
50-32-8	Benzo(a)pyrene	160	J
193-39-5	Indeno(1,2,3-cd)pyrene	1000	U
53-70-3	Dibenz(a,h)anthracene	1000	U
191-24-2	Benzo(g,h,i)perylene	1000	U

1HF

HIGH CONCENTRATION EXTRACTABLE ANALYSIS DATA SHEET ORIGINAL (Red)

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE

KCM18-~~H~~12 meH 9-

Lab Name: Western Research Institute Contract: 68-W8-0076

Lab Code: WRI Case No.: _____ SAS No.: 4368I set 41 SDG No.: _____

Phase Type: WIL Lab Sample ID: _____

Phase weight: 0.1 (g) Lab File ID: >#4102

Final Extract Volume: 2 (mL) Date Received: 7/25/89

Injection Volume: 2 (uL) Date Separated: 8/24/89

Conversion Factor: 10 Date Extracted: 8/24/89

pH: 7 Date Analyzed: 8/30/89

Number TICs found: 20

CAS NUMBER	COMPOUND NAME	RT	EST. CONC. (mg/Kg)	
1. 26730121	Tridecane, 4-methyl- or isomer	12.19	600	J
2. 575371	Naphthalene, 1,7-dimethyl- or isomer	14.26	700	J
3. 569415	Naphthalene, 1,8-dimethyl- or isomer	14.46	1000	J
4. 575371	Naphthalene, 1,7-dimethyl- or isomer	14.74	500	J
5. 0	Methyl-ethyl-naphthalene- or isomer	16.20	700	J
6. 0	methyl-ethyl-naphthalene- or isomer	16.36	500	J
7. 2489863	Naphthalene, 1-(2-propenyl)- or isomer	16.82	700	J
8.	≥$C_{15}H_{32}$ alkane	17.22	400	J
9.	≥$C_{15}H_{32}$ alkane	17.89	700	J
10. 613127	Anthracene, 2-methyl- or isomer	20.31	500	J
11. 610480	Anthracene, 1-methyl- or isomer	20.38	500	J
12. 832713	Phenanthrene, 3-methyl- or isomer	20.61	400	J
13.	unknown aromatic	21.17	400	J
14. 3674666	Phenanthrene, 2,5-dimethyl- or isomer	21.49	400	J
15. 1576676	Phenanthrene, 3,6-dimethyl- or isomer	21.59	800	J
16. 0	Indene, 2-methyl-3-phenyl- or isomer	21.78	800	J
17. 3674699	Phenanthrene, 4,5-dimethyl- or isomer	21.86	500	J
18. 3674735	Phenanthrene, 2,3,5-trimethyl- or isomer	22.87	900	J
19. 3674735	Phenanthrene, 2,3,5-trimethyl- or isomer	22.97	800	J
20. 84151	1,1':2',1"-terphenyl or isomer	24.90	600	J
21.				
22.				
23.				
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30.				

FORM I HCE-TIC Rev.

1HG

HIGH CONCENTRATION AROCLOR ANALYSIS DATA SHEET

ORIGINAL (Red)

EPA SAMPLE NO.

CCM18-~~11~~ 12

Lab Name: Western Research Institute Contract: 68-W8-0076

Lab Code: WRI Case No.: _____ SAS No.: 4368I #4 SDG No.: CCM18

Phase Type: ~~Wet~~ WL TW 9/1/89 Lab Sample ID: CCM18-~~11~~ 12 MEH 9-1-89

Phase weight: 0.506 (g) Date Received: 7-25-89

Final Extract Volume: 10 (mL) Date Separated: 8-8-89

Injection Volume: 5 (uL) Date Extracted: 8-8-89

Conversion Factor: 0.05 Date Analyzed: 8-15-89

pH: ___ Sulfur Clean-up: N (Y/N)

CAS NO.	COMPOUND	CONCENTRATION (mg/Kg)	Q
8001-35-2	Toxaphene	50	U
12674-11-2	Aroclor-1016	10	U
11104-28-2	Aroclor-1221	10	U
11141-16-5	Aroclor-1232	10	U
53469-21-9	Aroclor-1242	10	U
12672-29-6	Aroclor-1248	10	U
11097-69-1	Aroclor-1254	3.8	Z
11096-82-5	Aroclor-1260	10	U
		10	U

Z - see case narrative

U.S. EPA - CLP
HIGH CONCENTRATION INORGANICS

ANALYSIS DATA SHEET

ORIGINAL (Red) EPA SAMPLE NO.

MCBA-01

Lab Name: CHEMTECH CONSULTING GROUP Contract: 4208I

SDG No.: MCBO-01

Lab Code: CHEM Case No.: SET47

Percent: 87.0

Phase: LIQUID (A) Water Miscibility: yes

Date Received: 07/26/89

pH: 16 Lab Sample ID: 61A-0249-01A

Concentration Units: mg/kg

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	850		N	P
7440-36-0	Antimony	20	U		HY
7440-38-2	Arsenic	20	U		HY
7440-39-3	Barium	5.60	U		P
7440-41-7	Beryllium	0.80	U		P
7440-43-9	Cadmium	3.60	U		P
7440-70-2	Calcium	660	B		P
7440-47-3	Chromium	4.80	U		P
7440-48-4	Cobalt	3.60	U		P
7440-50-8	Copper	18.5	B		P
7439-89-6	Iron	133	B		P
7439-92-1	Lead	70.8	U		P
7439-95-4	Magnesium	211	B		P
7439-96-5	Manganese	13.2	U	N	CV
7439-97-6	Mercury	0.3		N	P
7440-02-0	Nickel	11.2	U		HY
7882-49-2	Selenium	20	U		P
7440-22-4	Silver	06.40	U		P
7440-23-5	Sodium	~~4000~~ 286	U		P
7440-28-0	Thallium	400.0	U		P
7440-62-2	Vanadium	14.4	U		P
7440-66-6	Zinc	19.2	B	N	C
	Cyanide	1.5	U		

Viscosity: yes

Color: COLORLESS Clarity:

Texture: LIQUID Artifacts:

Comments:

1/5

FORM 1 - HCIN

DC2

U.S. EPA - CLP
HIGH CONCENTRATION INORGANICS

ANALYSIS DATA SHEET

ORIGINAL (Red)

EPA SAMPLE NO.

MCBD-01

Lab Name: CHEMTECH CONSULTING GROUP Contract: 42081

Lab Code: CHEM Case No.: SET 47 SDG No.: MCBD-01

Matrix: SOLID B Water, Miscibility: NO Percent: 13.0

pH: 1.6 Lab Sample ID: 61A-249-01E Date Received: 07/26/89

Concentration Units: mg/kg

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4128		*	P
7440-36-0	Antimony	41.7			HY
7440-38-2	Arsenic	20.0	U		HY
7440-39-3	Barium	14.5	B	N	P
7440-41-7	Beryllium	0.80	U		P
7440-43-9	Cadmium	3.60	U	N	P
7440-70-2	Calcium	2650		* N	P
7440-47-3	Chromium	8.72	B	N	P
7440-48-4	Cobalt	4.36	B		P
7440-50-8	Copper	25.7	B		P
7439-89-6	Iron	1206		*	P
7439-92-1	Lead	70.8	U	N	P
7439-95-4	Magnesium	398	B	N	P
7439-96-5	Manganese	26.2	B	N	P
7439-97-6	Mercury	0.3	U	*	CV
7440-02-0	Nickel	15.2	B	N	P
7882-49-2	Selenium	20.0	U		HY
7440-22-4	Silver	6.40	U	N	P
7440-23-5	Sodium	287	B	N	P
7440-28-0	Thallium	400	U	N	P
7440-62-2	Vanadium	14.4	U		P
7440-66-6	Zinc	47.6		N	P
	Cyanide	1.5	U		C

Viscosity: NO

Color: Brown Clarity:

Texture: SOLID Artifacts:

Comments:

1/S

FORM 1 - HCIN

U.S. EPA - CLP

HIGH CONCENTRATION INORGANICS

ANALYSIS DATA SHEET

EPA SAMPLE NO.

MCB0[illegible]

Lab Name: JTC ENVIRONMENTAL CONSE[illegible] Contract: 4208[illegible]

Lab Code: JTC Case No.: SE149 SDG No.: [illegible]

Phase: LIQUID Water Miscibility: YES Percent Solids: [illegible]

pH: 7 Lab Sample ID: 3-2606 Dilution Factor: [illegible]

Concentration Units: mg/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	61.0	U		P
7440-36-0	Antimony	10.0	U		H
7440-38-2	Arsenic	10.0	U		H
7440-39-3	Barium	13.0	U		P
7440-41-7	Beryllium	1.5	U		P
7440-43-9	Cadmium	1.8	U	N	P
7440-70-2	Calcium	789.0	B	N	P
7440-47-3	Chromium	12.0	B	N	P
7440-48-4	Cobalt	6.8	U	N	P
7440-50-8	Copper	8.8	U		P
7439-89-6	Iron	35.0	U		P
7439-92-1	Lead	25.1	B		P
7439-95-4	Magnesium	600.0	U		P
7439-96-5	Manganese	5.6	B		P
7439-97-6	Mercury	0.3	U		NR CV
7440-02-0	Nickel	6.4	U	N	P
7782-49-2	Selenium	10.0	U	N	H
7440-22-4	Silver	3.5	U	N	P
7440-23-5	Sodium	1100.0	B	N	P
7440-28-0	Thallium	100.0	U		P
7440-62-2	Vanadium	6.4	U	N	P
7440-66-6	Zinc	7.2	U	N	P
	Cyanide				NR

ORIGINAL (Red)

Color: COLORLESS Clarity: CLEAR Viscosity: NONVISCOUS

Texture: Artifacts:

Comments:

ORIGINAL
(Red)

APPENDIX C

ORIGINAL
(Red)

TABLE 2.-- RECORDS OF WELLS AND SUMPS

EXPLANATION OF CODES. CODES FOR DRILLER'S LICENSE NUMBER ARE GIVEN IN THE TEXT; GEOLOGIC UNIT CODES ARE GIVEN IN TABLE 1.

METHOD CONSTRUCTED: A, AIR ROTARY; B, BORED OR AUGERED; C, CABLE TOOL; D, DUG; H, HYDRAULIC ROTARY; V, DRIVEN.

FINISH: G, SCREEN WITH GRAVEL PACK; O, OPEN END; P, PERFORATED OR SLOTTED; S, SCREEN; T, SAND POINT; W, WALLED; X, OPEN HOLE.

LOCAL NUMBER	SITE-ID	OWNER	DRILLER'S LICENSE NUMBER	DATE COMPLETED	METHOD CONST-RUCTED	FINISH	GEOLOGIC UNIT	DEPTH DRILLED (FEET)
PH-1	395334075100901	U S NAVY	0424	05/ /1940	C	S	211MRPAL	238
2	395329075101201	U S NAVY	0424	07/ /1940	C	S	211MRPAL	243
3	395328075102901	U S NAVY	-239	05/ /1941	C	S	211MRPAL	268
4	395328075103401	U S NAVY	-239	02/ /1941	C	S	211MRPAL	267
5	395323075110801	U S NAVY	0424	04/21/1942	C	S	211MRPAL	203
6	395348075105901	U S NAVY	0424	06/20/1942	C	S	211MRPAL	193
7	395321075091101	U S NAVY	0424	01/23/1943	C	S	211MRPAL	228
8	395318075103101	U S NAVY	0424	1944	C	S	211MRPAL	254
9	395343075113001	U S NAVY	0424	05/ /1942	C	S	211MRPAL	--
10	395334075100701	U S NAVY	0424	08/ /1945	C	S	211MRPAM	146
11	395345075102901	U S NAVY	0424	09/ /1944	C	S	211MRPAM	237
12	395342075102101	U S NAVY	0424	11/15/1944	C	S	211MRPAM	110
13	395332075102501	U S NAVY	0424	11/25/1944	C	S	112TRNN	73
14	395336075101301	U S NAVY	0424	07/ /1945	C	S	112TRNN	70
15	395326075101501	U S NAVY	0424	09/ /1945	C	S	211MRPAU	82
16	395336075102701	U S NAVY	0424	09/ /1945	C	S	112TRNN	84
17	395349075100201	U S NAVY	0424	09/18/1945	C	S	112TRNN	73
18	395349075100202	U S NAVY	-387	02/08/1946	C	S	211MRPAL	218
19	395314075101001	U S NAVY	-387	04/02/1946	C	S	211MRPAL	274
20	395316075104901	U S NAVY	-387	05/14/1946	C	S	211MRPAL	266
21	395329075100201	U S NAVY	0424	09/ /1945	C	--	112TRNN	91
22	395310075115001	U S NAVY	0297	07/ /1944	C	S	112TRNN	127
23	395327075103401	U S NAVY	-388	1897	C	X	300WSCKO	--
24	395328075103301	U S NAVY	-204	12/ /1899	C	X	300WSCKO	--
25	395318075093901	U S NAVY	--	01/05/1953	C	S	211MRPAL	254
26	395346075102801	U S NAVY	0404	09/05/1952	H	S	211MRPAL	237
27	395315075100701	U S NAVY	0404	10/24/1952	H	S	211MRPAL	--
28	395349075101801	U S NAVY	0404	10/06/1952	H	S	211MRPAL	250
29	395324075133301	CONRAIL	-204	1918	C	S	112TRNN ✓	--
30	395248075134201	PHILA AIRPORT	0424	08/ /1938	C	S	211MRPAM ✓	198
31	395450075123301	WFIL TRANSMISSION STATION	0249	01/05/1938	C	S	112TRNN	--
32	395522075115901	PHILA GAS WORKS	--	1915	C	X	300WSCKO	--
33	395409075120201	CONRAIL	0249	12/28/1940	C	S	211MRPAL	100
34	395349075115401	CONRAIL	-204	1906	C	X	300WSCKO	--
35	395431075124501	GULF OIL CORP	0231	09/ /1936	C	S	112TRNN ✓	106
36	395415075123401	GULF OIL CORP	0231	09/ /1936	C	S	112TRNN ✓	81
37	395409075123201	GULF OIL CORP	-387	09/ /1936	C	S	211MRPAL ✓	90
38	395424075124401	GULF OIL CORP	0231	08/ /1936	C	S	112TRNN ✓	90
39	395416075124601	GULF OIL CORP	0231	1936	C	S	112TRNN ✓	73
40	395429075123301	GULF OIL CORP	-387	10/01/1936	C	S	112TRNN ✓	79
41	395422075123001	GULF OIL CORP	0231	1936	C	S	112TRNN ✓	70
42	395410075120701	GULF OIL CORP	-387	08/ /1936	C	X	300WSCKO	106
43	395410075120702	GULF OIL CORP	-387	01/ /1946	C	S	211MRPAL	--
44	395410075120703	GULF OIL CORP	-387	03/ /1946	C	S	211MRPAL	--
45	395432075100601	COX, S	--	1935	D	W	112TRNN	--
46	395435075112801	(b) (6)	-204	1914	C	S	211MRPAL	--
47	395553075102101	ABBOTTS DAIRIES	-204	1906	C	X	300WSCKO	--
48	395553075102102	ABBOTTS DAIRIES	0297	1925	C	S	211MRPAL	--
49	395553075102103	ABBOTTS DAIRIES	-204	1929	C	X	300WSCKO	--
50	395553075102104	ABBOTTS DAIRIES	0424	07/28/1944	C	S	211MRPAL	117

112 TRNN - Trenton Gravel
211 MRPAM } Potomac-
211 MRPAL } Raritan-
211 MRPAL } Magothy

ORIGINAL
(Red)

USE OF SITE: O, OBSERVATION; T, TEST; U, UNUSED; W, WITHDRAWAL; Z, DESTROYED.

USE OF WATER: A, AIR CONDITIONING; D, DEWATERING; E, POWER GENERATION; F, FIRE PROTECTION; H, DOMESTIC; I, IRRIGATION; N, INDUSTRIAL; Q, AQUACULTURE; R, RECREATION; T, INSTITUTIONAL; U, UNUSED; Z, OTHER.

DEPTH OF WELL (FEET)	DEPTH CASED (FEET)	CASING DIAM-ETER (INCHES)	ALTITUDE OF LAND SURFACE (FEET NGVD)	WATER LEVEL (FEET)	DATE WATER LEVEL MEASURED	DISCHARGE (GALLONS PER MINUTE)	SPECIFIC CAPACITY (GPM/FT)	USE OF SITE	USE OF WATER	LOCAL NUMBER
233	207	12	11.24	19.00	05/ /1940	730	12.0	U	U	PH-1
232	207	12	11.25	18.00	07/ /1940	730	13.0	U	U	2
268	238	12	11.72	25.47	10/31/1978	860	48.0	U	U	3
267	237	12	11.40	25.80	10/31/1978	800	30.0	U	U	4
173	148	12	14.76	28.41	11/01/1978	735	14.0	U	U	5
163	138	12	10.19	19.22	10/31/1978	725	12.0	U	U	6
204	189	12	11.93	31.50	01/23/1943	710	5.7	Z	U	7
230	200	12	11.81	33.72	10/31/1978	745	24.0	U	U	8
140	--	8	10	--	--	--	--	Z	U	9
140	133	16	11.70	29.19	10/31/1978	350	5.6	U	U	10
104	--	8	8.41	17.96	10/31/1978	350	6.0	Z	U	11
101	--	8	8.64	17.37	10/22/1978	20	4.7	O	U	12
59	50	8	9.93	25.90	11/25/1944	98	13.0	Z	U	13
56	46	3	10.18	18.50	11/01/1978	5.8	1.1	T	U	14
69	59	3	10.37	19.06	11/01/1978	--	--	T	U	15
62	52	3	9.13	28.50	09/12/1945	--	--	Z	U	16
53	43	3	11.06	4.00	09/18/1945	--	--	T	U	17
211	206	8	10.90	31.30	04/27/1953	--	--	T	U	18
247	242	6	8.68	35.15	11/01/1978	18	10.0	T	U	19
240	235	8	13	28.19	11/01/1978	20	1.2	T	U	20
56	46	3	11	--	--	--	--	Z	U	21
103	66	10	7.61	19.13	07/ /1944	--	--	Z	U	22
600	260	10	10	--	--	25	--	Z	U	23
906	260	10	10	28.00	12/ /1899	53	--	Z	U	24
229	199	12	8.5	31.67	10/31/1978	1200	12.0	U	U	25
208	176	12	10	45.00	09/05/1952	831	18.0	Z	U	26
245	214	12	9.5	47.00	10/24/1952	636	23.0	U	U	27
206	176	12	10	34.00	10/06/1952	996	24.0	U	U	28
49	41	8	10	8.00	1918	50	--	Z	U	29
125	105	10	12	12.25	08/ /1938	870	36.0	Z	U	30
73	62	6	5	9.00	01/05/1938	50	50.0	Z	U	31
360	132	6	33.6	29.39	11/15/1978	19	4.3	U	U	32
91	74	6	11	6.33	12/26/1940	170	5.6	Z	U	33
154	100	6	8	20.35	04/30/1953	6.0	--	Z	U	34
106	--	2	8.10	--	--	--	--	Z	U	35
81	--	2	12.10	--	--	--	--	Z	U	36
90	--	6	8.10	--	--	--	--	Z	U	37
90	--	2	7.60	--	--	--	--	Z	U	38
73	--	2	8.10	--	--	--	--	Z	U	39
79	--	6	8.10	--	--	--	--	Z	U	40
70	--	2	10.10	--	--	--	--	Z	U	41
98	88	6	16.30	--	--	100	--	Z	U	42
82	72	6	10.40	11.88	11/08/1978	310	18.0	W	N	43
82	72	6	10.50	11.60	11/08/1978	420	44.0	W	N	44
36	36	--	8	36.00	--	1	--	Z	U	45
123	72	8	19	25.00	1914	75	--	Z	U	46
386	129	6	28	37.00	1906	40	--	Z	U	47
102	--	10	28	27.00	1925	225	--	Z	U	48
587	160	8	25	27.00	1929	200	--	Z	U	49
98	83	10	27	28.26	05/05/1953	115	2.8	Z	U	50

ORIGINAL
(Red)

TABLE 2.-- RECORDS OF WELLS AND SUMPS -- CONTINUED

LOCAL NUMBER	SITE-ID	OWNER	DRILLER'S LICENSE NUMBER	DATE COMPLETED	METHOD CONST-RUCTED	FINISH	GEOLOGIC UNIT	DEPTH DRILLED (FEET)
411	395434075080701	PUBLICKER INDUSTRIES INC	0424	03/15/1941	C	S	112TRNN	87
412	395431075083301	PUBLICKER INDUSTRIES INC	0424	07/18/1941	C	S	112TRNN	96
413	395433075075701	PUBLICKER INDUSTRIES INC	0424	10/19/1942	C	S	112TRNN	80
414	395426075081001	PUBLICKER INDUSTRIES INC	0424	12/03/1942	C	S	112TRNN	87
415	395430075081001	PUBLICKER INDUSTRIES INC	0424	01/22/1943	C	S	211MRPAU	93
416	395428075075901	PUBLICKER INDUSTRIES INC	0424	07/08/1943	C	S	112TRNN	90
417	395429075080301	PUBLICKER INDUSTRIES INC	0424	10/04/1943	C	S	211MRPAL	172
418	395434075081101	PUBLICKER INDUSTRIES INC	0424	11/19/1943	C	S	211MRPAL	155
419	395432075080501	PUBLICKER INDUSTRIES INC	0424	02/01/1944	C	S	211MRPAL	167
420	395426075080101	PUBLICKER INDUSTRIES INC	0424	10/03/1944	C	S	211MRPAL	171
421	395415075080901	PUBLICKER INDUSTRIES INC	0424	05/ /1945	C	S	112TRNN	116
422	395410075081101	PUBLICKER INDUSTRIES INC	0424	06/18/1945	C	S	112TRNN	112
423	395431075082401	PUBLICKER INDUSTRIES INC	0424	08/04/1945	C	S	211MRPAL	192
424	395428075075902	PUBLICKER INDUSTRIES INC	0424	02/23/1943	C	S	112TRNN	--
425	395434075081001	CARGILL INC	-387	09/ /1926	C	S	211MRPAL	--
426	395436075080901	CARGILL INC	-387	01/05/1945	C	S	211MRPAL	--
427	395528075082601	BAUGH & SONS CO	0297	1912	C	S	211MRPAL	--
428	395529075082601	BAUGH & SONS CO	0297	1912	C	S	211MRPAL	--
429	395530075082701	BAUGH & SONS CO	0297	1913	C	S	211MRPAL	--
430	395539075084001	CROWN PAPER BOARD CO	0424	06/05/1952	C	S	211MRPAL	160
431	395533075083801	PHILA EXTRACTING CO	-204	1909	C	S	211MRPAL	122
432	395508075084901	INOLEX CORP	-204	1914	C	X	300WSCKO	--
433	395510075084802	INOLEX CORP	0297	1914	C	S	211MRPAL	--
434	395508075084701	INOLEX CORP	0297	1927	C	S	211MRPAL	--
435	395509075084801	INOLEX CORP	0249	05/30/1934	C	S	211MRPAL	--
436	395510075084801	INOLEX CORP	0297	1941	C	S	211MRPAL	--
437	395523075085001	INDIA REFINING CO	0297	1918	C	S	211MRPAL	--
438	395549075092401	STRATFORD THEATER	-387	06/ /1937	C	S	211MRPAL	--
439	395516075092501	ACADEMY THEATER	0249	05/10/1938	C	S	211MRPAL	--
440	395517075092401	JACKSON THEATER	0249	05/07/1936	C	S	112TRNN	--
441	395434075140601	PA FLEX MTL TUBING CO	-204	1918	C	X	300WSCKO	--
442	395430075135501	HOG ISLAND LUMBER CO	--	12/02/1946	C	X	300WSCKO	--
443	395326075140201	[redacted] (b) (6)	0249	04/18/1952	C	S	211MRPAL	--
444	395333075144301	HODGES RECORD CO	0249	12/16/1952	C	X	300WSCKO	--
445	395341075143201	PENN CITY NAT OIL CO	0297	1933	C	S	112TRNN	--
446	395344075142801	AMERICAN IRON WORKS	-387	12/ /1923	C	S	112TRNN	--
447	395524075131101	REGAL PETROLEUM PROD CO	0249	10/24/1947	C	X	300WSCKO	--
448	395451075143801	MC LOUGLIN BROS	0297	1944	C	X	300WSCKO	--
449	395457075145001	FELS & CO	-204	1902	C	X	300WSCKO	--
450	395458075144901	FELS & CO	-204	1905	C	X	300WSCKO	--
451	395518075085001	PUBLICKER INDUSTRIES INC	0424	12/08/1933	C	S	211MRPAL	170
452	395519075084401	PUBLICKER INDUSTRIES INC	0424	12/30/1933	C	S	211MRPAL	164
453	395517075084401	PUBLICKER INDUSTRIES INC	-387	02/ /1940	C	S	211MRPAL	--
454	395518075084601	PUBLICKER INDUSTRIES INC	0424	07/01/1941	C	S	112TRNN	75
455	395517075085101	PUBLICKER INDUSTRIES INC	0249	08/ /1941	C	S	211MRPAL	--
456	395518075085201	PUBLICKER INDUSTRIES INC	0249	10/31/1941	C	S	211MRPAL	--
457	395525075084501	PUBLICKER INDUSTRIES INC	0424	10/02/1941	C	S	211MRPAL	152
458	395515075085001	PUBLICKER INDUSTRIES INC	0424	06/05/1944	C	S	211MRPAL	168
459	395521075084501	PUBLICKER INDUSTRIES INC	0424	06/05/1944	C	S	211MRPAL	162
460	395513075085201	PUBLICKER INDUSTRIES INC	0249	02/12/1945	C	S	211MRPAL	--
461	395535075084101	PUBLICKER INDUSTRIES INC	0297	1913	C	S	112TRNN	--
462	395535075084102	PUBLICKER INDUSTRIES INC	0297	1913	C	S	112TRNN	--
463	395535075084103	PUBLICKER INDUSTRIES INC	0297	1913	C	S	211MRPAL	--
464	395535075084104	PUBLICKER INDUSTRIES INC	0297	1913	C	S	211MRPAL	--
465	395536075084301	PUBLICKER INDUSTRIES INC	-387	09/ /1925	C	S	211MRPAL	--
466	395534075084001	PUBLICKER INDUSTRIES INC	-387	07/ /1926	C	S	211MRPAL	--
467	395534075084301	PUBLICKER INDUSTRIES INC	-387	10/ /1933	C	S	211MRPAL	--
468	395558075084501	PUBLICKER INDUSTRIES INC	0249	10/16/1942	C	S	211MRPAL	--
469	395525075082101	PUBLICKER INDUSTRIES INC	0424	10/21/1948	C	S	211MRPAM	133
470	395527075083601	PUBLICKER INDUSTRIES INC	0424	--	C	S	--	--

ORIGINAL
(Red)

DEPTH OF WELL (FEET)	DEPTH CASED (FEET)	CASING DIAM-ETER (INCHES)	ALTITUDE OF LAND SURFACE (FEET	WATER LEVEL (FEET)	DATE WATER LEVEL MEASURED	DISCHARGE (GALLONS PER MINUTE)	SPECIFIC CAPACITY (GPM/FT)	USE OF SITE	USE OF WATER	LOCAL NUMBER
82	62	18	5.4	27.00	01/31/1979	1300	33.0	U	U	411
85	65	18	10	25.46	01/25/1979	1370	31.0	W	N	412
76	56	18	10	22.05	01/31/1979	1000	26.0	W	N	413
83	63	16	10	28.45	01/25/1979	980	33.0	W	N	414
92	72	16	8	34.00	01/22/1943	850	22.0	W	N	415
89	69	16	10	14.23	01/31/1979	1000	30.0	W	N	416
165	145	10	5.3	30.77	11/14/1978	726	16.0	W	N	417
149	129	10	3.9	30.45	01/31/1979	776	17.0	W	N	418
155	135	10	5.7	92.00	05/21/1944	744	19.0	W	N	419
164	149	10	8	90.00	10/18/1944	709	23.0	W	N	420
96	76	16	8	25.00	06/18/1945	660	14.0	Z	U	421
107	87	16	8	25.00	06/18/1945	750	12.0	Z	U	422
191	171	10	8	82.00	08/04/1945	300	4.0	Z	U	423
82	67	16	10	37.00	02/23/1943	302	11.0	Z	U	424
182	--	6	8	--	--	--	--	Z	U	425
178	158	10	10	93.00	01/05/1945	500	29.0	Z	U	426
133	--	8	8	9.00	1912	200	--	Z	U	427
140	--	8	8	12.00	1912	150	--	Z	U	428
140	--	8	8	18.00	1913	150	--	Z	U	429
118	108	10	13.7	32.00	06/05/1952	530	20.0	W	N	430
120	110	6	11	13.50	1909	75	--	Z	U	431
890	190	8	14	80.00	1914	5.0	--	Z	U	432
190	--	10	14	13.00	1914	550	42.0	Z	U	433
168	--	12	11	30.00	1927	695	--	Z	U	434
158	133	10	14	68.00	05/30/1934	500	71.0	Z	U	435
175	--	12	11.7	20.97	11/16/1978	400	11.0	U	U	436
150	109	8	11	20.00	1918	200	--	Z	U	437
86	--	8	24	--	--	--	--	Z	U	438
132	101	8	17	26.00	05/10/1938	420	10.0	Z	U	439
82	62	8	17	25.50	05/07/1936	105	--	Z	U	440
620	42	8	10	--	--	60	--	Z	U	441
97	--	6	10	16.00	12/02/1946	1.5	0.0	Z	U	442
78	68	6	8	11.08	04/18/1952	20	--	Z	U	443
200	66	8	5	9.00	12/16/1952	60	1.0	Z	U	444
38	--	4.50	5	23.00	1933	20	--	Z	U	445
62	--	12	5	8.50	05/26/1954	--	--	Z	U	446
351	22	8	20	4.00	10/24/1947	153	2.0	Z	U	447
120	--	6	50	--	--	27	--	U	U	448
560	50	8	20	4.09	09/15/1953	100	--	U	U	449
562	50	8	20	1.24	11/02/1978	12	--	U	U	450
154	124	14	11	17.34	11/14/1978	1080	25.0	Z	U	451
160	130	14	11	18.16	02/01/1979	1100	37.0	Z	U	452
159	--	12	13	19.78	02/01/1979	--	--	Z	U	453
50	40	18	13	17.40	02/01/1979	21	7.1	Z	U	454
155	96	8	13	16.96	02/01/1979	--	--	Z	U	455
156	--	10	13	68.00	10/31/1941	--	--	Z	U	456
139	119	12	11	70.00	10/02/1941	620	14.0	Z	U	457
152	127	10	11	77.00	06/05/1944	715	16.0	Z	U	458
157	127	10	11	19.37	02/01/1979	743	21.0	Z	U	459
172	151	10	13	80.00	02/12/1945	375	6.4	Z	U	460
60	--	8	12	12.00	1913	75	--	Z	U	461
60	--	6	12	15.00	1913	75	--	Z	U	462
112	--	8	12	15.00	1913	120	--	Z	U	463
112	--	8	12	15.00	1913	125	--	Z	U	464
157	--	8	14	--	--	500	--	Z	U	465
165	--	8	14.3	21.90	02/01/1979	700	--	U	U	466
140	113	10	13	--	--	1350	--	Z	U	467
113	89	10	15.9	17.16	12/04/1978	230	4.1	U	U	468
128	118	10	10	16.89	11/14/1978	750	16.0	Z	U	469
--	--	--	10	19.48	11/14/1978	--	--	Z	U	470

ORIGINAL (Red)

TABLE 2.-- RECORDS OF WELLS AND SUMPS -- CONTINUED

LOCAL NUMBER	SITE-ID	OWNER OR IDENTIFIER	DRILLER'S LICENSE NUMBER	DATE COMPLETED	METHOD CONST-RUCTED	FINISH	GEOLOGIC UNIT	DEPTH DRILLED (FEET)
771	400524074593501	DAVID MICHAEL & CO	0413	1969	A	X	300WSCKO	--
772	400525074593901	DAVID MICHAEL & CO	0413	1969	A	X	300WSCKO	--
773	395937075063402	PHILA RUST PROOF CO	--	--	C	X	300WSCKO	--
774	400134075092001	FOX PRODUCTS CO	-221	1956	C	X	300WSCKO	--
775	395808075082201	C SCHMIDT & SONS INC	--	--	V	T	112TRNN	--
776	395718075082602	M WILDSTEIN & CO	--	--	--	--	--	--
777	400347074593602	TORRESDALE-FRANKFORD CC	--	--	D	W	300WSCKO	--
778	395537075121801	ATLANTIC RICHFIELD CO	--	07/ /1979	D	P	112TRNN	27
779	395538075122401	ATLANTIC RICHFIELD CO	--	1977	D	P	112TRNN	20
780	395529075084601	UNITED NESCO CONTAINER CO	0424	1953	C	S	211MRPAL	142
781	400203075140401	THE BORDMAN CO	-221	08/12/1955	C	X	300WSCKO	--
782	400203075140402	THE BORDMAN CO	-221	09/07/1955	C	X	300WSCKO	--
783	400019075101001	KEYSTONE PACKAGING	0330	11/08/1979	A	X	300WSCKO	--
784	395323075131901	CITY OF PHILA	-452	03/ /1980	A	S	112TRNN	36
785	395322075132001	CITY OF PHILA	-452	03/ /1980	A	S	112TRNN	36
786	395323075131801	CITY OF PHILA	-452	03/ /1980	A	S	112TRNN	40
787	395321075131901	CITY OF PHILA	-452	03/ /1980	A	S	112TRNN	25
788	395319075131501	CITY OF PHILA	-452	03/ /1980	A	S	112TRNN	40
789	395319075131701	CITY OF PHILA	-452	03/ /1980	A	S	112TRNN	--
790	395318075131501	CITY OF PHILA	-452	03/ /1980	A	S	112TRNN	40
791	395318075131701	CITY OF PHILA	-452	03/ /1980	A	S	112TRNN	40
792	395720075113701	UNIV OF PENNA	0330	1973	A	X	300WSCKO	--
793	395720075113801	UNIV OF PENNA	0330	1977	A	X	300WSCKO	--
794	400008075035001	ROHM AND HAAS CO	0413	10/ /1956	C	S	211MRPAL	78
795	400009075035101	ROHM AND HAAS CO	0413	10/ /1956	C	S	211MRPAL	52
796	395816075073301	CITY OF PHILA	--	05/ /1976	B	G	112TRNN	18
797	395459075140501	CITY OF PHILA	--	04/20/1976	B	G	112TRNN	26
798	395922075103301	CITY OF PHILA	--	10/ /1976	B	G	300WSCKO	24
799	395904075083401	CITY OF PHILA	--	05/ /1976	B	G	300WSCKO	23
800	400317075113101	CITY OF PHILA	--	09/ /1976	B	G	300WSCKO	44
801	400208075102601	[redacted] (b) (6)	-204	1919	C	X	300WSCKO	--
802	400318075151301	SCHUYLKILL VAL NATURE CTR	0514	03/ /1968	A	X	377CCKS	--
803	400329075150401	SCHUYLKILL VAL NATURE CTR	0514	--	A	X	377CCKS	--
804	400309075152901	SCHUYLKILL VAL NATURE CTR	--	1936	C	X	377CCKS	--
805	400044075032601	KROMETAL MFG CORP	--	--	--	--	211MRPAL	--
806	400536075034601	[redacted] (b) (6)	0248	08/ /1979	A	X	300WSCKO	--
807	400537075034601	[redacted]	0248	08/ /1979	A	X	300WSCKO	--
808	395327075131601	CITY OF PHILA	0404	01/ /1981	A	P	112TRNN	35
809	395327075131602	CITY OF PHILA	0404	01/ /1981	A	P	211MRPAU	89
810	395320075130301	CITY OF PHILA	0404	01/ /1981	A	P	211MRPAU	107
811	395320075130302	CITY OF PHILA	0404	01/ /1981	A	P	112TRNN	40
812	395319075130901	CITY OF PHILA	0404	01/ /1981	A	P	211MRPAU	115
813	395319075130902	CITY OF PHILA	0404	01/ /1981	A	P	112TRNN	40
814	395313075124801	CITY OF PHILA	0404	01/ /1981	A	P	211MRPAM	134
815	395313075124802	CITY OF PHILA	0404	01/ /1981	A	P	112TRNN	50
816	400225075133001	FAIRMOUNT FARM	-221	09/22/1955	C	X	300WSCKO	--
817	400244075032701	BRADLEYS COUNTRY TAVERN	-221	07/08/1955	C	X	300WSCKO	--
818	400322075135801	ROGGIO, ALBERT	-221	01/07/1954	C	X	300WSCKO	90
819	400242075034001	VITALES RESTAURANT	-387	07/03/1951	C	X	300WSCKO	--
820	395633075094901	DEL VAL FISH CO INC	0413	06/ /1979	A	S	211MRPAL	55
821	400308075145801	[redacted] (b) (6)	0514	03/ /1979	A	X	300WSCKO	--
822	395303075124401	CITY OF PHILA	0404	09/08/1981	H	--	--	171
823	395239075125301	CITY OF PHILA	0404	09/09/1981	H	--	--	60
824	395242075125101	CITY OF PHILA	0404	09/10/1981	H	--	--	166
825	395327075132401	CITY OF PHILA	-452	10/ /1981	--	P	112TRNN	--
826	395328075132301	CITY OF PHILA	-452	10/ /1981	--	P	112TRNN	--
827	395326075132401	CITY OF PHILA	-452	10/ /1981	--	P	112TRNN	--
828	395327075132301	CITY OF PHILA	-452	10/ /1981	--	P	112TRNN	--
---	395505075101701	SHUNK ST STATION SUMP	--	--	--	-	112TRNN	--
---	395550075100701	TASKER-MORRIS STS SUMP	--	--	--	-	112TRNN	--
---	395424075101001	VETERANS STADIUM SUMP	--	--	--	-	112TRNN	--

ORIGINAL
(Red)

DEPTH OF WELL (FEET)	DEPTH CASED (FEET)	CASING DIAM-ETER (INCHES)	ALTITUDE OF LAND SURFACE (FEET NGVD)	WATER LEVEL (FEET)	DATE WATER LEVEL MEASURED	DISCHARGE (GALLONS PER MINUTE)	SPECIFIC CAPACITY (GPM/FT)	USE OF SITE	USE OF WATER	LOCAL NUMBER
293	29	8	100	20.00	04/16/1969	83	1.1	W	N	771
353	30	8	90	8.87	04/16/1969	80	--	W	R	772
--	--	8	24.0	12.22	12/18/1978	--	--	Z	U	773
195	--	8	125	2.54	12/04/1979	--	--	U	U	774
--	--	--	23.4	--	--	--	--	U	U	775
--	--	--	8.95	6.70	11/09/1978	--	--	U	U	776
28	28	36	53	20.16	01/03/1979	--	--	U	U	777
25	16	16	17.1	1.39	11/14/1979	--	--	O	U	778
18	9	12	20.0	12.02	11/14/1979	--	--	O	U	779
134	112	8	11	34.00	1953	415	26.0	W	N	780
300	34	6	110	43.00	08/12/1955	24	0.3	Z	U	781
208	35	6	110	47.00	09/07/1955	31	0.4	Z	U	782
324	40	6	145	26.72	02/26/1980	25	--	U	U	783
27	10	12	10	--	--	--	--	W	D	784 ✓
29	10	12	10	--	--	--	--	W	D	785 ✓
32	10	12	10	--	--	--	--	W	D	786 ✓
25	19	12	10	--	--	--	--	U	U	787 ✓
40	10	12	10	--	--	--	--	W	D	788 ✓
--	--	12	10	--	--	--	--	W	D	789 ✓
40	10	12	10	--	--	--	--	W	D	790 ✓
40	14	12	10	--	--	--	--	W	D	791 ✓
300	--	6	70	--	--	5.0	--	W	Z	792
300	40	6	70	--	--	5.0	--	W	Z	793
54	25	6	8	--	--	3.3	--	U	U	794
52	39	--	8	--	--	--	--	U	U	795
18	13	1.50	14.4	8.67	10/09/1980	0.21	0.3	O	U	796
25	20	1.50	34.1	14.10	10/15/1980	0.08	0.0	O	U	797 ✓
24	19	1.50	107.6	16.72	10/09/1980	0.16	0.1	O	U	798
22	17	1.50	62.1	8.37	10/09/1980	0.22	0.1	O	U	799
43	38	1.50	290.6	15.00	10/22/1980	0.28	0.3	O	U	800
125	6	8	222	15.79	11/05/1980	17	--	U	U	801
400	--	6	345	--	--	7.0	--	W	H	802
180	--	6	333	--	--	7.0	--	W	H	803
180	--	6	220	--	--	7.0	--	W	H	804
60	--	8	20	12.00	--	60	--	W	N	805
263	33	6	135	31.13	11/17/1980	--	--	U	U	806
200	20	6	145	10.00	08/ /1979	7.5	0.0	W	E	807
23	18	4	4.7	14.08	02/04/1981	15	--	O	U	808 ✓
80	75	4	4.6	13.98	02/04/1981	30	--	O	U	809 ✓
100	95	4	10.7	19.46	02/04/1981	50	--	O	U	810 ✓
30	25	4	10.9	18.37	02/04/1981	10	--	O	U	811 ✓
110	105	4	11.9	20.63	02/04/1981	30	--	O	U	812 ✓
30	25	4	11.8	19.45	02/04/1981	7.0	--	O	U	813 ✓
130	125	4	7.5	15.69	02/04/1981	50	--	O	U	814 ✓
40	35	4	7.8	14.32	02/04/1981	15	--	O	U	815 ✓
308	50	6	300	25.00	09/22/1955	16	0.1	--	--	816
300	43	6	105	14.00	07/08/1955	58	0.6	--	--	817
90	33	6	350	15.00	01/07/1954	14	0.5	--	--	818
256	60	6	95	10.00	07/03/1951	55	1.1	U	U	819
55	35	6	35	18.00	06/ /1979	25	2.5	W	Q	820
275	40	6	310	42.00	03/ /1979	20	0.1	W	H	821
--	--	--	5	--	--	--	--	T	--	822
--	--	--	5	--	--	--	--	T	--	823
--	--	--	5	--	--	--	--	T	--	824
40	20	12	10	--	--	250	--	Z	U	825 ✓
40	20	12	10	--	--	250	--	Z	U	826 ✓
40	20	12	10	--	--	250	--	Z	U	827 ✓
40	20	12	10	--	--	250	--	Z	U	828 ✓
--	--	--	19	--	--	--	--	W	D	---
--	--	--	30	--	--	--	--	W	D	---
--	--	--	15	--	--	--	--	W	D	---

ORIGINAL
(Red)

APPENDIX D

PENNSYLVANIA
DER

Bureau of Forestry

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES
Post Office Box 1467
Harrisburg, Pennsylvania 17120

ORIGINAL
(Red)

January 3, 1986

717-787-3444

Ms. Georgia A. Kagle
Ridley Creek State Park - DER
Sycamore Mills Road
Media, PA 19063

Dear Georgia:

As you requested, I have reviewed the Pennsylvania Natural Diversity Inventory (PNDI) to display any occurrences of the "elements" of special concern in Pennsylvania located within the Tinicum National Environmental Center. Elements contained within the system of maps, manual files, and computer data base files include plant and animal species of special concern, exemplary plant communities, unique natural habitats, and outstanding geologic features located within the Commonwealth.

You should be able to interpret the data fields which describe each element, but I have enclosed the definitions of the state-status and precision symbols. Thanks for using the PNDI and spread the data base word around your office for me. Phone this office if you need additional information concerning the enclosures or future locations you may be working with for solid waste management.

Sincerely,

Kathy A. McKenna
Botanist
Forest Advisory Services

Enclosures (3)

ORIGINAL
(Red)

Precision (2)*

Precision to which an element occurrence (EO) as described, can be located on a topographic map. Code combinations allowed:

S or SC or SO

M or MO

G or GO

U

These codes are defined as follows:

S = Seconds; accuracy of locality mappable within a three-second radius (approximately 500 feet in diameter; EO is essentially under the dot). (I.e., the place as described in element source(s) is precisely mappable, whether or not element is known to occur precisely there. SC and SO resolve whether element occurs there)

M = Minute (within one minute, mappable to an area of approximately 1.5 miles or 2 km in radius).

G = General (to quad or place name precision only, precision within about 5 miles or 8 km).

U = Unmappable to a quad due to lack of information.

C = Confirmed; element found at site by a second qualified observer; exact locality as mapped confirmed within one-second radius (approximately 180 ft.) by field survey, specific site map, or similarly reliable source. C applies only to S-precision records; with very few exceptions.

O = Obscure; element and/or appropriate habitat not found in indicated area of S, M, or G radius) despite reasonably intensive field search(es) by qualified researchers at right time of year.

NOTE: An SC can be changed only if an error is found in identification or location of original report; failure to relocate the element later has no effect. An M or G report is usually to be kept as a separate EO record despite knowledge of an S or SC report within the same M- or G-precision area; hence M or G reports once entered can

ORIGINAL
(Red)

CLASSIFIED PLANT CATEGORY DEFINITIONS

PENNSYLVANIA EXTIRPATED - A classification of plant species believed by the Department to be extinct within Pennsylvania. These plants may or may not be in existence outside Pennsylvania. If plant species classified as "Pennsylvania Extirpated" are found to exist, the species automatically will be considered to be classified as "Pennsylvania Endangered".

PENNSYLVANIA ENDANGERED - A classification of plant species which are in danger of extinction throughout most or all of their natural range within Pennsylvania, if critical habitat is not maintained or if the species is greatly exploited by man. This classification shall also include any populations of plant species that have been classified as "Pennsylvania Extirpated," but which subsequently are found to exist in Pennsylvania.

PENNSYLVANIA THREATENED - A classification of plant species which may become endangered throughout most or all of their natural range within Pennsylvania, if critical habitat is not maintained to prevent their further decline in Pennsylvania, or if the species is greatly exploited by man.

PENNSYLVANIA RARE - A classification of plant species which are uncommon within Pennsylvania. All species of native wild plants classified as "Disjunct", "Endemic", "Limit of Range" and "Restricted" are included within the "Pennsylvania Rare" classification.

"Disjunct" - A sub-classification of plant species, which is composed of plant species that are significantly separated from their main area of distribution. The "Disjunct" sub-classification is contained within the larger classification of "Pennsylvania Rare".

"Endemic" - A sub-classification of plant species, which is composed of plant species that have limited ranges and that are confined to a specialized habitat. The sub-classification of "Endemic" is contained within the larger classification of "Pennsylvania Rare".

"Limit of Range" - A sub-classification of plant species, which is composed of plant species that are uncommon in Pennsylvania because they are at or near the periphery of their natural distribution. Within the main body of their distribution, these species may or may not be common. The sub-classification of "Limit of Range" is contained within the larger classification of "Pennsylvania Rare".

"Restricted" - A sub-classification of plant species, which is composed of species that are found in specialized habitats or in habitats infrequent within Pennsylvania, although the species may be common outside of the state. The sub-classification of "Restricted" is contained within the larger classification of "Pennsylvania Rare".

ORIGINAL
(Red)

PENNSYLVANIA VULNERABLE - A classification of plant species which are in danger of population decline within Pennsylvania because of their beauty, economic value, use as a cultivar, or other factors which indicate that persons may seek to remove these species from their native habitats.

SPECIAL CONCERN POPULATION - A classification that is composed of colonies, groups, or single individuals of a plant species that the Department has determined to be a unique occurrence deserving protection. Among the factors that may be used to classify a plant population within this category are the existence of unusual geographic locations, unisexual populations, or extraordinarily diverse plant populations.

TENTATIVELY UNDETERMINED - A classification of plant species which are believed to be in danger of population decline, but which cannot presently be included within another classification due to taxonomic uncertainties, limited evidence within historical records, or insufficient data.

UNLISTED - Plant species which are native to Pennsylvania, which are presently capable of sustaining their populations successfully, which are not in need or protection currently, and which currently are not included in classifications under this chapter.

ORIGINAL
(Red)

NT-NAME>
BOTAURUS LENTIGINOSUS
ION-NAME>
AMERICAN BITTERN
E-A-NAME>
TINICUM NATIONAL ENVIRONMENTAL CEN
E-STATUS>
PT
TATUS>
N
SHED-NAME>
DARBY CREEK
DELAWARE RIVER

OBSERVED>
1980-06
ESCRIPTION>
MARSH
ISION>
M
A>
HARDING AND HARDING (1980) REPORTED IT AS STILL NESTING AT TINICUM NEC IN THE 70'S, IN THE REEDS EDGING THE MARSH AND MILLER AND PRICE FOUND IT BREEDING IN THE REFUGE DURING THE 1950'S, WITH A NEST FOUND IN JUNE 1958 (POOLE, 1958).

NT-NAME>
IXOBRYCHUS EXILIS
ION-NAME>
LEAST BITTERN
E-A-NAME>
TINICUM NATIONAL ENVIRONMENTAL CEN
E-STATUS>
PT
TATUS>
N
SHED-NAME>
DARBY CREEK
DELAWARE RIVER

OBSERVED>
1980-06
SCRIPTION>
MARSH, NESTING IN THE REEDS EDGING THE MARSH AT TINICUM NEC
ISION>
M
A>
HARDING AND HARDING (1980) REPORTED IT AS STILL NESTING AT TINICUM NEC DURING THE 1970'S, IN THE REEDS EDGING THE MARSH AND PRICE AND MILLER REPORTED IT AS A COMMON BREEDER, WITH 27 NESTS FOUND FROM JUNE TO AUGUST 1959 (POOLE, 1958).

ORIGINAL
(Red)

LEMENT-NAME>
NYCTICORAX NYCTICORAX
MMON-NAME>
BLACK-CROWNED NIGHT-HERON
NAGE-A-NAME>
TINICUM NAT. ENVIRONMENTAL CENTER
STATE-STATUS>
N
D-STATUS>
N
ATERSHED-NAME>
DARBY CREEK
DELAWARE RIVER

OBSERVED>
1983-06
EN-DESCRIPTION>
MARSHES AND SWAMPS AT NATIONAL ENVIRONMENTAL CENTER.
ECISION>
M
-DATA>
MILLER REPORTED A COLONY IN THE EARLY 1950'S (POOLE, 1958); HARDING AND HARDING (1980) REPORTED NESTING IN THE 1970'S; AND DURING THE SUMMER OF 1983 OVER 30 NESTS WERE SUCCESSFUL AT THE TINICUM NATURAL ENVIR. CENTER (BIRDING HOTLINE, 1983)

LEMENT-NAME>
NYCTICORAX VIOLACEUS
MMON-NAME>
YELLOW-CROWNED NIGHT-HERON
E-A-NAME>
TINICUM NATIONAL ENVIR. CENTER
TATE-STATUS>
N
D-STATUS>
N
ATERSHED-NAME>
DARBY CREEK
DELAWARE RIVER

ST-OBSERVED>
1977
N-DESCRIPTION>
MARSHES AND SWAMPS.
ECISION>
M
-DATA>
ALTHOUGH HARDING AND HARDING (1980) REPORT IT AS A RARE VISITOR TO TINICUM, A BREEDING PAIR WAS PRESENT IN 1977 AND MILLER AND PRICE SAW AN IMMATURE ON 18 MAY 1958 (POOLE, 1958

ORIGINAL (Red)

MENT-NAME>
CIRCUS CYANEUS
ON-NAME>
NORTHERN HARRIER
GE-A-NAME>
TINICUM NATIONAL ENVIRONMENTAL CEN
TE-STATUS>
PS
STATUS>
N
ERSHED-NAME>
DARBY CREEK
DELAWARE RIVER

SERVED>
1970'S
-DESCRIPTION>
MARSH AND OPEN FIELD HABITAT
ISION>
M
ATA>
HARDING AND HARDING (1980) REPORT THIS SPECIES AS NESTING ATTINICUM NEC, IN THE AREA BETWEEN THE AIRPORT AND THE REFUGE, AND ALONG THE DELAWARE RIVER BELOW THE REFUGE AND THE AIRPORT IN THE 1970'S.

MENT-NAME>
RALLUS ELEGANS
ON-NAME>
KING RAIL
A-NAME>
TINICUM NATIONAL ENVIRONMENTAL CEN
TE-STATUS>
PE
STATUS>
N
ERSHED-NAME>
DARBY CREEK
DELAWARE RIVER

-OBSERVED>
1980
-DESCRIPTION>
MARSH
ISION>
M
ATA>
NELSON HOY PHOTOGRAPHED A NEST AT TINICUM ON 3 JUNE 1948; ANOTHER WAS REPORTED AT TINICUM PRESERVE IN 1959 BY J.C. MIL LER; AND HARDING AND HARDING (1980) REPORTED THAT IT STILL NESTED IN THE AREA IN 1980.

ORIGINAL
(Red)

T-NAME>
RALLUS LIMICOLA
ION-NAME>
VIRGINIA RAIL
-A-NAME>
TINICUM NATIONAL ENVI. CENTER
TE-STATUS>
N
ATUS>
N
SHED-NAME>
DARBY CREEK
DELAWARE RIVER

OBSERVED>
1980
RIPTION>
NESTING IN REEDS EDGING THE MARSH.
CISION>
M
A>
HARDING AND HARDING (1980) REPORT IT AS A REGULAR BUT HARD TO FIND BREEDER AT TINICUM NATIONAL ENVIRONMENTAL CENTER.

MENT-NAME>
TYTO ALBA
N-NAME>
BARN OWL
AGE-A-NAME>
TINICUM NATIONAL ENVIRONMENTAL CNT
TE-STATUS>
PS
ATUS>
N
ERSHED-NAME>
DARBY CREEK
DELAWARE RIVER

OBSERVED>
1979
-DESCRIPTION>
UNKNOWN
SION>
M
TA>
J.C. MILLER FOUND A NEST WITH THREE EGGS AT TINICUM ON 1 FEB1952 (POOLE, 1958) AND HARDING & HARDING (1980) REPORTED NESTING PAIRS AT TINICUM NATIONAL ENVIRONMENTAL CENTER DURING THE 1970'S.

ORIGINAL
(Red)

ENT-NAME>
ASIO FLAMMEUS
ON-NAME>
SHORT-EARED OWL
AGE-A-NAME>
TINICUM NATIONAL ENVIRONMENTAL CEN
E-STATUS>
PE
-STATUS>
N
RSHED-NAME>
DARBY CREEK
DELAWARE RIVER

BSERVED>
1980'S
DESCRIPTION>
UNKNOWN; PROBABLY GRASSY MEADOWS AND MARSH HABITAT
ISION>
S
DATA>
C.J. MILLER FOUND A PAIR AT TINICUM DURING THE NESTING SEAS-ON OF 1953 (POOLE, 1958). WOOD (1979) LISTS IT AS A CASUAL BREEDER AT PHILADELPHIA AIRPORT. HARDING AND HARDING (1980)STATE IT STILL BREEDS AT THE AIRPORT AND ALONG THE REFUGE'S

ENT-NAME>
CISTOTHORUS PLATENSIS
ON-NAME>
SEDGE WREN
A-NAME>
TINICUM NATIONAL ENVIRONMENTAL CEN
E-STATUS>
PT
D-STATUS>
N
ERSHED-NAME>
DARBY CREEK
DELAWARE RIVER

-OBSERVED>
1954
N-DESCRIPTION>
GRASSY MEADOWS AND MARSHES AT TINICUM
ISION>
M
-DATA>
J.C. MILLER FOUND SEDGE WRENS TO BE AN UNCOMMON BREEDING BIRD IN THE TINICUM AREA, AND LOCATED TWO NESTS WITH EGGS ON 27 JUNE 1950 (POOLE, 1958).

ORIGINAL
(Red)

T-NAME>
CISTOTHORUS PALUSTRIS
MON-NAME>
MARSH WREN
A-NAME>
TINICUM NATIONAL ENV. CENTER
TE-STATUS>
PS
TUS>
N
ED-NAME>
DARBY CREEK
DELAWARE RIVER

SERVED>
1980-06
IPTION>
MARSHES AND SWAMPS AT ENVIRONMENTAL CENTER.
ISION>
M
>
HARDING & HARDING (1980) REPORT THAT IT STILL NESTS AT THE PRESERVE FAVORING THE REEDS & CATTAILS ALONG THE DIKE. MILLER & PRICE FOUND IT A VERY COMMON BREEDER AT TINICUM IN THE 1950'S & R.C. HARLOW COLLECTED A SET OF EGGS AT TINICUM ON

-NAME>
RANA UTRICULARIA
ON-NAME>
SOUTHERN LEOPARD FROG
A-NAME>
TINICUM NATIONAL ENVIRONMENTAL CEN
US>
LE
TUS>
N
ED-NAME>
DARBY CREEK
DELAWARE RIVER

SERVED>
1936-04-15
RIPTION>
MARSH
SION>
M

COLLECTED AT TINICUM REFUGE BY CONANT ON 15 APRIL 1936 (CM- 14709).

ORIGINAL
(Red)

ELEMENT-NAME>
PSEUDEMYS RUBRIVENTRIS
COMMON-NAME>
REDBELLY TURTLE
MANAGE-A-NAME>
TINICUM NATIONAL ENVIRONMENTAL CEN
STATE-STATUS>
PE
FED-STATUS>
N
WATERSHED-NAME>
DARBY CREEK
DELAWARE RIVER

LAST-OBSERVED>
1962-04-28
-DESCRIPTION>
MARSH
PRECISION>
M
O-DATA>
SPECIMENS COLLECTED IN 1947 (NELSON AND HAY); 1951 BY H. DONAGHY; 1962 BY D. JENKINS; AND ALSO A SPECIMEN OF UNKNOWN DATE AND COLLECTOR.

ELEMENT-NAME>
KINOSTERNON SUBRUBRUM
COMMON-NAME>
EASTERN MUD TURTLE
MANAGE-A-NAME>
TINICUM NATIONAL ENVIRONMENTAL CEN
TE-STATUS>
PE
ED-STATUS>
N
ATERSHED-NAME>
DARBY CREEK
DELAWARE RIVER

LAST-OBSERVED>
1963-06
EN-DESCRIPTION>
MARSH
PRECISION>
M
O-DATA>
SPECIMEN(S) COLLECTED AT TINICUM MARSH (WILDLIFE REFUGE) BY RUDOLF STOCEK IN LATE JUNE 1963 (ANSP27081). SPECIMEN OF UNKNOWN DATE AND COLLECTOR ALSO TAKE AT TINICUM MARSH (CM- 33853).

ORIGINAL
(Red)

T-NAME>
HYLLOLYCAENA HYLLUS
N-NAME>
BRONZE COPPER
E-A-NAME>
TINICUM NATIONAL ENV. CENTER
STATUS>
PR
STATUS>
N
SHED-NAME>
DARBY CREEK
DELAWARE RIVER

-OBSERVED>
965-09-03
PTION>
UNKNOWN
ISION>
M
TA>
SHAPIRO COLLECTED THIS SPECIES AT TINICUM NATIONAL ENVIR- ONMENTAL CENTER ON 3 SEPT 1965 (OPLER, 1981).

ENT-NAME>
AMARANTHUS CANNABINUS (L.) SAUER
ON-NAME>
WATERHEMP RAGWEED
E-A-NAME>
TINICUM NATIONAL ENVIRONMENTAL CEN
US>
R
STATUS>
N
RSHED-NAME>
HERMESPROTA CREEK
DARBY CREEK
DELAWARE RIVER

-OBSERVED>
1984-09-14
DESCRIPTION>
TIDAL MARSH. ALSO: IMPOUNDMENT, OLD FIELDS, DREDGE SPOIL, & DISTURBED WOODLANDS.
CISION>
SC
ATA>
SEVERAL THOUSAND FRUITING INDIVIDUALS GROWING SINGLY, AND SCATTERED THROUGHOUT TIDAL MARSH.

ORIGINAL (Red)

LEMENT-NAME>
SCIRPUS FLUVIATILIS (TORR.) GRAY
OMMON-NAME>
RIVER BULLRUSH
NAGE-A-NAME>
TINICUM NATIONAL ENVIRONMENTAL CEN
TATE-STATUS>
PR
FED-STATUS>
N
TERSHED-NAME>
DARBY CREEK
DELAWARE RIVER

AST-OBSERVED>
1984-09-14
N-DESCRIPTION>
TIDAL MARSH ALONG DARBY CREEK; ALSO CONTAINS IMPOUNDMENTS, OLD FIELDS, DREDGE SPOIL, AND DISTRUBED WOODLAND.
ECISION>
SC
-DATA>
THOUSANDS OF INDIVIDUALS; 4 DISTINCT STANDS IN BUD & FLOWER,FLOWERS AMBER COLORED (JUNE 8); FORM EXTENSIVE MAT; PLANTS GROWING ON EDGE OF TIDAL MARSH ALONG IMPOUNDMENT DIKE.

EMENT-NAME>
CAREX BARRATTII SCHW. & TORR.
OMMON-NAME>
BARRATT'S SEDGE
NAGE-A-NAME>
TINICUM NATIONAL ENVIRONMENTAL CEN
ATE-STATUS>
PE
ED-STATUS>
C2
TERSHED-NAME>
DELAWARE RIVER

AST-OBSERVED>
1914-05-16
-DESCRIPTION>
SWAMPY WOODS & MEADOWS ALONG DELAWARE RIVER.
ECISION>
MO
-DATA>
SPECIMENS COLLECTED NEAR TINICUM & STORED AT AN: 21 MAY 1898BY C.F.SAUNDERS (5), SWAMPY WOODS; 18 JUNE 1902 BY W.STONE (3046), DELAWARE RIVER MEADOWS; 20/21 MAY 1905 BY S.S. VAN PELT,WOODS BELOW CHESTER; 16 MAY 1914, W.R.TAYLOR, ESSINGTON

ORIGINAL
(Red)

IENT-NAME>
ZIZANIA AQUATICA L.
ION-NAME>
INDIAN WILD RICE
GE-A-NAME>
TINICUM NATIONAL ENVIRONMENTAL CEN
E-STATUS>
PR
STATUS>
N
RSHED-NAME>
DARBY CREEK
DELAWARE RIVER

-OBSERVED>
1984-09-14
RIPTION>
TIDAL MARSH. ALSO: IMPOUNDMENTS, OLD FIELDS, DREDGE SPOIL,AND DISTURBED WOODLAND.
ISION>
SC
ATA>
MATURE STAND, QUITE LARGE; DISPERSING SEED; GROWS IN EXTEN- SIVE MAT. SMALL COLONIES AND INDIVIDUALS SCATTERED THROUGH-
OUT MARSH

ORIGINAL
(Red)

<ELEMENT-NAME>
IRIS PRISMATICA PURSH
<COMMON-NAME>
SLENDER BLUE IRIS
<MANAGE-A-NAME>
TINICUM NATL ENVIRONMENTAL CENTER
<STATE-STATUS>
PT
<FED-STATUS>
N
<WATERSHED-NAME>
DARBY CREEK
DELAWARE RIVER

<LAST-OBSERVED>
1912-06-24
<GEN-DESCRIPTION>
MARSH
<PRECISION>
G
<ADD-DATA>
SPEC COLLECTED FR DELAWARE RIVER MEADOWS, TINICUM TWP BY: W.STONE 6/26/1904,6/02/1901; J.W. COOKSFELD, 6/24/1912; PORTER 6/4/1869, 7/1864; SMITH 6/1866; UNNAMED 6/18/1902; FR TINI- CUM N OF RR & W OF STATION BY S.S. VAN PELT 6/11/1904. (AN).

<ELEMENT-NAME>
JUNCUS MILITARIS BIGEL.
<COMMON-NAME>
BAYONET RUSH
<MANAGE-A-NAME>
TINICUM NATIONAL ENVIRONMENTAL CTR
<STATE-STATUS>
PT
<FED-STATUS>
N
<WATERSHED-NAME>
DARBY CREEK
DELAWARE RIVER

<LAST-OBSERVED>
1866-09
<GEN-DESCRIPTION>
MARSH
<PRECISION>
G
<ADD-DATA>
SPECIMEN COLLECTED BY J.W. ECKFELDT, SEPTEMBER, 1866, FROM TINICUM (AN).

PLATE 1

ORIGINAL

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT

REGION	SITE NUMBER (Reg. assigned by Hq)
3	PA-413

GENERAL INSTRUCTIONS: Complete Sections I and III through XV of this form as completely as possible. Then use the information on this form to develop a Tentative Disposition (Section II). File this form in its entirety in the regional Hazardous Waste Log File. Be sure to include all appropriate Supplemental Reports in the file. Submit a copy of the forms to: U.S. Environmental Protection Agency; Site Tracking System; Hazardous Waste Enforcement Task Force (EN-335); 401 M St., SW; Washington, DC 20460.

I. SITE IDENTIFICATION

A. SITE NAME: CLEARVIEW LANDFILL

B. STREET (or other identifier): 84th & INDUSTRIAL BLVD.

C. CITY: DARBY TWP. (GEOG.) / PHILA. (P.O.)

D. STATE: PA

E. ZIP CODE: 19153

F. COUNTY NAME: DELAWARE

G. SITE OPERATOR INFORMATION

1. NAME: D. RICHARD HELLER

2. TELEPHONE NUMBER: 215-586-6722

3. STREET: 84th & INDUSTRIAL BLVD.

4. CITY: PHILA

5. STATE: PA

6. ZIP CODE: 19153

H. REALTY OWNER INFORMATION (if different from operator of site)

1. NAME:

2. TELEPHONE NUMBER:

3. STREET:

4. STATE:

5. ZIP CODE:

I. SITE DESCRIPTION

J. TYPE OF OWNERSHIP

☐ 1. FEDERAL ☐ 2. STATE ☐ 3. COUNTY ☐ 4. MUNICIPAL ☐ 5. PRIVATE

II. TENTATIVE DISPOSITION (complete this section last)

A. ESTIMATE DATE OF TENTATIVE DISPOSITION (mo., day, & yr.): 9/27/82

B. APPARENT SERIOUSNESS OF PROBLEM

☐ 1. HIGH ☐ 2. MEDIUM ☒ 3. LOW ☐ 4. NONE

C. PREPARER INFORMATION

1. NAME: ROBERT ZANG

2. TELEPHONE NUMBER: 215-565-1687

3. DATE (mo., day, & yr.): 9/27/82

III. INSPECTION INFORMATION

A. PRINCIPAL INSPECTOR INFORMATION

1. NAME: ROBERT ZANG

2. TITLE: SOLID WASTE SPECIALIST

3. ORGANIZATION: PA DER/BUR. OF SOLID WASTE MGT.

4. TELEPHONE NO. (area code & no.): 215-565-1687

B. INSPECTION PARTICIPANTS

1. NAME	2. ORGANIZATION	3. TELEPHONE NO.
ROBERT ZANG	PA DER / BSWM	215-565-1687
ROBERT YOUNG	PA DER/BUR. OF WATER QUALITY MGT.	215-631-2405/2410

C. SITE REPRESENTATIVES INTERVIEWED (corporate officials, workers, residents)

1. NAME	2. TITLE & TELEPHONE NO.	3. ADDRESS

DER/BSWM WAS REFUSED ACCESS TO PROPERTY BY D. RICHARD HELLER (ON 2/24/82)

STATE SI

Continued From Front

ORIGINAL (Red)

III. INSPECTION INFORMATION (continued)

D. GENERATOR INFORMATION (sources of waste)

1. NAME	2. TELEPHONE NO.	3. ADDRESS	4. WASTE TYPE GENERATED
CITY OF PHILA.	UNKNOWN	UNKNOWN	MUNICIPAL
OTHERS UNKNOWN			
" "			

TRANSPORTER/HAULER INFORMATION

1. NAME	2. TELEPHONE NO.	3. ADDRESS	4. WASTE TYPE TRANSPORTED
	UN	KNOWN	

F. IF WASTE IS PROCESSED ON SITE AND ALSO SHIPPED TO OTHER SITES, IDENTIFY OFF-SITE FACILITIES USED FOR DISPOSAL.

1. NAME	2. TELEPHONE NO.	3. ADDRESS
		N/A

G. DATE OF INSPECTION (mo., day, & yr.)	H. TIME OF INSPECTION	I. ACCESS GAINED BY: (credentials must be shown in all cases)
—	—	☐ 1. PERMISSION ☐ 2. WARRANT

J. WEATHER (describe)

IV. SAMPLING INFORMATION

A. Mark 'X' for the types of samples taken and indicate where they have been sent e.g., regional lab, other EPA lab, contractor, etc. and estimate when the results will be available.

1. SAMPLE TYPE	2. SAMPLE TAKEN (mark 'X')	3. SAMPLE SENT TO:	4. DATE RESULTS AVAILABLE
a. GROUNDWATER	X	HARRISBURG (DER LAB)	3/82
b. SURFACE WATER	X	" "	4/82
c. WASTE			
d. AIR			
e. RUNOFF			
f. SPILL			
g. SOIL			
h. VEGETATION			
i. OTHER (specify) LEACHATE SEEPS	X	HARRISBURG (DER LAB)	4/82

B. FIELD MEASUREMENTS TAKEN (e.g., radioactivity, explosivity, PH, etc.)

1. TYPE	2. LOCATION OF MEASUREMENTS	3. RESULTS
	NONE	

ORIGINAL (Red)

Continued From Page 2

IV. SAMPLING INFORMATION (continued)

C. PHOTOS (11)

1. TYPE OF PHOTOS
- [x] a. GROUND
- [ ] b. AERIAL

2. PHOTOS IN CUSTODY OF: ROBERT ZANG

D. SITE MAPPED? NO

- [ ] YES. SPECIFY LOCATION OF MAPS:

E. COORDINATES

1. LATITUDE (deg.-min.-sec.): UNKNOWN
2. LONGITUDE (deg.-min.-sec.): UNKNOWN

V. SITE INFORMATION

A. SITE STATUS

- [ ] 1. ACTIVE (Those industrial or municipal sites which are being used for waste treatment, storage, or disposal on a continuing basis, even if infrequently.)
- [ ] 2. INACTIVE (Those sites which no longer receive wastes.)
- [x] 3. OTHER (specify): PROMISCUOUS DUMP * (Those sites that include such incidents like "midnight dumping" where no regular or continuing use of the site for waste disposal has occurred.)

* TOTAL LACK OF SECURITY AT NIGHT

B. IS GENERATOR ON SITE?

- [x] 1. NO
- [ ] 2. YES (specify generator's four-digit SIC Code): _____

C. AREA OF SITE (in acres): 100+

D. ARE THERE BUILDINGS ON THE SITE?

- [ ] 1. NO
- [x] 2. YES (specify): GARAGES, OFFICES AND A LARGE QUONSE HUT

VI. CHARACTERIZATION OF SITE ACTIVITY

Indicate the major site activity(ies) and details relating to each activity by marking 'X' in the appropriate boxes.

'X'	A. TRANSPORTER	'X'	B. STORER	'X'	C. TREATER	'X'	D. DISPOSER
	1. RAIL		1. PILE		1. FILTRATION		1. LANDFILL
	2. SHIP		2. SURFACE IMPOUNDMENT		2. INCINERATION		2. LANDFARM
	3. BARGE		3. DRUMS		3. VOLUME REDUCTION	X	3. OPEN DUMP
	4. TRUCK		4. TANK, ABOVE GROUND		4. RECYCLING/RECOVERY		4. SURFACE IMPOUNDMENT
	5. PIPELINE		5. TANK, BELOW GROUND		5. CHEM./PHYS./TREATMENT	X	5. MIDNIGHT DUMPING *
	6. OTHER (specify):		6. OTHER (specify):		6. BIOLOGICAL TREATMENT		6. INCINERATION
					7. WASTE OIL REPROCESSING		7. UNDERGROUND INJECTION
					8. SOLVENT RECOVERY		8. OTHER (specify):
					9. OTHER (specify):		

* POSSIBILITY ONLY — NO EVIDENCE TO DATE

E. SUPPLEMENTAL REPORTS: If the site falls within any of the categories listed below, Supplemental Reports must be completed. Indicate which Supplemental Reports you have filled out and attached to this for.. N/A

- [ ] 1. STORAGE
- [ ] 2. INCINERATION
- [ ] 3. LANDFILL
- [ ] 4. SURFACE IMPOUNDMENT
- [ ] 5. DEEP WELL
- [ ] 6. CHEM/BIO/PHYS TREATMENT
- [ ] 7. LANDFARM
- [ ] 8. OPEN DUMP
- [ ] 9. TRANSPORTER
- [ ] 10. RECYCLOR/RECLAIMER

VII. WASTE RELATED INFORMATION

A. WASTE TYPE

- [ ] 1. LIQUID
- [x] 2. SOLID
- [ ] 3. SLUDGE
- [ ] 4. GAS

B. WASTE CHARACTERISTICS

- [ ] 1. CORROSIVE
- [ ] 2. IGNITABLE
- [ ] 3. RADIOACTIVE
- [ ] 4. HIGHLY VOLATILE
- [ ] 5. TOXIC
- [ ] 6. REACTIVE
- [x] 7. INERT (TRASH & GARBAGE)
- [ ] 8. FLAMMABLE
- [ ] 9. OTHER (specify):

NOTE: SOME INDUSTRIAL WASTES MAY HAVE DUMPED (NO PROOF)

C. WASTE CATEGORIES

1. Are records of wastes available? Specify items such as manifests, inventories, etc. below.

NO, — NO RECORDS WERE KEPT BY HELLER

Continued From Front

WASTE RELATED INFORMATION (continued)

ORIGINAL (Red)

2. Estimate the amount (specify unit of measure) of waste by category; mark 'X' to indicate which wastes are present

a. SLUDGE	b. OIL	c. SOLVENTS	d. CHEMICALS	e. SOLIDS	f. OTHER
AMOUNT	AMOUNT	AMOUNT UNKNOWN	AMOUNT UNKNOWN	AMOUNT UNKNOWN	AMOUNT THOUSANDS
UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE —	UNIT OF MEASURE —	UNIT OF MEASURE —	UNIT OF MEASURE TONS
X (1) PAINT, PIGMENTS	X (1) OILY WASTES	X (1) HALOGENATED SOLVENTS ACETONE	X (1) ACIDS	X (1) FLYASH	X (1) LABORATORY, PHARMACEUT.
(2) METALS SLUDGES	(2) OTHER (specify):	(2) NON-HALOGNTD. SOLVENTS POSSIBLE	(2) PICKLING LIQUORS	(2) ASBESTOS	(2) HOSPITAL
(3) POTW		(3) OTHER (specify):	X (3) CAUSTICS	(3) MILLING/MINE TAILINGS	(3) RADIOACTIVE
(4) ALUMINUM SLUDGE			(4) PESTICIDES POSSIBLE	(4) FERROUS SMELTING WASTES	X (4) MUNICIPAL
(5) OTHER (specify):			(5) DYES/INKS	(5) NON-FERROUS SMLTG. WASTES	(5) OTHER (specify):
			X (6) CYANIDE LOW LEVELS	(6) OTHER (specify): INCINERATOR RESIDUE	
			X (7) PHENOLS LOW LEVELS		
			(8) HALOGENS		
			(9) PCB POSSIBLE		
			X (10) METALS		
			(11) OTHER (specify):		

D. LIST SUBSTANCES OF GREATEST CONCERN WHICH ARE ON THE SITE (place in descending order of hazard)

1. SUBSTANCE	2. FORM (mark 'X') a. SOLID	b. LIQ.	c. VAPOR	3. TOXICITY (mark 'X') a. HIGH	b. MED.	c. LOW	d. NONE	4. CAS NUMBER	5. AMOUNT	6. UNIT
LEAD		X			X			UNKNOWN	13-408	ppb
MANGANESE		X				X		"	60-490	"
IRON		X				X		"	3200-15,000	"
NH_3N		X					X	"	2.8-32	mg/l
PHENOLS		X			X			"	35-48	"

VIII. HAZARD DESCRIPTION

FIELD EVALUATION HAZARD DESCRIPTION: Place an 'X' in the box to indicate that the listed hazard exists. Describe the hazard in the space provided.

☐ A. HUMAN HEALTH HAZARDS

NONE DETECTED TO DATE

...nued From Page 4

VIII. HAZARD DESCRIPTION (continued)

ORIGINAL (Red)

☐ B. NON-WORKER INJURY/EXPOSURE

NONE

☐ C. WORKER INJURY/EXPOSURE

NONE

☐ D. CONTAMINATION OF WATER SUPPLY

NONE (NO WELLS IN AREA)

☐ E. CONTAMINATION OF FOOD CHAIN

NONE

☒ F. CONTAMINATION OF GROUND WATER

(1) SOME CONTAMINATION (ACETONE)
(2) OTHER ORGANICS MAY BE PRESENT ALSO

☒ G. CONTAMINATION OF SURFACE WATER

DARBY CREEK IS BEING POLLUTED BY LEACHATE FROM LANDFILL

Continued From Front

ORIGINAL (Red)

☐ H. DAMAGE TO FLORA/FAUNA

UNKNOWN

☐ I. FISH KILL

UNKNOWN

☐ J. CONTAMINATION OF AIR

NONE

☒ K. NOTICEABLE ODORS

(1) NONE ON LANDFILL (prior to 2/24/82)
(2) FOUL (LEACHATE ?) ODOR WHILE WALKING STREAM FOR SAMPLING

☒ L. CONTAMINATION OF SOIL

LEACHATE POND PRESENT ON LANDFILL (NEAR DARBY CREEK)

☐ M. PROPERTY DAMAGE

NONE

Continue On Page 7

Vd From Page 6

VIII. HAZARD DESCRIPTION (continued)

ORIGINAL (Red)

☐ N. FIRE OR EXPLOSION

NONE

☒ O. SPILLS/LEAKING CONTAINERS/RUNOFF/STANDING LIQUID

LEACHATE POND MENTIONED IN "L" ABOVE

☐ P. SEWER, STORM DRAIN PROBLEMS

NONE

☐ Q. EROSION PROBLEMS

NONE

☒ R. INADEQUATE SECURITY

A DEFINITE PROBLEM, OR AT LEAST A POTENTIAL PROBLEM

☐ S. INCOMPATIBLE WASTES

NONE

ORIGINAL (Red)

VIII. HAZARD DESCRIPTION (continued)

☐ T. MIDNIGHT DUMPING

A DEFINITE POSSIBILITY (SEE "R" ABOVE), BUT NO PROOF THAT CHEMICAL DUMPING HAS OCCURRED

☐ U. OTHER (specify):

IX. POPULATION DIRECTLY AFFECTED BY SITE (NUISANCE)

A. LOCATION OF POPULATION	B. APPROX. NO. OF PEOPLE AFFECTED	C. APPROX. NO. OF PEOPLE AFFECTED WITHIN UNIT AREA	D. APPROX. NO. OF BUILDINGS AFFECTED	E. DISTANCE TO SITE (specify units)
1. IN RESIDENTIAL AREAS	50-100+	UNKNOWN	—	WITHIN ca. 1/4 MILE
2. IN COMMERCIAL OR INDUSTRIAL AREAS				
3. IN PUBLICLY TRAVELLED AREAS				
4. PUBLIC USE AREAS (parks, schools, etc.)				

X. WATER AND HYDROLOGICAL DATA

A. DEPTH TO GROUNDWATER (specify unit)	B. DIRECTION OF FLOW	C. GROUNDWATER USE IN VICINITY
ABOUT 10-15 FEET	UNKNOWN	NONE
D. POTENTIAL YIELD OF AQUIFER	**E. DISTANCE TO DRINKING WATER SUPPLY (specify unit of measure)**	**F. DIRECTION TO DRINKING WATER SUPPLY**
UNKNOWN	UNKNOWN	UNKNOWN

G. TYPE OF DRINKING WATER SUPPLY N/A

☐ 1. NON-COMMUNITY < 15 CONNECTIONS ☐ 2. COMMUNITY (specify town): > 15 CONNECTIONS

☐ 3. SURFACE WATER ☐ 4. WELL

Continue On Page 9

Continued From Front

XIV. PERMIT INFORMATION N/A

List all applicable permits held by the site and provide the related information.

A. PERMIT TYPE (e.g., RCRA, State, NPDES, etc.)	B. ISSUING AGENCY	C. PERMIT NUMBER	D. DATE ISSUED (mo., day, & yr.)	E. EXPIRATION DATE (mo., day, & yr.)	F. IN COMPLIANCE (mark 'X')		
					1. YES	2. NO	3. UNKNOWN

XV. PAST REGULATORY OR ENFORCEMENT ACTIONS

☐ NONE ☒ YES (summarize in this space)

CLOSED BY COURT ACTION (per PA DER/BSWM) ON AUGUST 7, 1973 DUE TO LACK OF A PERMIT AND VIOLATIONS

NOTE: Based on the information in Sections III through XV, fill out the Tentative Disposition (Section II) information on the first page of this form.

RECEIVED
Division of Operations
SEP 29 1982
SOLID WASTE MANAGEMENT

ORIGINAL
(Red)

11/25/81 11⁴⁵ AM Sunny / Cold

Subject: Dumping on Closed Landfill
To: Clearview Landfill (Del. Co.) file
From: Robert Zang

Met with Chip Bassett, Executive Director of the Eastwick Project area Committee (PAC) to inform him of the conditions existing at the landfill site. (Refer to attached letters from Eastwick PAC)

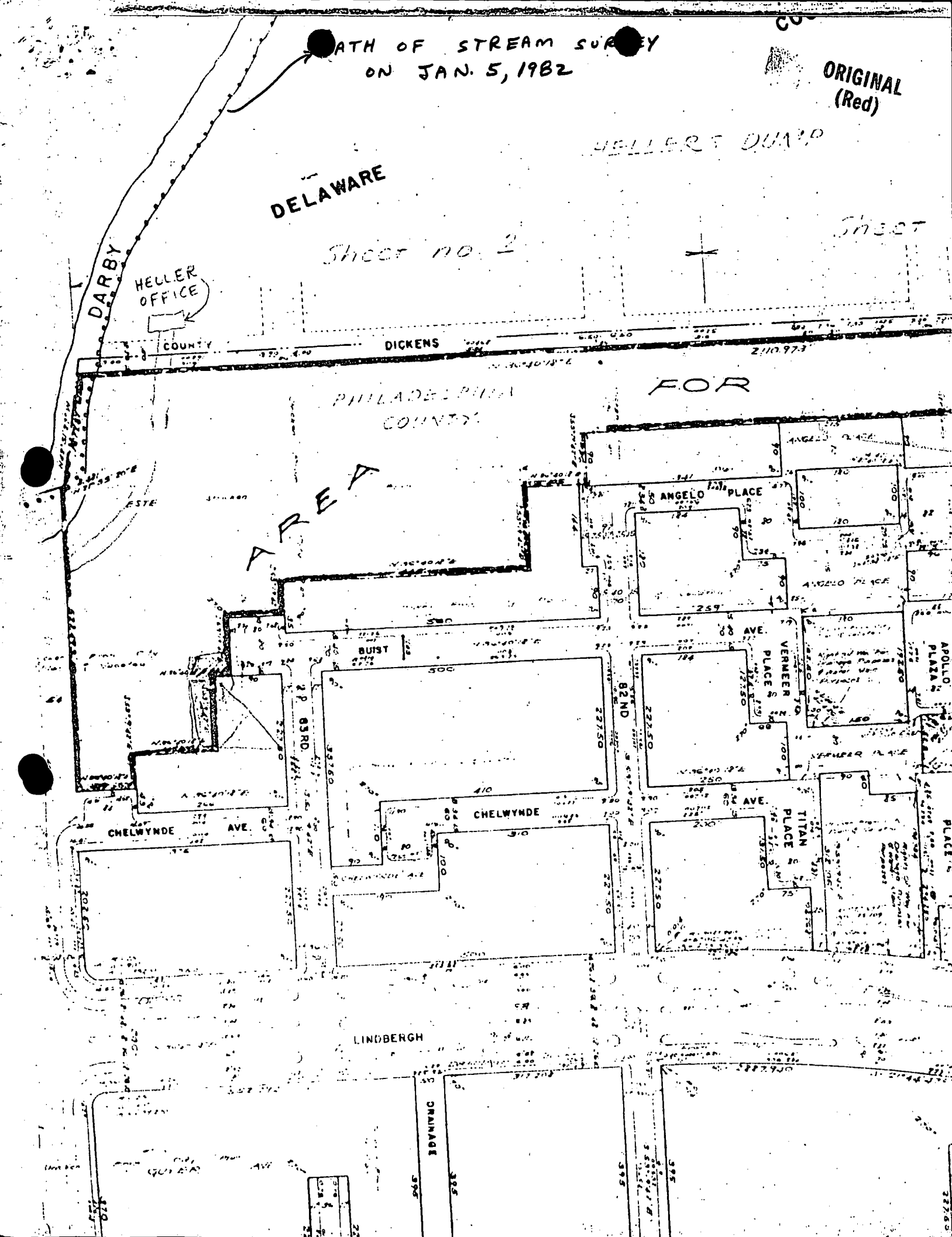
Conditions Noted*:

(1) a dump area between 84th St. and Richard Heller's office - consisting of a large quantity of demo debris (lumber, cinder block, etc.....), an old street cleaning machine, bulky items, car parts, trash, etc.....

(2) a dump area between 84th St. and the old landfill slope - consisting of a large amount of demo debris, tires, solidified concrete, trash, etc.....

(3) a dump area on the top of the landfill consisting of at least 10 yd.³ of paper bags of granular insulation

* 4 photos taken of these areas on 11/25/81


PATH OF STREAM SURVEY
ON JAN. 5, 1982
ORIGINAL
(Red)
HELLERT DUMP
DELAWARE
SHEET NO. 2
SHEET
DARBY
HELLER
OFFICE
COUNTY
DICKENS
PHILADELPHIA
COUNTY
FOR
AREA
ANGELO PLACE
BUIST
83RD
82ND
VERMEER PLACE
APOLLO PLAZA
CHELWYNDE AVE.
CHELWYNDE
TITAN PLACE
LINDBERGH
DRAINAGE

ORIGINAL
(Red)

(4) numerous bulky scrap metal items placed in an area near Mr. Heller's office

(5) large bundles of lumber and paper in same area as bulky items

(6) several piles of demo debris scattered in same area as bulky items

An N.O.V. will be sent to D. Richard Heller, with blind cc's sent to Chas. Andrews (Phila. Redev. Auth., Project Mgr.) and Chip Bassett (Eastwick PAC, Director). Mr. Heller is not the owner of the site, but is in charge of the area. The owner of the area in question is the Clearview Land Development Co., 83rd & Buist Ave., Phila., PA — 19153.

I

ORIGINAL (Red)

EPA

POTENTIAL HAZARDOUS WASTE SITE
IDENTIFICATION AND PRELIMINARY ASSESSMENT

REGION	SITE NUMBER (to be assigned by HQ)
3	PA-413

NOTE: This form is completed for each potential hazardous waste site to help set priorities for site inspection. The information submitted on this form is based on available records and may be updated on subsequent forms as a result of additional inquiries and on-site inspections.

GENERAL INSTRUCTIONS: Complete Sections I and III through X as completely as possible before Section II (*Preliminary Assessment*). File this form in the Regional Hazardous Waste Log File and submit a copy to: U.S. Environmental Protection Agency; Site Tracking System; Hazardous Waste Enforcement Task Force (*EN-335*); 401 M St., SW; Washington, DC 20460.

I. SITE IDENTIFICATION

A. SITE NAME: CLEARVIEW LANDFILL

B. STREET (or other identifier): 83 RD. AND BUIST AVE.

C. CITY: DARBY TWP. (GEOG.) / PHILA. (P.O.)

D. STATE: PA

E. ZIP CODE: 19153

F. COUNTY NAME: DELAWARE

G. OWNER/OPERATOR (if known)

1. NAME: D. RICHARD HELLER

2. TELEPHONE NUMBER: 215-586-6722

H. TYPE OF OWNERSHIP

☐ 1. FEDERAL ☐ 2. STATE ☐ 3. COUNTY ☐ 4. MUNICIPAL ☒ 5. PRIVATE ☐ 6. UNKNOWN

I. SITE DESCRIPTION

CLOSED UNPERMITTED LANDFILL

J. HOW IDENTIFIED (i.e., citizen's complaints, OSHA citations, etc.)

DER/BSWM MONITORING OF SITE SINCE 1974

K. DATE IDENTIFIED (mo., day, & yr.): UNKNOWN

L. PRINCIPAL STATE CONTACT

1. NAME: ROBERT ZANG

2. TELEPHONE NUMBER: 215-565-1687

II. PRELIMINARY ASSESSMENT (complete this section last)

A. APPARENT SERIOUSNESS OF PROBLEM

☐ 1. HIGH ☐ 2. MEDIUM ☐ 3. LOW ☐ 4. NONE ☒ 5. UNKNOWN

B. RECOMMENDATION

☐ 1. NO ACTION NEEDED (no hazard)

☐ 2. IMMEDIATE SITE INSPECTION NEEDED
a. TENTATIVELY SCHEDULED FOR:
b. WILL BE PERFORMED BY:

☒ 3. SITE INSPECTION NEEDED
a. TENTATIVELY SCHEDULED FOR: JAN., 1982 - FEB., 1982
b. WILL BE PERFORMED BY: DER/BSWM

☐ 4. SITE INSPECTION NEEDED (low priority)

C. PREPARER INFORMATION

1. NAME: Robert Zang

2. TELEPHONE NUMBER: 215-565-1687

3. DATE (mo., day, & yr.): 1/18/82

III. SITE INFORMATION

A. SITE STATUS

☐ 1. ACTIVE (Those industrial or municipal sites which are being used for waste treatment, storage, or disposal on a continuing basis, even if infrequently.)

☒ 2. INACTIVE (Those sites which no longer receive wastes.) WITH REFERENCE TO COMMERCIAL ACTIVITY

☒ 3. OTHER (specify): PROMISCUOUS DUMP SITE (Those sites that include such incidents like "midnight dumping" where no regular or continuing use of the site for waste disposal has occurred.)

B. IS GENERATOR ON SITE?

☐ 1. NO ☒ 2. YES (specify generator's four-digit SIC Code): UNKNOWN

C. AREA OF SITE (in acres): ca. 100+

D. IF APPARENT SERIOUSNESS OF SITE IS HIGH, SPECIFY COORDINATES
1. LATITUDE (deg.-min.-sec.)
2. LONGITUDE (deg.-min.-sec.)

E. ARE THERE BUILDINGS ON THE SITE?

☐ 1. NO ☒ 2. YES (specify): OFFICE BLDG., QUONSET HUT, GARAGE, ETC...

Continued From Front

ORIGINAL (Red)

IV. CHARACTERIZATION OF SITE ACTIVITY

Indicate the major site activity(ies) and details relating to each activity by marking 'X' in the appropriate boxes.

'X'	A. TRANSPORTER	'X'	B. STORER	'X'	C. TREATER	'X'	D. DISPOSER
	1. RAIL		1. PILE		1. FILTRATION		1. LANDFILL
	2. SHIP		2. SURFACE IMPOUNDMENT		2. INCINERATION		2. LANDFARM
	3. BARGE		3. DRUMS		3. VOLUME REDUCTION	X	3. OPEN DUMP
	4. TRUCK		4. TANK, ABOVE GROUND		4. RECYCLING/RECOVERY		4. SURFACE IMPOUNDMENT
	5. PIPELINE		5. TANK, BELOW GROUND		5. CHEM./PHYS. TREATMENT	X	5. MIDNIGHT DUMPING ?
	6. OTHER (specify):		6. OTHER (specify):		6. BIOLOGICAL TREATMENT		6. INCINERATION
					7. WASTE OIL REPROCESSING		7. UNDERGROUND INJECTION
					8. SOLVENT RECOVERY		8. OTHER (specify):
					9. OTHER (specify):		

E. SPECIFY DETAILS OF SITE ACTIVITIES AS NEEDED

REFER TO NOTICE OF VIOLATION DATED 12/8/81 (ATTACHED)

V. WASTE RELATED INFORMATION

A. WASTE TYPE

[ ] 1. UNKNOWN [ ] 2. LIQUID [X] 3. SOLID [ ] 4. SLUDGE [ ] 5. GAS

B. WASTE CHARACTERISTICS

[X] 1. UNKNOWN [ ] 2. CORROSIVE [ ] 3. IGNITABLE [ ] 4. RADIOACTIVE [ ] 5. HIGHLY VOLATILE
[ ] 6. TOXIC [ ] 7. REACTIVE [X] 8. INERT [ ] 9. FLAMMABLE

1. REFERS TO LEACHATE 8. REFERS TO DUMPING ACTIVITIES

[ ] 10. OTHER (specify):

C. WASTE CATEGORIES

1. Are records of wastes available? Specify items such as manifests, inventories, etc. below.

NO — NO RECORDS WERE/ARE KEPT

2. Estimate the amount (specify unit of measure) of waste by category; mark 'X' to indicate which wastes are present.

a. SLUDGE	b. OIL	c. SOLVENTS	d. CHEMICALS	e. SOLIDS	f. OTHER
AMOUNT	AMOUNT	AMOUNT UNKNOWN	AMOUNT UNKNOWN	AMOUNT	AMOUNT CA. 200+
UNIT OF MEASURE	UNIT OF MEASURE	~~UNIT OF MEASURE~~ (REFERRING LEACHATE	~~UNIT OF MEASURE~~ TO POSSIBLE SEEPS)	UNIT OF MEASURE	UNIT OF MEASURE YD.³
[ ] (1) PAINT, PIGMENTS	[ ] (1) OILY WASTES	[X] (1) HALOGENATED SOLVENTS	[ ] (1) ACIDS	[ ] (1) FLYASH	[ ] (1) LABORATORY PHARMACEUT.
[ ] (2) METALS SLUDGES	[ ] (2) OTHER (specify):	[X] (2) NON-HALOGNTD. SOLVENTS	[ ] (2) PICKLING LIQUORS	[ ] (2) ASBESTOS	[ ] (2) HOSPITAL
[ ] (3) POTW		[ ] (3) OTHER (specify):	[ ] (3) CAUSTICS	[ ] (3) MILLING/MINE TAILINGS	[ ] (3) RADIOACTIVE
[ ] (4) ALUMINUM SLUDGE			[ ] (4) PESTICIDES	[ ] (4) FERROUS SMLTG. WASTES	[X] (4) MUNICIPAL
[ ] (5) OTHER (specify):			[ ] (5) DYES/INKS	[ ] (5) NON-FERROUS SMLTG. WASTES	[ ] (5) OTHER (specify):
			[ ] (6) CYANIDE	[ ] (6) OTHER (specify):	
			[ ] (7) PHENOLS		
			[ ] (8) HALOGENS		
			[ ] (9) PCB		
			[X] (10) METALS		
			[ ] (11) OTHER (specify)		

PUBLIC WATER DISTRIBUTION

RESIDENTS WITHIN THE STUDY AREA ARE SUPPLIED WITH DRINKING WATER BY THE CITY OF PHILADELPHIA WATER COMPANY (PHILADELPHIA COUNTY) SERVING 1.7 MILLION PEOPLE, THE PHILADELPHIA SUBURBAN WATER COMPANY (DELAWARE COUNTY) SERVING 833,997 PEOPLE AND THE BOROUGH OF PAULSBORO WATER COMPANY (NEW JERSEY) SERVING 6,900 PEOPLE.

SCALE 1:24 000

1 ½ 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 .5 0 1 KILOMETER

CONTOUR INTERVAL 10 FEET
DATUM IS MEAN SEA LEVEL

PENNSYLVANIA
QUADRANGLE LOCATION

FOUR MILE RADIUS MAP

GULF OIL DARBY CREEK TANK FARM, DARBY, PA.

ORIGINAL (Red)