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R-51-12-2-20

# FINAL
# LEVEL 3 SITE INSPECTION PRIORITIZATION

# PHILLIPS LANDFILL

EPA WORK ASSIGNMENT NO. 37-38-3JZZ
PROJECT NO. 3738-06
EPA DSN PA-0076
FACILITY ID NO. PAD980706964

ARCS III PROGRAM
EPA CONTRACT NO. 68-W8-0037

JANUARY 1993

HALLIBURTON NUS
*Environmental Corporation*

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EPA WORK ASSIGNMENT NO. 37-38-3JZZ
PROJECT NO. 3738-06
EPA DSN PA-0067
FACILITY ID NO. PAD980706964

HALLIBURTON NUS CORPORATION
ARCS III PROGRAM
EPA CONTRACT NO. 68-W8-0037

FOR THE
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

JANUARY 15, 1993

US EPA, Region III
Reviewed and Approved

FEB 25 1993
by Kevin J. Wood
Site Assessment Section

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# SECTION 1.0

# 1.0 INTRODUCTION

## 1.1 AUTHORIZATION

HALLIBURTON NUS Corporation performed this work under EPA Contract No. 68-W8-0037. This specific report was prepared in accordance with ARCS III Work Assignment No. 37-38-3JZZ for the Phillips Landfill Site, located in Stowe and Kennedy Township, Allegheny County, Pennsylvania.

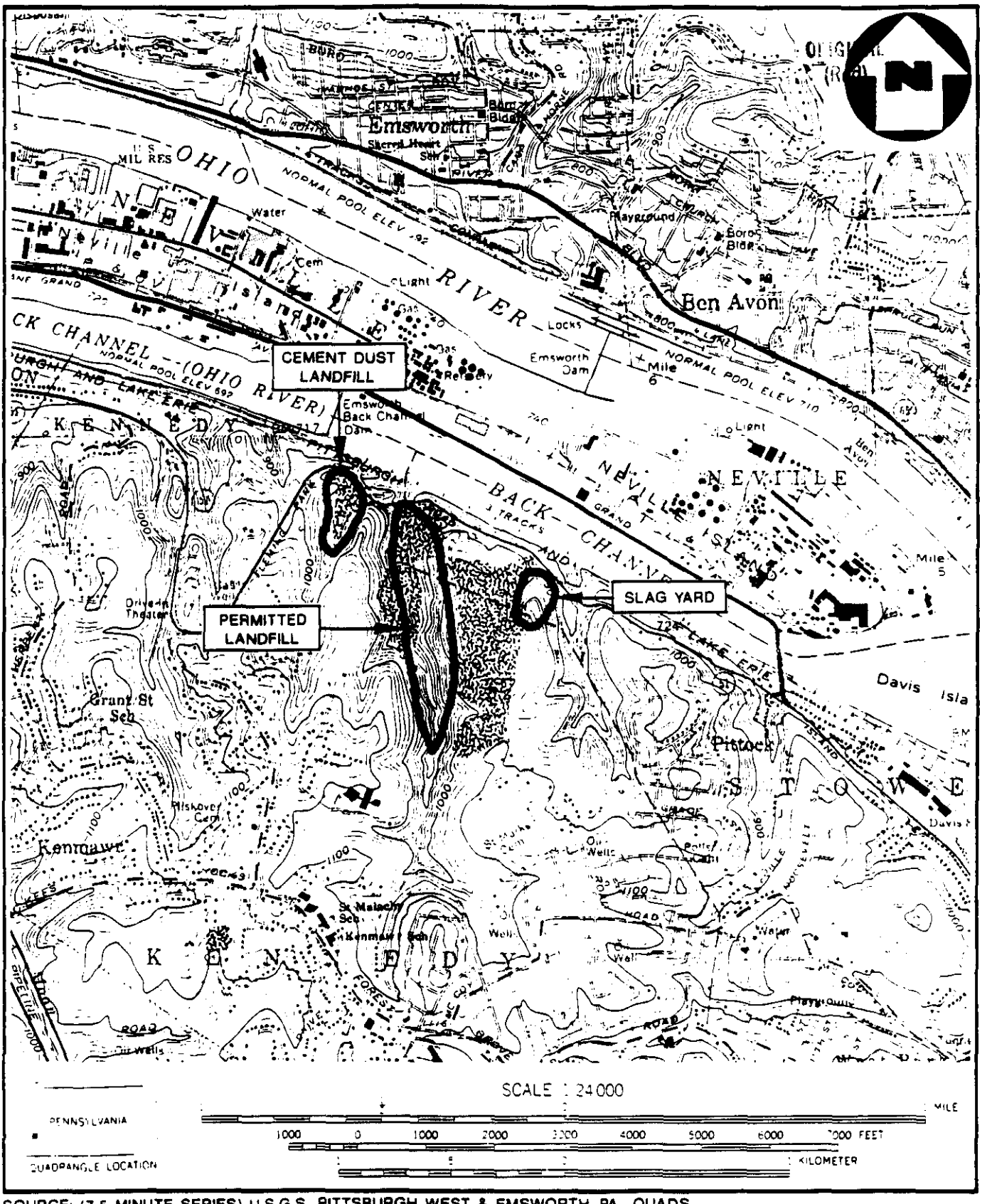
## 1.2 SCOPE OF WORK

HALLIBURTON NUS ARCS III was tasked to conduct a Level 3 site inspection prioritization of the subject site.

## 1.3 SUMMARY

The Phillips Landfill Site is located in Stowe and Kennedy Townships, Allegheny County, Pennsylvania (see Figure 1.1, page 1-2). The site comprises three areas of concern (see Figure 1.2, page 1-3). The permitted landfill, consisting of about 40 acres and reportedly 70 to 100 feet deep, is a closed solid waste landfill that formerly received demolition debris, foundry sand, and municipal garbage. The cement dust landfill, consisting of about 22 acres and of unknown depth, is a closed landfill that formerly received cement kiln dust and some other materials, including foundry sand. The slag yard, consisting of about three acres and reportedly about 50 feet deep, is an area filled with slag that is actively used for the storage (for later sale) of slag, recycled concrete, gravel, soil, and similar materials.[1,2,3]

The permitted landfill site is owned by Phillips Landfill and Slag, Incorporated; Jacob Phillips, Jr. is the principal and president. The other sites are owned by Jacob Phillips (the father of Jacob Phillips, Jr.). The permitted landfill operated from 1969 or 1970 until 1990.[3,4]




SOURCE: (7.5 MINUTE SERIES) U.S.G.S. PITTSBURGH WEST & EMSWORTH, PA., QUADS.

FIGURE:

SITE LOCATION MAP

PHILLIPS LANDFILL AND SLAG, INC.

(SCALE 1:24000)

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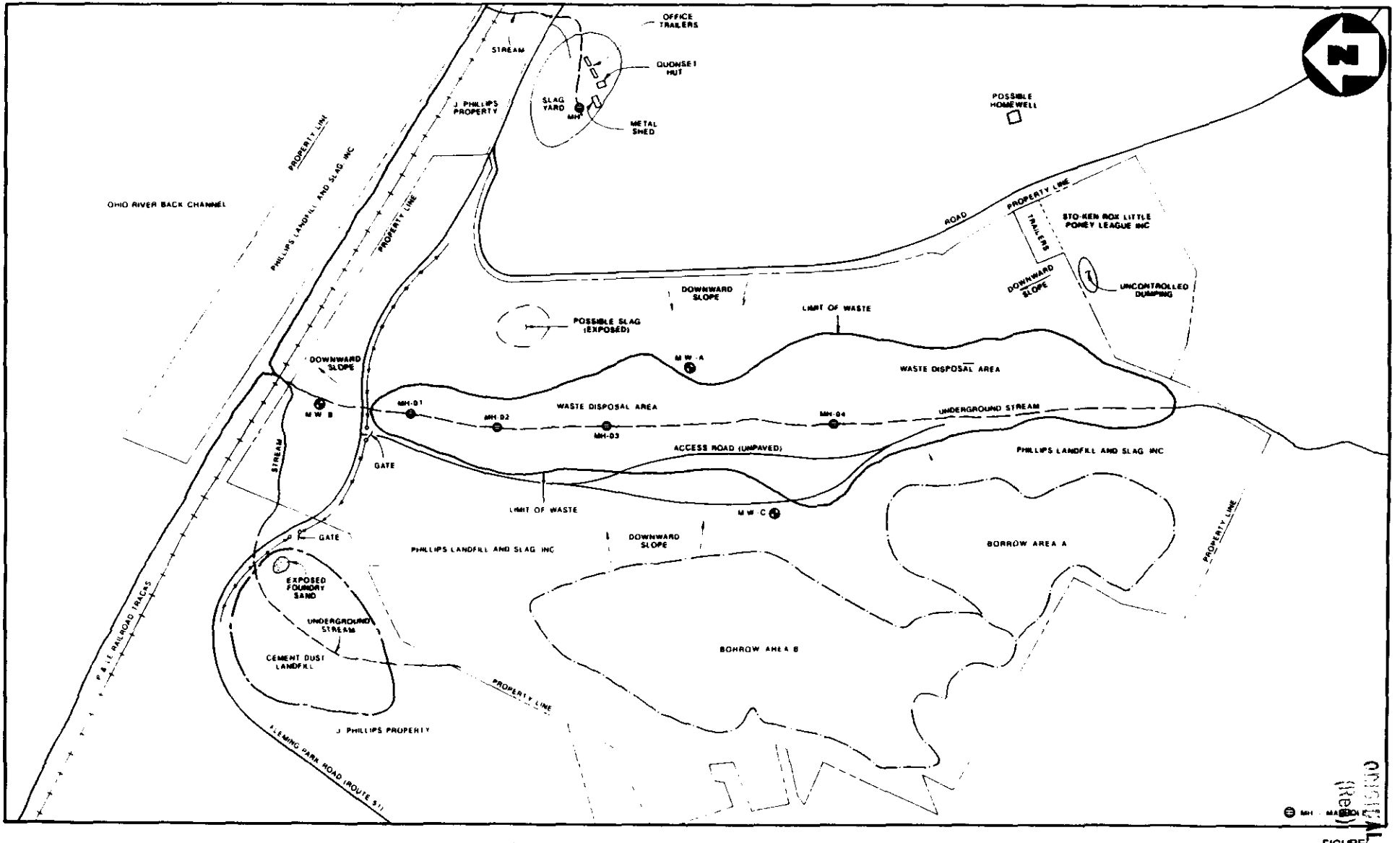


FIGURE

SITE SKETCH

PHILLIPS LANDFILL AND SLAG, INC.

(NO SCALE)

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In 1981, the Ecology and Environment (E&E) Region III Field Investigation Team (FIT 3) conducted a site inspection on behalf of EPA, sampling the three monitoring wells and the underdrain at the permitted landfill. Analysis revealed apparent contamination of groundwater with pentachlorophenol (PCP) (found in all three monitoring wells) and bis(2-ethylhexyl) phthalate (DEHP) (found in one monitoring well) and contamination of surface water with manganese, zinc, and boron. (It cannot be determined from the E&E FIT 3 report whether the downstream surface water sample was taken downstream from the confluence of the permitted landfill and cement dust landfill underdrains; therefore, it is unknown which area is the source of contamination. It has also been reported that contamination may originate from overflows at a sewage pumping station upstream from the cement dust landfill.)[5,6]

On June 23, 1992, HALLIBURTON NUS ARCS III conducted a non-sampling site reconnaissance at the subject site. At that time, one of the three monitoring wells (MW-A) at the permitted landfill (reportedly an upgradient well) was found to contain an atmosphere exceeding 100 percent of the lower explosive limit (LEL). Because photoionization detector readings in the well were at background levels, it is believed that methane was present in the well. There are numerous oil and gas wells within the site area; it could not be determined whether the suspected methane was due to the presence of natural gas or to the decomposition of organic material in the landfill.[2,3]

On August 18 and 19, 1992, HALLIBURTON NUS conducted a site inspection prioritization sampling at the site. Analysis revealed contamination of groundwater with cyanide and manganese, of surface water with cyanide, arsenic, manganese, and selenium, and of surface water sediments with cyanide, polycyclic aromatic hydrocarbons (PAHs), and traces of chlorinated pesticides. Lead and mercury were also detected in one downstream sediment sample (SD-2, the slag yard underdrain); however, an upstream sediment sample from the same stream was not available (the stream was below grade in a manhole and was inaccessible for sediment sampling). Wastes on site were found to contain cyanide, PAHs, arsenic, barium, chromium, cobalt, copper, lead, manganese, mercury, selenium, vanadium, and zinc. Monitoring well MW-A continued to exhibit combustible gas readings greater than 100 percent of LEL and therefore could not be sampled safely.[7]

The Stok-Ken-Rox baseball field, adjacent to the Phillips Landfill and Slag, Incorporated property and southeast of the permitted landfill, is a possible off-site source of contamination. It was investigated on various occasions by E&E FIT 3, PA DER, and the Allegheny County Health Department for uncontrolled dumping. Among the wastes found were drums and a tar-like material. The HALLIBURTON NUS reconnaissance revealed that the northern edge of the ball field is an active, uncontrolled dump site; drums and demolition debris were observed to have been dumped there.[8]

The major concern at the site is surface water contamination. Each area of concern is underlain by a stream or underdrain. Those under the permitted landfill and the slag yard discharge directly to the Back Channel of the Ohio River; the cement dust landfill underdrain discharges to the permitted landfill underdrain downstream from the permitted landfill. All streams are mapped as perennial on the topographic map, and all are protected by PA DER for warm-water fishes. The Back Channel of the Ohio River is known to be a significant recreational fishery, and there is a drinking water intake for Robinson Township Water Authority (RTWA) about 2.1 miles downstream from the site. This intake supplies an estimated 8,453 people.[1,9,10,11,12]

Approximately 413 home wells are within the study area; the nearest home well is about 1.9 miles away and is believed to be upgradient from the site. The nearest public supply wells are about 3.4 miles away. These wells supply the Coraopolis Borough Water Works (CBWW), providing potable water for about 8,627 people.[1,13]

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# SECTION 2.0

# 2.0 ENVIRONMENTAL SETTING

## 2.1 WATER SUPPLY

(b) (9)(b) (9)

The Neville Township Municipal System (NT) serves about 1,200 people on Neville Island. NT purchases its water from WVMA.[14,16,18]

The Aleppo Township Authority (ATA) serves about 1,065 people. ATA purchases its water from WVMA.[14,16,18]

Glenfield Borough (GB) serves 230 people. GB purchases its water from ATA.[16,18]

RTWA serves 3,500 connections. RTWA's sole source of water is a surface intake on (b) (9)(b) (9) (b) (9)(b) (9)(b) (9)(b) (9)(b) (9)(b) (9)(b) (9)(b) (9) RTWA maintains emergency interconnections with the Pennsylvania - American Water Company (PAWC), the borough of Coraopolis, and Moon Township. The Moon Township interconnection is used about once per month; the others are seldom used.[12,16,19]

The Moon Township Municipal Authority (MTMA) serves 5,600 connections. MTMA obtains its water supply from groundwater wells located outside the four-mile-radius study area.[16,18]

CBWW serves 8,500 people. CBWW obtains its water supply from eight wells located (b) (9)(b) (9) (b) (9)(b) (9)(b) (9)(b) (9)(b) (9)(b) (9)(b) (9) The wells are about (b) (9)(b) (9)(b) (9) (b) (9)(b) (9) (b) (9)(b) (9)(b) (9)(b) (9)[16]

PAWC serves an estimated 750,000 people, only a very small percentage of which resides within the study area. PAWC obtains its supply from surface intakes on the Monongahela River, located upstream of the site and outside the study area.[16,18,20]

The city of Pittsburgh Water Authority (CP) supplies water to 424,000 people, only a small percentage of which resides within the study area. CP obtains its water from a surface intake on the Allegheny River, located upstream of the site and outside the study area.[18]

Distribution of home wells is as follows:[1,21]

| Distance from Site (miles) | Allegheny County (2.41 Persons per House) | |
|---|---|---|
| | Houses | Persons |
| 0 to 0.25 | 0 | 0 |
| 0.25 to 0.5 | 0 | 0 |
| 0.5 to 1 | 0 | 0 |
| 1 to 2 | 2 | 5 |
| 2 to 3 | 67 | 161 |
| 3 to 4 | 344 | 829 |
| Totals | 413 | 995 |

## 2.2 SURFACE WATERS

The major concern at the site is surface water contamination. Each area of concern is underlain by a stream or underdrain; those under the permitted landfill and the cement dust landfill meet before discharging to the Back Channel of the Ohio River; the slag yard underdrain discharges directly to the Back Channel of the Ohio River. This stream system provides a potential pathway for contamination.[1,2,3]

All streams are mapped as perennial on the topographic map, and all are protected by PA DER for warm-water fishes. The Back Channel of the Ohio River is reported to be a significant recreational fishery; there is a drinking water intake for RTWA (b) (9)(b) (9)(b) (9)(b) (9)(b) (9)(b) (9)(b) (9) This intake supplies an estimated 8,435 people.[1,9,10,11,12]

There is 0.8 mile of wetland along the surface water migration pathway.[22]

## 2.3 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.

### 2.3.1 Geology

The Phillips Landfill Site is situated in the Pittsburgh Plateaus Section of the Appalachian Plateaus Physiographic Province. The site lies on the southeastern limb of the Brandy's Bend syncline. Bedrock beneath the site is expected to dip to the northwest at a low rate. The site is underlain by the lithified sedimentary rocks of the Conemaugh Group and the Allegheny Group. Thick deposits of unconsolidated alluvium underlie the Ohio River Valley and lower land elevations but do not underlie the site.[23,24,25]

The Conemaugh Group consists primarily of sandstone and shale, with lesser amounts of limestone and coal. Test borings indicate that the lithology beneath the site is dominantly shale. Joints are poorly to moderately well formed. The thickness of the Conemaugh beneath the site is approximately 200 feet. The underlying Allegheny Group is composed of sandstone and shale, discontinuous limestone, and some coal. Joint formation is variable and dependent on lithology. The Allegheny Group is about 300 feet thick.[23,24,25]

### 2.3.2 Soils

Five different soil series are present beneath the site. These soils and their hydrologic soil group are as follows:[25,26]

| Series | Soil Group |
|---|---|
| Gilpin - Upshur | C - D |
| Culleoka | B |
| Dormont | C |
| Gilpin - Weikart - Culleoka | C - C/D - B |
| Guernsey - Vandergrift | C - C |

### 2.3.3 Groundwater

The Conemaugh Group is a generally good aquifer that will usually yield small to moderate supplies of water; the sandstones form the best aquifer. Yields from the sandstones range from four to 400 gallons per minute (gpm). The shales and limestones yield smaller amounts of water, but supplies adequate for domestic use can usually be obtained. The Allegheny Group is not extensively tapped in the area due to its depth. The unconsolidated alluvium forms the major local aquifer that supplies all the public supply wells in the immediate area; yields of 500 to 1,000 gpm are not uncommon.[23,24,25]

## 2.4 CLIMATE AND METEOROLOGY

According to climatological data obtained for the city of Burgettstown, Pennsylvania, 17 miles west-southwest of the site, based on the period from 1951 to 1980, the following is offered. The average annual temperature is 48°F. The coldest month is January, with a mean temperature of 24.8°F; the warmest month is July, with a mean temperature of 69.3°F. The average annual precipitation is 40.19 inches. The month of highest average precipitation is July, with 4.34 inches; the lowest average is in February, with 2.50 inches. A one-year, 24-hour rainfall will produce 2.3 inches of rain. A two-year, 24-hour rainfall will produce 2.6 inches of rain. The mean annual lake evaporation for the area is 28.5 inches. The net moisture gain is 11.7 inches.[27,28,29,30]

## 2.5 POPULATION DISTRIBUTION

The site is in Allegheny County, Pennsylvania. The nearest residences are about 900 feet east-southeast of the permitted landfill. Approximately 163 persons reside within an 0.25-mile radius of the site; approximately 1,163 persons reside between 0.25 and 0.5 mile from the site; approximately 7,157 persons reside between 0.5 and one mile from the site; approximately 31,621 persons reside between one and two miles from the site; approximately 39,250 persons reside between two and three miles from the site; approximately 54,697 persons reside between three and four miles from the site; approximately 134,051 persons reside within a four-mile radius of the site. [These figures were estimated from the topographic map using a house count (where each house is multiplied by 2.41 persons per house in Allegheny County) or from census data and relative areas where individual houses are not shown on the topographic map.][1,21]

## 2.6 CRITICAL ENVIRONMENTS

All streams within the surface water migration pathway are protected by PA DER for warm-water fishes. There is 0.8 mile of wetland along the surface water migration pathway. Distribution of wetland area in the study area is as follows:[9,22]

| Distance from Site (miles) | Wetland Area (acres) |
|---|---|
| 0 to 0.25 | 0 |
| 0.25 to 0.5 | 1 |
| 0.5 to 1 | 9 |
| 1 to 2 | 9 |
| 2 to 3 | 31 |
| 3 to 4 | 20 |
| Total | 70 |

No habitats of endangered or threatened species or other sensitive environments are known to exist within the study area.

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# SECTION 3.0

# 3.0 FIELD TRIP REPORT

## 3.1 SUMMARY

On August 18 and 19, 1992, HALLIBURTON NUS ARCS III staff members [redacted] conducted a site inspection prioritization sampling visit at Phillips Landfill in Stowe and Kennedy Townships, Allegheny County, Pennsylvania. The weather was sunny and cloudy, with winds light and variable. Temperatures ranged from approximately 70°F to 85°F. Photographs were taken on site (see Figure 3.2, page 3-8).

A total of 11 low-concentration aqueous samples, four filtered low-concentration aqueous samples, eight low-concentration solid samples, and three low- to medium-concentration solid (waste) samples, including blanks and duplicates, were obtained during the inspection (see Figure 3.1, page 3-4). Split samples were obtained for certain samples by consultants for the owner, Phillips Landfill and Slag, Incorporated.

A pre-sampling reconnaissance was conducted at the site on June 23, 1992.

## 3.2 PERSONS CONTACTED

### 3.2.1 Prior to Field Trip

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### 3.2.2 At the Site

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### 3.2.3 Water Supply Well Information

No off-site wells were sampled during the site inspection prioritization.

Project ~~TDD NUMBER~~ 3738.0604
EPA NUMBER PA-0076

# SAMPLE LOG

SITE NAME Phillips L/F

| TRAFFIC REPORTS Organic | Inorganic | High Hazard | SAMPLE IDENTIFIER | PHASE | SAMPLE DESCRIPTION | SAMPLE LOCATION | TARGET USE | pH | FIELD MEASUREMENTS |
|---|---|---|---|---|---|---|---|---|---|
| CGG70 | MCHG01 | | MW-B | Aq | foamy, brown, cloudy, odorless | north (downhill) from main L/F | none | 7.31 | — |
| CGG71 | MCHG02 | | MW-D | Aq | dup. MW-B | " | none | 7.19 | — |
| CGG82 | MCHG13 | | MW-C | Aq | clear, colorless, odorless w/ insects | W of main L/F | none | 7.18 | — |
| — | MCHG23 | | MW-BF | AqF | MW-B filtered sample | same as MW-B | none | — | — |
| — | MCHG24 | | MW-DF | AqF | dup. MW-BF | " | none | — | — |
| — | MCHG25 | | MW-CF | AqF | MW-C filtered sample | same as MW-C | none | — | — |
| CGG84 | MCHG16 | | SW-1 | Aq | clear, odorless, some scum sediment | slag yard underdrain upstream (downaccess pipe) | downstream fishery, drinking water, recreation | 7.14 | — |
| CGG85 | MCHG17 | | SW-2 | Aq | clear, odorless, foam | slag yard underdrain downstream ~75' S of Ohio R. Bank Ch. | " | 7.87 | — |
| CGG75 | MCHG06 | | SW-3 | Aq | clear colorless, odorless | main L/F underdrain upstream | " | 7.73 | — |
| CGG74 | MCHG05 | | SW-4 | Aq | clear, colorless, odorless | cement dust pile underdrain upstream | " | 8.11 | — |

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Project ~~TDD NUMBER~~ 3738.0604
EPA NUMBER PA-0076

# SAMPLE LOG

SITE NAME Phillips L/F

| TRAFFIC REPORTS Organic | Inorganic | High Hazard | SAMPLE IDENTIFIER | PHASE | SAMPLE DESCRIPTION | SAMPLE LOCATION | TARGET USE | pH | FIELD MEASUREMENTS |
|---|---|---|---|---|---|---|---|---|---|
| CGG76 | MCHG07 | | SW-5 | Aq | tan-orange, suds | main L/F/cement dust underdrain downstream ~50'S of Ohio Blackch | downstream fishery, drinking water, recreation | 8.60 | — |
| CGG77 | MCHG08 | | SW-6 | Aq | dup SW-5 | " | " | 8.67 | — |
| CGG83 | MCHG14 | | Aq Blk. | Aq | field blank | — | none | — | — |
| — | MCHG15 | | Filt Blk. | Aq F | field filtered blank | — | none | — | — |
| CGG91 | — | | Trip Blk. for solid samples | Aq | VOA blank | — | none | — | — |
| CGG86 | MCHG18 | | SD-2 | Sol | dark brown, odorless sandy, silty clay w/ coal fragments | Same as SW-2 | downstream fishery, drinking water, recreation | — | — |
| CGG87 | MCHG19 | | SD-3 | Sol | brown, sandy silt w/ pebbles | Same as SW-3 | " | — | — |
| CGG78 | MCHG09 | | SD-4 | Sol | brown w/ small pebbles | same as SW-4 | " | — | — |
| CGG79 | MCHG10 | | SD-5 | Sol | tan-brown-red gravel w/ fine sediment | same as SW-5 + SW-6 | " | — | — |
| CGG80 | MCHG11 | | SD-6 | Sol | dup. SD-5 | " | " | — | — |

Project ~~TDD NUMBER~~ 3738.0604

EPA NUMBER PA-0076

# SAMPLE LOG

SITE NAME Phillips L/F

| TRAFFIC REPORTS Organic | Inorganic | High Hazard | SAMPLE IDENTIFIER | PHASE | SAMPLE DESCRIPTION | SAMPLE LOCATION | TARGET USE | pH | FIELD MEASUREMENTS |
|---|---|---|---|---|---|---|---|---|---|
| CGG81 | MCHG12 | | W-1 | Sol | tan, granular; (Slag w/ other debris) | SW edge of slag yard | bulk material sales/storage | — | — |
| CGG72 | MCHG03 | | W-2 | Sol | gray, some org. mat'l. (cement dust) | cement dust pile. | waste pile | — | — |
| CGG73 | MCHG04 | | W-3 | Sol | fine, black (Foundry sand) | NE of cement dust pile | waste pile | — | — |
| CGG88 | MCHG20 | | S-1 | Sol | brown w/pebbles, silt, sand | W/downhill from Sto-Ken Rox; SW of main L/F | closed L/F buffer | — | — |
| CGG89 | MCHG21 | | S-2 | Sol | light brown, clayey w/silt, stones | SW/downhill from Sto-Ken Rox; SW of main L/F | closed L/F buffer | — | — |
| CGG90 | MCHG22 | | S-3 | Sol | dark brown silty clay w/org. mat'l. | N of site; 50' E of Rt. 51 | background soil | — | — |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

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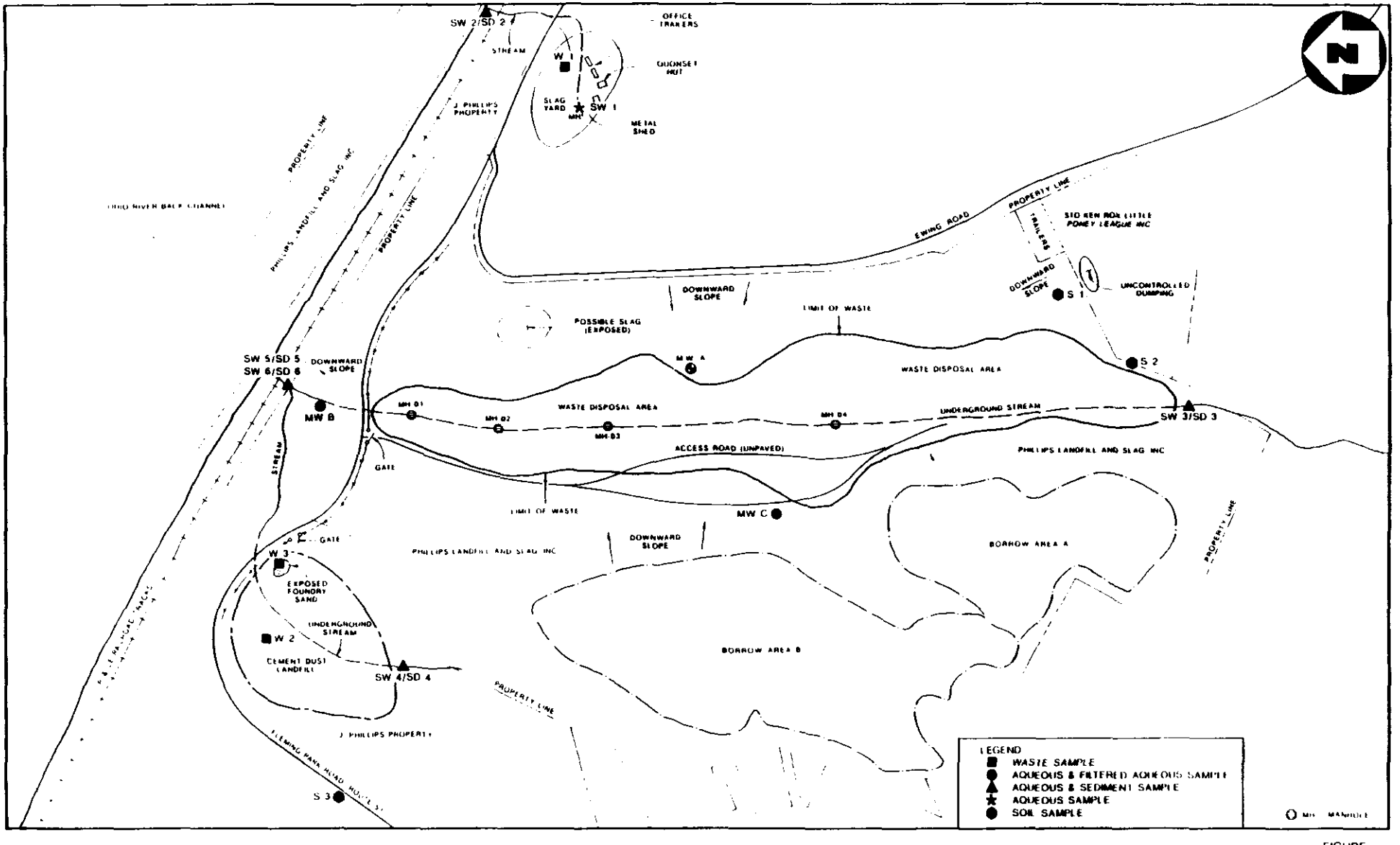


SAMPLE LOCATION MAP

PHILLIPS LANDFILL AND SLAG, INC.

(NO SCALE)

FIGURE

HALLIBURTON NUS
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## 3.4 SITE OBSERVATIONS

- HNU photoionization detectors were used. A positive reading was obtained when monitoring well MW-A was opened (2.2 to 2.4 ppm above background using an 11.7 eV lamp). Using an MSA 261 combustible gas/oxygen indicator (CGI), a reading of greater than 100 percent LEL was obtained. The well was allowed to ventilate for about 21 hours; the CGI reading did not vary. No other readings above background were recorded on site.

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

- The site is an inactive solid waste landfill.

- The site property consists of approximately 166 acres. The site comprises three areas of concern. The permitted landfill consists of about 40 acres. The cement dust area consists of about 22 acres. The slag yard consists of about three acres and is an area filled with slag that is actively used for the storage (for later sale) of slag, recycled concrete, gravel, soil, and similar materials.

- The permitted landfill had a chain-link fence along the roads on the northern and eastern sides, with a gate that was locked on each of the two sides. Other possible access routes into the landfill were blocked with mounds of soil, as was the access route to the cement dust area.

- A large pile of light gray powder (reportedly baghouse dust from cement kilns) was observed at the cement dust area. There was also a small pile of black sand (reportedly foundry sand) at this area.

- A fine, light brown sediment was observed in the cement dust area underdrain just upstream from its confluence with the permitted landfill underdrain.

- There were two buildings and two office trailers at the slag yard; no other buildings were on site.

- The sampling location for SW-1 and proposed SD-1 (slag yard underdrain upstream samples) was below grade in a manhole. A vertical five-foot-diameter concrete pipe topped with wire mesh projected upward from a hollow in the ground surface. The water level was 55.5 feet below the top of the pipe.

- Small amounts of municipal-type waste and demolition debris were observed mixed with the cover soil on the permitted landfill.

- Certain locations (notably MW-A, MW-B, and the downstream end of the slag yard underdrain) exhibited an odor similar to decaying organic material mixed with a petroleum-like odor.

- There were three active monitoring wells on site: two along the perimeter of the permitted landfill and one across the road, north of the permitted landfill. The wells had inner casings of four-inch-diameter polyvinyl chloride (PVC). Two wells were sounded, and the following information was obtained:

MW-A

Not sounded or purged due to explosive atmosphere.

MW-B

- Depth from top of casing (TOC) to water ..... 3.8 feet
- Depth from TOC to bottom of well ..... 16.5 feet
- Casing stickup ..... 0.7 feet
- Depth from ground surface to water ..... 3.1 feet
- Depth from ground surface to bottom of well ..... 15.8 feet
- Depth of water in well ..... 12.7 feet
- Volume of water in well (0.653 gallon per foot for a four-inch well) .... 8.29 gallons
- Minimum volume required to be purged (three times volume) ..... 24.88 gallons
- Actual volume purged (approximate) ..... 25.0 gallons

MW-C

- Depth from TOC to water ..... 24.0 feet
- Depth from TOC to bottom of well ..... 45.1 feet
- Casing stickup ..... 2.5 feet
- Depth from ground surface to water ..... 21.5 feet
- Depth from ground surface to bottom of well ..... 42.6 feet
- Depth of water in well ..... 21.1 feet
- Volume of water in well (0.653 gallon per foot for a four-inch well) .... 13.77 gallons
- Minimum volume required to be purged (three times volume) ..... 41.31 gallons
- Actual volume purged (approximate) ..... 41.31 gallons

- The site slopes generally downward from south to north, with a difference in elevation of approximately 100 feet between the high and low ends. Each area of concern is a filled area of a stream valley; the streams draining the permitted landfill and the cement dust area meet before flowing into the Ohio River Back Channel. Site surface drainage would be expected to flow northward into the Ohio River Back Channel.

- A railroad separates the Phillips property from the Ohio River Back Channel. The streams flow through culverts under the railroad.

- The site is bordered primarily by woodlands. The Sto-Ken-Rox baseball field and residential areas border the site to the southeast and south.

- Site roadways were unpaved. The slag yard and the cement dust area were largely unvegetated, with dead trees in the cement dust area. The permitted landfill is somewhat vegetated, with herbaceous plants on the landfill itself and brush and trees surrounding it.

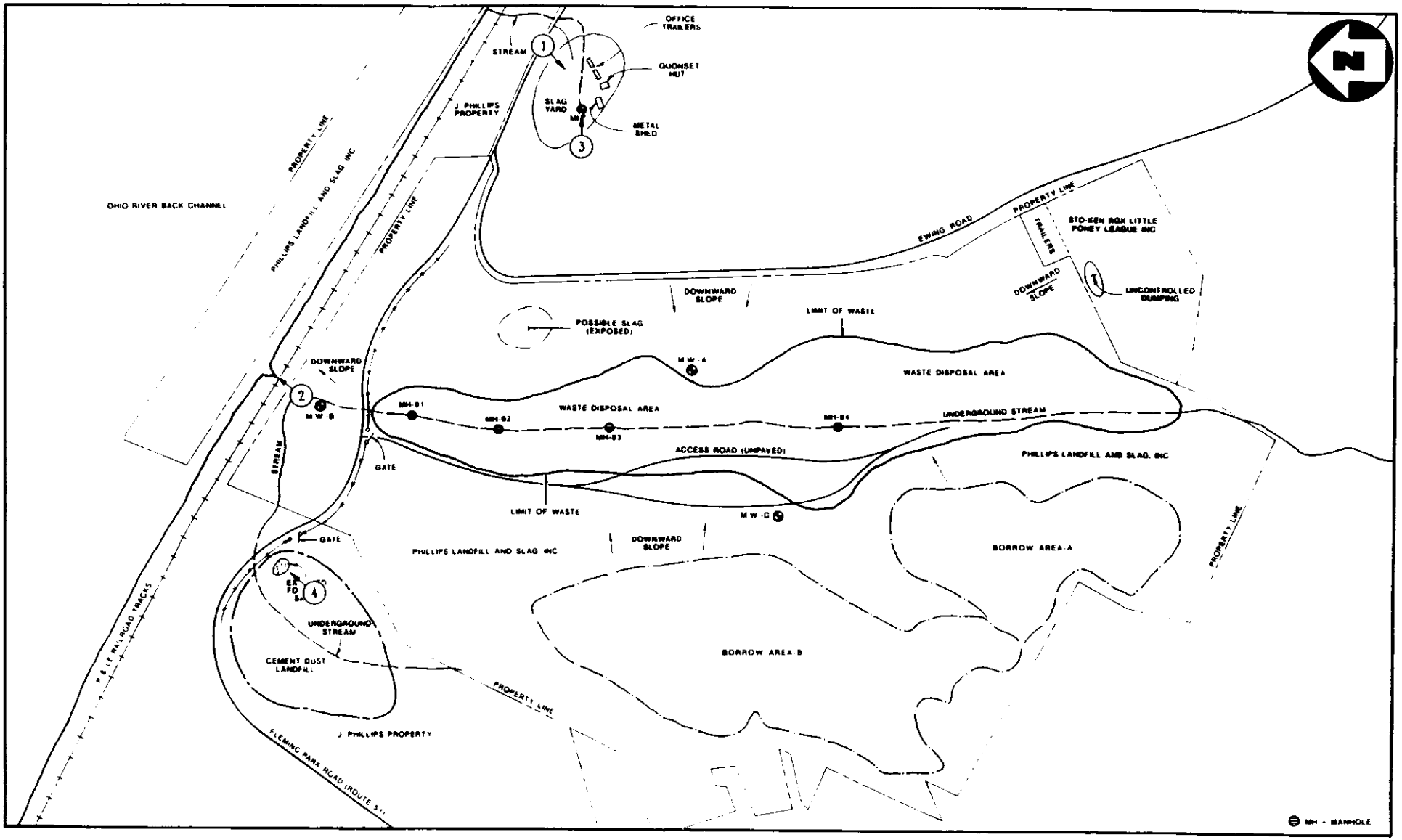


PHOTO LOCATION MAP
PHILLIPS LANDFILL AND SLAG, INC

(NO SCALE)

FIGURE

HALLIBURTON NUS
Environmental Corporation

EPA REGION III
SUPERFUND DOCUMENT MANAGEMENT SYSTEM

DOC ID # 439400
PAGE # _____

**IMAGERY COVER SHEET**
**UNSCANNABLE ITEM**

Contact the CERCLA Records Center to view this document.

SITE NAME Phillips Landfill

OPERABLE UNIT 00

SECTION/BOX/FOLDER 1C BOX 1 1.003

REPORT OR DOCUMENT TITLE Final level 3 site inspection prioritization.

DATE OF DOCUMENT 01-01-93

DESCRIPTION OF IMAGERY Site photos.

NUMBER AND TYPE OF IMAGERY ITEM(S) 4 photographs

ORIGINAL
(Red)

# SECTION 4.0

# 4.0 REFERENCES

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ORIGINAL
(Red)

# SECTION 5.0

# 5.0 LABORATORY DATA

## 5.1 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 or detection 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 or detection limit may be inaccurate or imprecise.

UL = Not detected, quantitation or detection limit is probably higher.

OTHER CODES

Q = No analytical result.

SELECTED SAMPLE ORDER

SITE NAME: PHILLIPS LANDFILL
PROJECT NO: 3738-06
LAB NAMES: Org: IOWA Inorg: SKINER SAS: PRECIS

SAMPLING DATE(s): 8/19/92
CASE NUMBER:18622

STATE/COUNTY CODE: PA/
EPA NUMBER: PA-76

| SAMPLE NUMBER: | CGG84 | CGG85 | CGG75 | CGG76 | CGG77 | CGG70 | CGG71 | CGG82 | CGG86 |
|---|---|---|---|---|---|---|---|---|---|
| SAMPLE ID: | SW-1 | SW-2 | SW-3 | SW-5 | SW-6 | MW-B | MW-D | MW-C | SD-2 |
| LOCATION: | SY UD US DS rec,drink from manhole | SY UD DS DS drink,rec foam,odrls | LF UD US DS rec,drink clr,odrls | LF/CDP UD DS rec,dr DS tan-or, suds | dup SW-5 | PVC 20' to bottm downhill | dup MW-B | PVC 45.1' deep W of LF clr,odrls | SY UD DS match SW-2 dk sdy clay |
| PH: | 7.1 | 7.9 | 7.9 | 8.6 | 8.7 | 7.3 | 7.2 | 7.2 | 7.8 |
| FIELD MEASUREMENTS: | | | | | | | | | |
| PERCENT SOLIDS: | | | | | | | | | 68.0% |

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

| DILUTION FACTOR: | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.5 |
|---|---|---|---|---|---|---|---|---|---|

| DET. LIMIT CRQL (*=IDL) | SAMPLE NUMBER: / UNITS: | CGG84 ug/l | CGG85 ug/l | CGG75 ug/l | CGG76 ug/l | CGG77 ug/l | CGG70 ug/l | CGG71 ug/l | CGG82 ug/l | CGG86 ug/kg |
|---|---|---|---|---|---|---|---|---|---|---|
| 10.00 | methylene chloride | | | 2.00 B | | | | | | 3.00 B |
| 10.00 | acetone | | | | 10.00 B | 10.00 B | | | | 33.00 |
| 10.00 | 2-butanone | | | | | | | | | 4.00 J |
| 10.00 | 2-hexanone | | | | | | | | | |
| 10.00 | styrene | | | | | | | | | |
| 10.00 | total xylenes | | | | | | | 1.00 J | | |

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

| DILUTION FACTOR: | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 48.0 |
|---|---|---|---|---|---|---|---|---|---|

| DET. LIMIT CRQL (*=IDL) | SAMPLE NUMBER: / UNITS: | CGG84 ug/l | CGG85 ug/l | CGG75 ug/l | CGG76 ug/l | CGG77 ug/l | CGG70 ug/l | CGG71 ug/l | CGG82 ug/l | CGG86 ug/kg |
|---|---|---|---|---|---|---|---|---|---|---|
| 10.00 | 1,3-dichlorobenzene | | | | | | | | | 51.00 J |
| 10.00 | 1,4-dichlorobenzene | 5.00 J | | | | | | | | 180.00 J |
| 10.00 | 2-methylphenol | 2.00 J | | | | | | | | |
| 10.00 | 4-methylphenol | 3.00 J | | | | | | | | |
| 10.00 | 2,4-dimethylphenol | 2.00 J | | | | | | | | |
| 10.00 | 2,4-dichlorophenol | 6.00 J | | | | | | | | |
| 10.00 | 1,2,4-trichlorobenzene | 6.00 J | | | | | | | | 760.00 |
| 10.00 | naphthalene | | | | | | | | | 300.00 J |
| 10.00 | 2-methylnaphthalene | | | | | | | | | 220.00 J |
| 10.00 | 2,4,6-trichlorophenol | 5.00 J | | | | | | | | |
| 25.00 | 2,4,5-trichlorophenol | 3.00 J | | | | | | | | |
| 10.00 | acenaphthylene | | | | | | | | | 240.00 J |
| 10.00 | acenaphthene | | | | | | | | | 250.00 J |
| 10.00 | dibenzofuran | | | | | | | | | 260.00 J |
| 10.00 | fluorene | | | | | | | | | 390.00 J |
| 10.00 | phenanthrene | | | | | | | | | 2100.00 |
| 10.00 | anthracene | | | | | | | | | 630.00 |
| 10.00 | di-n-butyl phthalate | | | | | | | | | 62.00 R |
| 10.00 | fluoranthene | | | | | | | | | 3500.00 |
| 10.00 | pyrene | | | | | | | | | 2800.00 |

Comments: **********

LFLF=permitted landfill; SY=slag yard; UUD=underdrain; CDP=cement dust pile;
ORBC=Ohio River Back Channel sample quant. limit = CRQL X Dil. Factor

SELECTED SAMPLE ORDER

SITE NAME: PHILLIPS LANDFILL
PROJECT NO: 3738-06
LAB NAMES: Org: IOWA Inorg: SKINER SAS: PRECIS

SAMPLING DATE(s): 8/19/92
CASE NUMBER:18622

STATE/COUNTY CODE: PA/
EPA NUMBER: PA-76

| SAMPLE NUMBER: | CGG84 | CGG85 | CGG75 | CGG76 | CGG77 | CGG70 | CGG71 | CGG82 | CGG86 |
|---|---|---|---|---|---|---|---|---|---|
| SAMPLE ID: | SW-1 | SW-2 | SW-3 | SW-5 | SW-6 | MW-B | MW-D | MW-C | SD-2 |
| LOCATION: | SY UD US DS rec,drink from manhole | SY UD DS DS drink,rec foam,odrls | LF UD US DS rec,drink clr,odrls | LF/CDP UD DS rec,dr DS tan-or, suds | dup SW-5 | PVC 20' to bottm downhill | dup MW-B | PVC 45.1' deep W of LF clr,odrls | SY UD DS match SW-2 dk sdy clay |
| PH: | 7.1 | 7.9 | 7.9 | 8.6 | 8.7 | 7.3 | 7.2 | 7.2 | 7.8 |
| FIELD MEASUREMENTS: | | | | | | | | | |
| PERCENT SOLIDS: | | | | | | | | | 68.0% |

TYPE OF DATA: ****** SEMIVOLATILES **********

| DILUTION FACTOR: | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 48.0 |
|---|---|---|---|---|---|---|---|---|---|

| DET. LIMIT CRQL (*=IDL) | SAMPLE NUMBER: UNITS: | CGG84 ug/l | CGG85 ug/l | CGG75 ug/l | CGG76 ug/l | CGG77 ug/l | CGG70 ug/l | CGG71 ug/l | CGG82 ug/l | CGG86 ug/kg |
|---|---|---|---|---|---|---|---|---|---|---|
| 10.00 | butylbenzyl phthalate | | | | | | | | | 330.00 J |
| 10.00 | carbazole | | | | | | | | | 340.00 J |
| 10.00 | benzo(a)anthracene | | | | | | | | | 2000.00 |
| 10.00 | chrysene | | | | | | | | | 1800.00 |
| 10.00 | bis(2-ethylhexyl) phthalate | | 2.00 B | | 1.00 B | 1.00 B | 1.00 B | 2.00 B | 0.80 B | 1200.00 |
| 10.00 | di-n-octyl phthalate | | | | | | | | | 130.00 J |
| 10.00 | benzo(b)fluoranthene | | | | | | | | | 2600.00 |
| 10.00 | benzo(k)fluoranthene | | | | | | | | | 1100.00 |
| 10.00 | benzo(a)pyrene | | | | | | | | | 1800.00 |
| 10.00 | indeno(1,2,3-cd)pyrene | | | | | | | | | 1000.00 |
| 10.00 | dibenz(a,h)anthracene | | | | | | | | | 230.00 J |
| 10.00 | benzo(g,h,i)perylene | | | | | | | | | 710.00 |

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

| DILUTION FACTOR: | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 48.0 |
|---|---|---|---|---|---|---|---|---|---|

| DET. LIMIT CRQL (*=IDL) | SAMPLE NUMBER: UNITS: | CGG84 ng/l | CGG85 ng/l | CGG75 ng/l | CGG76 ng/l | CGG77 ng/l | CGG70 ng/l | CGG71 ng/l | CGG82 ng/l | CGG86 ug/kg |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.05 | aldrin | | | | | 16.00 R | | | | 6.90 R |
| 0.05 | heptachlor epoxide | | | | | | | | | 2.50 R |
| 0.10 | dieldrin | 8.30 R | | | | | | | | |
| 0.10 | 4,4'-DDE | | | | | | | | | |
| 0.10 | endosulfan II | | 15.00 R | | | | | | | |
| 0.10 | 4,4'-DDD | | 31.00 R | | | | | | | 13.00 R |
| 0.10 | endosulfan sulfate | | | | | | | | | 1.50 R |
| 0.10 | 4,4'-DDT | | | | | | | | | 1.30 R |
| 0.50 | methoxychlor | | | | | | | | | |
| 0.05 | alpha chlordane | | | | | | | | | 8.80 R |
| 0.05 | gamma chlordane | | | | | | | | | 8.70 R |

Comments: **********

LFLF=permitted landfill; SY=slag yard; UUD=underdrain; CDP=cement dust pile;
ORBC=Ohio River Back Channel sample quant. limit = CRQL X Dil. Factor

SELECTED SAMPLE ORDER

SITE NAME: PHILLIPS LANDFILL
PROJECT NO: 3738-06
LAB NAMES: Org: IOWA Inorg: SKINER SAS: PRECIS

SAMPLING DATE(s): 8/19/92
CASE NUMBER: 18622

STATE/COUNTY CODE: PA/
EPA NUMBER: PA-76

Rcd

| SAMPLE NUMBER: | CGG87 | CGG78 | CGG88 | CGG89 | CGG90 | CGG83 | CGG91 |
|---|---|---|---|---|---|---|---|
| SAMPLE ID: | SD-3 | SD-4 | S-1 | S-2 | S-3 | AQ BLANK | TRIP BLANK |
| LOCATION: | LF UD US match SW-3 brn sd slt p | CDP UD US match SW-4 brn w/ pebls | W of Sto-Ken -Rox field some access peb sil sand | SW of Sto-Ke n-Rox field some access brn clay,sil | off-site background | aqueous blank | trip blank VOA only |
| PH: | 8.2 | 7.8 | 5.2 | 5.5 | 5.0 | 6.0 | |
| FIELD MEASUREMENTS: | | | | | | | |
| PERCENT SOLIDS: | 82.0% | 78.0% | 76.0% | 76.0% | 74.0% | | |

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

| DILUTION FACTOR: | 1.2 | 1.3 | 1.3 | 1.3 | 1.4 | 1.0 | 1.0 |
|---|---|---|---|---|---|---|---|

| DET. LIMIT CRQL (*=IDL) | SAMPLE NUMBER: / UNITS: | CGG87 ug/kg | CGG78 ug/kg | CGG88 ug/kg | CGG89 ug/kg | CGG90 ug/kg | CGG83 ug/l | CGG91 ug/l |
|---|---|---|---|---|---|---|---|---|
| 10.00 | methylene chloride | | 4.00 B | 3.00 B | 8.00 B | | | |
| 10.00 | acetone | | | | | | | |
| 10.00 | 2-butanone | | | | | | | |
| 10.00 | 2-hexanone | | 3.00 J | | | | | |
| 10.00 | styrene | | | 5.00 J | | | | |
| 10.00 | total xylenes | | | | | | | |

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

| DILUTION FACTOR: | 40.0 | 41.0 | 43.0 | 43.0 | 43.0 | 1.0 | 0.0 |
|---|---|---|---|---|---|---|---|

| DET. LIMIT CRQL (*=IDL) | SAMPLE NUMBER: / UNITS: | CGG87 ug/kg | CGG78 ug/kg | CGG88 ug/kg | CGG89 ug/kg | CGG90 ug/kg | CGG83 ug/l | CGG91 n/a |
|---|---|---|---|---|---|---|---|---|
| 10.00 | 1,3-dichlorobenzene | | | | | | | |
| 10.00 | 1,4-dichlorobenzene | | | | | | | |
| 10.00 | 2-methylphenol | | | | | | | |
| 10.00 | 4-methylphenol | | | | | | | |
| 10.00 | 2,4-dimethylphenol | | | | | | | |
| 10.00 | 2,4-dichlorophenol | | | | | | | |
| 10.00 | 1,2,4-trichlorobenzene | | | | | | | |
| 10.00 | naphthalene | | | 48.00 J | | | | |
| 10.00 | 2-methylnaphthalene | | | | | | | |
| 10.00 | 2,4,6-trichlorophenol | | | | | | | |
| 25.00 | 2,4,5-trichlorophenol | | | | | | | |
| 10.00 | acenaphthylene | | | | | | | |
| 10.00 | acenaphthene | | | | | | | |
| 10.00 | dibenzofuran | | | | | | | |
| 10.00 | fluorene | | | | | | | |
| 10.00 | phenanthrene | 44.00 J | | 210.00 J | 87.00 J | 140.00 J | | |
| 10.00 | anthracene | | | 35.00 J | | | | |
| 10.00 | di-n-butyl phthalate | 45.00 R | | | | | | |
| 10.00 | fluoranthene | 47.00 J | | 340.00 J | 190.00 J | 300.00 J | | |
| 10.00 | pyrene | 35.00 J | | 280.00 J | 140.00 J | 250.00 J | | |

Comments: **********

LFLF=permitted landfill; SY=slag yard; UUD=underdrain; CDP=cement dust pile;
ORBC=Ohio River Back Channel sample quant. limit = CRQL X Dil. Factor

SELECTED SAMPLE ORDER

SITE NAME: PHILLIPS LANDFILL
PROJECT NO: 3738-06
LAB NAMES: Org: IOWA Inorg: SKINER SAS: PRECIS

SAMPLING DATE(s): 8/19/92
CASE NUMBER:18622

STATE/COUNTY CODE: PA/
EPA NUMBER: PA-76

| SAMPLE NUMBER: | CGG87 | CGG78 | CGG88 | CGG89 | CGG90 | CGG83 | CGG91 |
|---|---|---|---|---|---|---|---|
| SAMPLE ID: | SD-3 | SD-4 | S-1 | S-2 | S-3 | AQ BLANK | TRIP BLANK |
| LOCATION: | LF UD US match SW-3 brn sd slt p | CDP UD US match SW-4 brn w/ pebls | W of Sto-Ken -Rox field some access peb sil sand | SW of Sto-Ke n-Rox field some access brn clay,sil | off-site background | aqueous blank | trip blank VOA only |
| PH: | 8.2 | 7.8 | 5.2 | 5.5 | 5.0 | 6.0 | |
| FIELD MEASUREMENTS: | | | | | | | |
| PERCENT SOLIDS: | 82.0% | 78.0% | 76.0% | 76.0% | 74.0% | | |

TYPE OF DATA: ****** SEMIVOLATILES **********

| DILUTION FACTOR: | 40.0 | 41.0 | 43.0 | 43.0 | 43.0 | 1.0 | |
|---|---|---|---|---|---|---|---|

| DET. LIMIT CRQL (*=IDL) | SAMPLE NUMBER: UNITS: | CGG87 ug/kg | CGG78 ug/kg | CGG88 ug/kg | CGG89 ug/kg | CGG90 ug/kg | CGG83 ug/l | CGG91 n/a |
|---|---|---|---|---|---|---|---|---|
| 10.00 | butylbenzyl phthalate | 41.00 J | | | | 43.00 | | |
| 10.00 | carbazole | | | | | | | |
| 10.00 | benzo(a)anthracene | | | 180.00 J | 97.00 J | 160.00 J | | |
| 10.00 | chrysene | | | 200.00 J | 120.00 J | 210.00 J | | |
| 10.00 | bis(2-ethylhexyl) phthalate | 94.00 B | | 72.00 B | 60.00 B | 83.00 B | | |
| 10.00 | di-n-octyl phthalate | | | | | | | |
| 10.00 | benzo(b)fluoranthene | 33.00 J | | 280.00 J | 170.00 J | 270.00 J | | |
| 10.00 | benzo(k)fluoranthene | | | 140.00 J | 78.00 J | 120.00 J | | |
| 10.00 | benzo(a)pyrene | | | 180.00 J | 96.00 J | 150.00 J | | |
| 10.00 | indeno(1,2,3-cd)pyrene | | | 150.00 J | | 130.00 J | | |
| 10.00 | dibenz(a,h)anthracene | | | | | 41.00 J | | |
| 10.00 | benzo(g,h,i)perylene | | | 110.00 J | 62.00 J | 100.00 J | | |

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

| DILUTION FACTOR: | 42.0 | 4.4 | 44.0 | 46.0 | 46.0 | 1.0 | 0.0 |
|---|---|---|---|---|---|---|---|

| DET. LIMIT CRQL (*=IDL) | SAMPLE NUMBER: UNITS: | CGG87 ug/kg | CGG78 ug/kg | CGG88 ug/kg | CGG89 ug/kg | CGG90 ug/kg | CGG83 ng/l | CGG91 n/a |
|---|---|---|---|---|---|---|---|---|
| 0.05 | aldrin | 0.60 R | | | | 1.00 R | | |
| 0.05 | heptachlor epoxide | 0.42 R | | 0.61 R | 0.63 R | 0.34 R | | |
| 0.10 | dieldrin | 1.30 R | | | | | | |
| 0.10 | 4,4'-DDE | | | 3.00 R | 2.10 R | 3.30 R | | |
| 0.10 | endosulfan II | | | | 0.79 R | | | |
| 0.10 | 4,4'-DDD | 0.73 R | | 1.20 R | | 2.10 R | | |
| 0.10 | endosulfan sulfate | | | | | | | |
| 0.10 | 4,4'-DDT | | | 1.30 R | 2.50 R | | | |
| 0.50 | methoxychlor | | 21.00 R | | | | | |
| 0.05 | alpha chlordane | 1.30 R | 0.46 R | | | | | |
| 0.05 | gamma chlordane | 1.40 R | | | | | | |

Comments: **********
LFLF=permitted landfill; SY=slag yard; UUD=underdrain; CDP=cement dust pile;
ORBC=Ohio River Back Channel sample quant. limit = CRQL X Dil. Factor

Original (Red)

SELECTED SAMPLE ORDER

SITE NAME: PHILLIPS LANDFILL
PROJECT NO: 3738-06
LAB NAMES: Org: IOWA Inorg: SKINER SAS: PRECIS

SAMPLING DATE(s): 8/19/92
CASE NUMBER:18622

STATE/COUNTY CODE: PA/
EPA NUMBER: PA-76

| SAMPLE NUMBER: | CGG81 | CGG72 | CGG73 | CGG79 | CGG80 |
|---|---|---|---|---|---|
| SAMPLE ID: | W-1 | W-2 | W-3 | SD-5 | SD-6 |
| LOCATION: | slag from SY SAS | cement dust CDP SAS | foundry sand NE of CDP SAS | LF/CDP UD DS org by SAS match SW-5 gravel&fines | dup SD-5 org by SAS |
| PH: | 8.0 | 8.1 | 7.9 | 8.4 | 8.3 |
| FIELD MEASUREMENTS: | | | | | |
| PERCENT SOLIDS: | 92.0% | 46.0% | 93.0% | 82.0% | 79.0% |
| TYPE OF DATA: ****** VOLATILES | ********** | | | | |
| DILUTION FACTOR: | 1.0 | 2.2 | 1.1 | 1.1 | 1.1 |

| DET. LIMIT CRQL (*=IDL) | SAMPLE NUMBER: / UNITS: | CGG81 ug/kg | CGG72 ug/kg | CGG73 ug/kg | CGG79 ug/kg | CGG80 ug/kg |
|---|---|---|---|---|---|---|
| 10.00 | methylene chloride | 11.00 B | 22.00 B | 14.00 B | 5.00 B | 5.00 B |
| 10.00 | acetone | 8.00 B | 8.00 B | 5.00 B | 4.00 B | |
| 10.00 | carbon disulfide | 1.00 J | | | | |
| 10.00 | toluene | 2.00 B | 4.00 B | | | |
| TYPE OF DATa: ****** SEMIVOLATILES | | ********** | | | | |
| DILUTION FACTOR: | | 37.0 | 140.0 | 69.0 | 36.0 | 39.0 |

| DET. LIMIT CRQL (*=IDL) | SAMPLE NUMBER: / UNITS: | CGG81 ug/kg | CGG72 ug/kg | CGG73 ug/kg | CGG79 ug/kg | CGG80 ug/kg |
|---|---|---|---|---|---|---|
| 10.00 | naphthalene | 550.00 | | | | |
| 10.00 | 2-methylnaphthalene | 52.00 J | | | | |
| 10.00 | acenaphthylene | | | | 100.00 J | |
| 10.00 | acenaphthene | 67.00 J | | | | |
| 10.00 | dibenzofuran | 55.00 J | | | | |
| 10.00 | fluorene | 100.00 J | | | | |
| 10.00 | phenanthrene | 850.00 | | 19.00 J | 190.00 J | |
| 10.00 | anthracene | 270.00 J | | | 84.00 J | |
| 10.00 | di-n-butyl phthalate | 2300.00 B | 130.00 B | 39.00 B | 110.00 B | 46.00 B |
| 10.00 | fluoranthene | 1300.00 | | | 720.00 J | 34.00 J |
| 10.00 | pyrene | 1300.00 | | | 790.00 J | 30.00 J |
| 10.00 | butylbenzyl phthalate | 610.00 | | | | |
| 10.00 | carbazole | 580.00 J | | | 43.00 J | |
| 10.00 | benzo(a)anthracene | 900.00 | | | 480.00 J | |
| 10.00 | chrysene | 650.00 J | | | | |
| 10.00 | bis(2-ethylhexyl) phthalate | 750.00 B | | | 1300.00 B | |
| 10.00 | di-n-octyl phthalate | | | | 39.00 B | |
| 10.00 | benzo(b)fluoranthene | 1400.00 | | | 600.00 J | 30.00 J |
| 10.00 | benzo(k)fluoranthene | 970.00 | | | 280.00 J | |
| 10.00 | benzo(a)pyrene | 780.00 J | | | 410.00 J | |
| 10.00 | indeno(1,2,3-cd)pyrene | 370.00 J | | | 180.00 J | |
| 10.00 | dibenz(a,h)anthracene | 94.00 J | | | | |

Comments: **********

LFLF=permitted landfill; SY=slag yard; UUD=underdrain; CDP=cement dust pile;
ORBC=Ohio River Back Channel sample quant. limit = CRQL X Dil. Factor

SELECTED SAMPLE ORDER

SITE NAME: PHILLIPS LANDFILL
PROJECT NO: 3738-06
LAB NAMES: Org: IOWA Inorg: SKINER SAS: PRECIS

SAMPLING DATE(s): 8/19/92
CASE NUMBER:18622

STATE/COUNTY CODE: PA/
EPA NUMBER: PA-76

| SAMPLE NUMBER: | CGG81 | CGG72 | CGG73 | CGG79 | CGG80 |
|---|---|---|---|---|---|
| SAMPLE ID: | W-1 | W-2 | W-3 | SD-5 | SD-6 |
| LOCATION: | slag from SY SAS | cement dust CDP SAS | foundry sand NE of CDP SAS | LF/CDP UD DS org by SAS match SW-5 gravel&fines | dup SD-5 org by SAS |
| PH: | 8.0 | 8.1 | 7.9 | 8.4 | 8.3 |
| FIELD MEASUREMENTS: | | | | | |
| PERCENT SOLIDS: | 92.0% | 46.0% | 93.0% | 82.0% | 79.0% |
| TYPE OF DATA: ****** SEMIVOLATILES | | | | | |
| DILUTION FACTOR: | 37.0 | 140.0 | 69.0 | 36.0 | 39.0 |

| DET. LIMIT CRQL (*=IDL) | SAMPLE NUMBER: / UNITS: | CGG81 ug/kg | CGG72 ug/kg | CGG73 ug/kg | CGG79 ug/kg | CGG80 ug/kg |
|---|---|---|---|---|---|---|
| 10.00 benzo(g,h,i)perylene | | 360.00 J | | | 160.00 J | |
| TYPE OF DATa: ****** PESTICIDES | | | | | | |
| DILUTION FACTOR: | | 7.1 | 14.0 | 7.0 | 7.8 | 35.0 |

| DET. LIMIT CRQL (*=IDL) | SAMPLE NUMBER: / UNITS: | CGG81 ug/kg | CGG72 ug/kg | CGG73 ug/kg | CGG79 ug/kg | CGG80 ug/kg |
|---|---|---|---|---|---|---|
| 0.05 heptachlor | | 0.20 L | | | | |
| 0.05 heptachlor epoxide | | 0.37 L | | | | |
| 0.10 4,4'-DDE | | 0.20 R | | | 0.11 R | |
| 0.10 4,4'-DDD | | | | | 0.59 R | |
| 0.05 alpha chlordane | | 2.10 L | | | 0.14 J | |
| 0.05 gamma chlordane | | 1.80 L | | | 0.17 J | |
| 1.00 aroclor-1260 | | | | | | 13.00 J |

Comments:
LFLF=permitted landfill; SY=slag yard; UUD=underdrain; CDP=cement dust pile;
ORBC=Ohio River Back Channel sample quant. limit = CRQL X Dil. Factor

ORIGINAL (Red)

ORIGINAL (Red)

SELECTED SAMPLE ORDER

SITE NAME: PHILLIPS LANDFILL
PROJECT NO: 3738-06
LAB NAMES: Org: IOWA Inorg: SKINER SAS: PRECIS

SAMPLING DATE(s): 8/19/92
CASE NUMBER: 18622

STATE/COUNTY CODE: PA/
EPA NUMBER: PA-76

| SAMPLE NUMBER: | MCHG16 | MCHG17 | MCHG05 | MCHG06 | MCHG07 | MCHG08 | MCHG13 | MCHG25 | MCHG01 |
|---|---|---|---|---|---|---|---|---|---|
| SAMPLE ID: | SW-1 | SW-2 | SW-4 | SW-3 | SW-5 | SW-6 | MW-C | MW-CF | MW-B |
| LOCATION: | SY UD US DS rec,drink from manhole | SY UD DS DS drink,rec foam,odrls | CDP UD US DS rec,drink clr,odrls | LF UD US DS rec,drink clr,odrls | LF/CDP UD DS rec,dr DS tan-or, suds | dup SW-5 | PVC 45.1' deep W of LF clr,odrls | MW-C filtered diss metals | PVC 20' to bottm downhill |
| PH: | 7.1 | 7.9 | 8.1 | 7.9 | 8.6 | 8.7 | 7.2 | | 7.3 |
| FIELD MEASUREMENTS: | | | | | | | | | |
| PERCENT SOLIDS: | | | | | | | | | |
| TYPE OF DATA: ****** INORGANICS | ********** | | | | | | | | |
| DILUTION FACTOR: : GFAA | 1.000 | 1.000 | 1.000 | 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 | 1.000 | 1.000 | 1.000 |
| : Hg | 1.000 | 1.000 | 1.000 | 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 | 1.000 | | 1.000 |

| DET. LIMIT CRQL (*=IDL) | SAMPLE NUMBER: / UNITS: | MCHG16 | MCHG17 | MCHG05 | MCHG06 | MCHG07 | MCHG08 | MCHG13 | MCHG25 | MCHG01 |
|---|---|---|---|---|---|---|---|---|---|---|
| | | ug/l | ug/l | ug/l | ug/l | ug/l | ug/l | ug/l | ug/l | ug/l |
| * 17.30 | aluminum | 635.00 | 108.00 B | 473.00 | 178.00 B | 516.00 | 490.00 | 641.00 | 41.60 B | 20300.00 |
| * 16.50 | antimony | 17.00 B | | | | | | | | |
| * 2.60 | arsenic | 4.80 J | | | | 6.20 J | 4.90 | | | 7.30 |
| * 1.00 | barium | 101.00 | 82.30 | 36.60 | 58.80 | 163.00 | 163.00 | 101.00 | 93.90 | 305.00 |
| * 0.40 | beryllium | | | | | | | | | 2.30 |
| * 14.30 | calcium | 77200.00 | 88500.00 | 56900.00 | 87700.00 | 96700.00 | 96600.00 | 103000.00 | 106000.00 | 115000.00 |
| * 3.70 | chromium | 9.10 B | | | | | | | | 43.90 |
| * 2.30 | cobalt | | | 2.30 B | | | | 2.30 B | 3.00 B | 29.80 |
| * 2.40 | copper | 15.40 J | 4.40 J | 12.20 J | 7.10 J | 6.60 J | 13.60 J | 6.20 J | 6.10 B | 54.70 J |
| * 16.30 | iron | 5300.00 | 278.00 | 646.00 | 241.00 | 1090.00 | 1110.00 | 1110.00 | 19.80 B | 40600.00 |
| * 2.20 | lead (anal. by GFAA) | 11.90 B | 9.10 B | 3.50 B | 6.30 B | 3.00 B | | 11.00 B | 3.80 B | 53.50 |
| * 16.60 | magnesium | 15600.00 | 18000.00 | 13900.00 | 14100.00 | 49400.00 | 49600.00 | 29400.00 | 29900.00 | 36200.00 |
| * 1.30 | manganese | 1910.00 | 418.00 | 29.20 | 15.00 | 619.00 | 617.00 | 122.00 | 12.40 | 1380.00 |
| * 0.20 | mercury | | 0.21 J | | | 0.21 J | | | | 0.71 J |
| * 6.00 | nickel | 10.80 B | | | | 6.80 B | 8.00 B | | | 39.50 |
| * 77.10 | potassium | 5840.00 | 34000.00 | 2910.00 | 3230.00 | 400000.00 | 364000.00 | 2550.00 | 2350.00 B | 150000.00 |
| * 3.70 | selenium | | | | | 8.20 | 8.80 | | | 6.90 |
| * 29.70 | sodium | 34500.00 | 62500.00 | 32800.00 | 28700.00 | 161000.00 | 157000.00 | 152000.00 | 155000.00 | 120000.00 |
| * 3.30 | vanadium | 3.40 B | | | | 4.90 B | 4.30 B | | | 43.10 |
| * 10.10 | zinc | 93.20 | | 10.40 B | | | 13.70 B | 37.20 B | 38.20 B | 136.00 |
| 10.00 | cyanide | | 50.60 | | | 572.00 | 592.00 | | | 68.60 |

Comments: ********** ********** **********

LFLF=permitted landfill; SY=slag yard; UUD=un ain; CDP=cement dust pile;
ORBC=Ohio River Back Channel sample det lim = IDL X DF

SELECTED SAMPLE ORDER

SITE NAME: PHILLIPS LANDFILL
SAMPLING DATE(s): 8/19/92
STATE/COUNTY CODE: PA/
PROJECT NO: 3738-06
CASE NUMBER: 18622
EPA NUMBER: PA-76
LAB NAMES: Org: IOWA Inorg: SKINER SAS: PRECIS

| SAMPLE NUMBER: | MCHG23 | MCHG02 | MCHG24 | MCHG14 | MCHG15 |
|---|---|---|---|---|---|
| SAMPLE ID: | MW-BF | MW-D | MW-DF | AQ BLANK | FILT BLANK |
| LOCATION: | MW-B filtered diss metals | dup MW-B | dup MW-BF diss metals | aqueous blank | filtered blank diss metals |
| PH: | | 7.2 | | 6.0 | |
| FIELD MEASUREMENTS: | | | | | |
| PERCENT SOLIDS: | | | | | |

TYPE OF DATA: ****** INORGANICS **********

| DILUTION FACTOR: | MCHG23 | MCHG02 | MCHG24 | MCHG14 | MCHG15 |
|---|---|---|---|---|---|
| : GFAA | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| : ICP | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| : Hg | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| : CN | | 1.000 | | 1.000 | |

| DET. LIMIT CRQL (*=IDL) | SAMPLE NUMBER: / UNITS: | MCHG23 | MCHG02 | MCHG24 | MCHG14 | MCHG15 |
|---|---|---|---|---|---|---|
| | | ug/l | ug/l | ug/l | ug/l | ug/l |
| * 17.30 | aluminum | 45.50 B | 18500.00 | 32.20 B | 21.00 | 40.30 |
| * 16.50 | antimony | | | 17.10 B | | |
| * 2.60 | arsenic | | 9.00 | | | |
| * 1.00 | barium | 91.60 | 321.00 | 93.10 | | 4.50 |
| * 0.40 | beryllium | | 1.80 | | | |
| * 14.30 | calcium | 106000.00 | 112000.00 | 110000.00 | 78.80 | 2360.00 |
| * 3.70 | chromium | | 39.50 | | | |
| * 2.30 | cobalt | | 23.50 | 3.00 B | | |
| * 2.40 | copper | 3.70 B | 43.20 J | 4.70 B | | 3.00 |
| * 16.30 | iron | 69.00 B | 40000.00 | 62.60 B | | 45.70 |
| * 2.20 | lead (anal. by GFAA) | | 39.10 | | 5.70 | |
| * 16.60 | magnesium | 30400.00 | 36100.00 | 31600.00 | 35.00 | 687.00 |
| * 1.30 | manganese | 144.00 | 1010.00 | 178.00 | | 2.00 |
| * 0.20 | mercury | | 0.35 J | | | |
| * 6.00 | nickel | | 37.50 | | | |
| * 77.10 | potassium | 142000.00 | 151000.00 | 144000.00 | | 2930.00 |
| * 3.70 | selenium | | | | | |
| * 29.70 | sodium | 119000.00 | 122000.00 | 125000.00 | 87.20 | 2910.00 |
| * 3.30 | vanadium | | 37.60 | | | |
| * 10.10 | zinc | 17.90 B | 121.00 | 23.60 B | | 10.20 |
| 10.00 | cyanide | | 79.00 | | | |

Comments: **********
LFLF=permitted landfill; SY=slag yard; UUD=underdrain; CDP=cement dust pile;
ORBC=Ohio River Back Channel sample det lim = IDL X DF

ORIGINAL (Red)

SELECTED SAMPLE ORDER

SITE NAME: PHILLIPS LANDFILL — SAMPLING DATE(s): 8/19/92 — STATE/COUNTY CODE: PA/

PROJECT NO: 3738-06 — CASE NUMBER:18622 — EPA NUMBER: PA-76

LAB NAMES: Org: IOWA Inorg: SKINER SAS: PRECIS

| SAMPLE NUMBER: | MCHG09 | MCHG10 | MCHG11 | MCHG18 | MCHG19 | MCHG20 | MCHG21 | MCHG22 |
|---|---|---|---|---|---|---|---|---|
| SAMPLE ID: | SD-4 | SD-5 | SD-6 | SD-2 | SD-3 | S-1 | S-2 | S-3 |
| LOCATION: | CDP UD US match SW-4 brn w/ pebls | LF/CDP UD DS match SW-5 gravel&fines | dup SD-5 | SY UD DS match SW-2 dk sdy clay | LF UD US match SW-3 brn sd slt p | W of Sto-Ken -Rox field some access peb sil sand | SW of Sto-Ke n-Rox field some access brn clay,sil | off-site background |
| PH: | 8.1 | | | | | 5.2 | 5.5 | 5.0 |
| FIELD MEASUREMENTS: | | | | | | | | |
| PERCENT SOLIDS: | 72.1% | 77.3% | 73.9% | 67.2% | 79.8% | 81.7% | 75.1% | 75.0% |
| TYPE OF DATA: ****** INORGANICS | ********** | ********** | ********** | ********** | ********** | ********** | ********** | ********** |
| DILUTION FACTOR: : GFAA | 0.262 | 0.237 | 0.260 | 0.295 | 0.246 | 0.235 | 0.249 | 0.259 |
| : ICP | 0.259 | 0.249 | 0.248 | 0.295 | 0.232 | 0.229 | 0.244 | 0.259 |
| : Hg | 0.555 | 0.616 | 0.541 | 0.647 | 0.501 | 0.612 | 0.579 | 0.606 |
| : CN | 0.069 | 0.063 | 0.064 | 0.070 | 0.057 | 0.061 | 0.066 | 0.067 |

| DET. LIMIT CROL (*=IDL) | SAMPLE NUMBER: / UNITS: | MCHG09 | MCHG10 | MCHG11 | MCHG18 | MCHG19 | MCHG20 | MCHG21 | MCHG22 |
|---|---|---|---|---|---|---|---|---|---|
| | | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg |
| * 23.90 | aluminum | 10600.00 J | 6740.00 J | 15700.00 J | 10400.00 J | 10900.00 J | 7930.00 | 10900.00 | 11400.00 |
| * 2.40 | arsenic | 11.70 | 8.90 | 5.00 | 8.70 | 8.30 | 8.60 | 26.80 J | 10.30 |
| * 4.60 | barium | 95.70 | 102.00 | 149.00 | 186.00 | 93.60 | 31.20 | 77.90 | 93.70 |
| * 0.70 | beryllium | 0.73 J | 0.56 J | 1.80 J | 1.30 J | 1.10 J | 0.24 | 0.89 | 0.39 |
| * 15.50 | calcium | 4620.00 | 103000.00 | 88200.00 | 25200.00 | 15800.00 | 871.00 | 3810.00 | 649.00 |
| * 4.90 | chromium | 19.70 | 13.70 | 24.40 | 21.80 | 21.00 | 18.00 | 19.60 | 19.10 |
| * 3.50 | cobalt | 16.70 | 6.20 | 6.90 | 8.80 | 17.70 | 9.10 | 16.10 | 12.80 |
| * 3.80 | copper | 27.50 | 15.40 | 15.50 | 43.70 | 20.20 | 15.70 | 34.40 | 16.90 |
| * 7.60 | iron | 30200.00 | 13900.00 | 14200.00 | 22000.00 | 35600.00 | 21800.00 | 28000.00 | 22100.00 |
| * 1.00 | lead (anal. by GFAA) | 31.30 | 17.10 | 13.90 | 243.00 | 39.10 | 41.40 | 71.30 | 66.20 |
| * 40.10 | magnesium | 3560.00 J | 4530.00 J | 14400.00 J | 4790.00 J | 4620.00 J | 1860.00 | 2700.00 | 2130.00 |
| * 4.40 | manganese | 1400.00 J | 711.00 J | 2630.00 J | 992.00 J | 926.00 J | 598.00 | 1240.00 | 1020.00 |
| * 0.10 | mercury | | | | 0.34 | | 0.09 | 0.16 | 0.12 |
| * 3.90 | nickel | 26.90 | 13.00 | 15.60 | 20.10 | 31.90 | 17.00 | 29.60 | 18.80 |
| * 265.50 | potassium | 995.00 | 2250.00 | 2310.00 | 1250.00 | 1420.00 | 604.00 | 1960.00 | 692.00 |
| * 3.60 | selenium | | | 2.30 L | 1.90 L | | 0.92 K | 1.50 K | 1.60 K |
| * 4.80 | silver | 1.80 B | | | 1.50 B | 1.70 B | 1.40 B | 1.80 B | 1.30 B |
| * 31.30 | sodium | 115.00 B | 382.00 | 584.00 | 286.00 | 124.00 B | 36.30 B | 77.70 B | 66.20 B |
| * 0.90 | thallium | | | | 0.28 B | 0.89 B | | 0.91 B | 0.70 B |
| * 2.40 | vanadium | 25.60 | 14.80 | 20.70 | 20.50 | 24.90 | 20.90 | 22.20 | 25.20 |
| * 2.90 | zinc | 96.40 | 55.40 | 59.50 | 201.00 | 129.00 | 73.20 | 161.00 | 84.30 |
| 10.00 | cyanide | | 0.96 | 0.89 | 6.00 | | | | |

Comments: ********** ********** **********

LFLF=permitted landfill; SY=slag yard; UUD=[illegible]drain; CDP=cement dust pile;

ORBC=Ohio River Back Channel sample det lim = IDL X DF

SELECTED SAMPLE ORDER

SITE NAME: PHILLIPS LANDFILL
PROJECT NO: 3738-06
LAB NAMES: Org: IOWA Inorg: SKINER SAS: PRECIS

SAMPLING DATE(s): 8/19/92
CASE NUMBER:18622

STATE/C Y CODE: PA/
EPA NUM... PA-76

| SAMPLE NUMBER: | MCHG12 | MCHG03 | MCHG04 |
|---|---|---|---|
| SAMPLE ID: | W-1 | W-2 | W-3 |
| LOCATION: | slag from SY SAS | cement dust CDP SAS | foundry sand NE of CDP SAS |
| PH: | 8.0 | 8.1 | 7.9 |
| FIELD MEASUREMENTS: | | | |
| PERCENT SOLIDS: | 94.0% | 54.0% | 94.0% |

TYPE OF DATA: ****** INORGANICS **********

| DILUTION FACTOR: | | | |
|---|---|---|---|
| : GFAA | 0.213 | 0.370 | 0.213 |
| : ICP | 0.213 | 0.370 | 0.213 |
| : Hg | 0.001 | 0.002 | 0.001 |
| : CN | 0.053 | 0.092 | 0.053 |

| DET. LIMIT CRQL (*=IDL) | SAMPLE NUMBER: / UNITS: | MCHG12 mg/kg | MCHG03 mg/kg | MCHG04 mg/kg |
|---|---|---|---|---|
| * 100.00 | aluminum | 15000.00 J | 10300.00 | 7930.00 |
| * 2.00 | arsenic | 7.30 | 12.20 | 2.80 |
| * 40.00 | barium | 170.00 | 137.00 | 17.70 |
| * 3.00 | beryllium | 1.30 B | 1.70 B | |
| * 4.00 | cadmium | | 3.50 B | |
| * 200.00 | calcium | 50600.00 J | 214000.00 | 1790.00 |
| * 6.00 | chromium | 71.40 J | 11.60 | 49.00 |
| * 40.00 | cobalt | 9.00 | | |
| * 8.00 | copper | 29.60 | 13.30 | 7.30 |
| * 40.00 | iron | 29600.00 J | 8380.00 | 18200.00 |
| * 1.00 | lead (anal. by GFAA) | 159.00 J | | 18.60 |
| * 30.00 | lead (anal. by ICP) | | 59.90 | |
| * 200.00 | magnesium | 9220.00 J | 8370.00 | 340.00 |
| * 9.00 | manganese | 1410.00 J | 186.00 | 155.00 |
| * 0.20 | mercury | 0.28 | 0.07 | 0.06 |
| * 30.00 | nickel | 33.70 B | 14.60 B | 21.20 B |
| * 400.00 | potassium | 1860.00 | 1430.00 | 472.00 |
| * 1.00 | selenium | 0.41 B | 12.00 | |
| * 4.00 | silver | | 1.70 B | |
| * 400.00 | sodium | 344.00 | 271.00 | 140.00 |
| * 2.00 | thallium | | 2.10 J | |
| * 10.00 | vanadium | 25.90 | 19.50 | 13.30 |
| * 20.00 | zinc | 96.20 L | 114.00 L | 5.30 L |
| 10.00 | cyanide | 2.40 L | | |

Comments: **********

LFLF=permitted landfill; SY=slag yard; UUD=underdrain; CDP=cement dust pile;
ORBC=Ohio River Back Channel sample det lim = IDL X DF

(Red)

## 5.2 ORGANIC DATA VALIDATION REPORT: CASE NUMBER 18622

### 5.2.1 Overview

Case 18622 consisted of 10 aqueous and six solid samples submitted to Hygienic Laboratory (IOWA) for analysis for volatile, semivolatile, and pesticide/polychlorinated biphenyl (PCB) compounds. One aqueous field duplicate pair and one field blank were included in this sample set. One trip blank was also submitted for volatile fraction analysis. The samples were analyzed as a Contract Laboratory Program (CLP) Routine Analytical Service (RAS).

### 5.2.2 Summary

These samples were analyzed according to the March 1990 Statement of Work (SOW). All samples were successfully analyzed for all target compounds. Detection capability for most analytes was demonstrated by meeting criteria for spike and surrogate recoveries and instrument tuning and calibration.

### 5.2.3 Major Issues

- Pesticide fraction data from this case should be interpreted with caution. The only pesticide compound that was present at levels high enough for confirmation by gas chromatography/mass spectrometry (GC/MS) was Malathion, which was not one of the CLP target compounds. The remaining pesticide results were qualified (R), unreliable, to indicate that false positives may be present among any number of these pesticide results. Despite the laboratory's adherence to the CLP SOW, the samples' chromatograms exhibited many closely spaced peaks, even after cleanup. Numerous interfering peaks of similar height occurred on either side of the retention time (RT) windows for most of the reported target pesticides, such that unrelated compounds could have caused any of the RT matches reported as target pesticide compounds. For example, most of the identifications of DDT analogs in samples CGG85, CGG86, and CGG88 exhibited greater than three-fold discrepancies between the concentrations detected on two GC columns, which suggests that the larger peak in each case is an artifact (not the pesticide of interest). In addition, although several components of technical-grade chlordane (alpha-chlordane, gamma-chlordane, and heptachlor epoxide) were reported together, these chlordane peaks were not visible in chromatograms above the "picket fence" pattern of nearby interference peaks. Because of these difficulties, special methods (such as selected ion monitoring GC/MS) would be required to confirm the trace levels of pesticides that may be present at these sampling locations.

### 5.2.4 Minor Issues

- All positive results for methylene chloride, bis(2-ethylhexyl) phthalate (DEHP), and acetone less than 10 times the amount in the blanks (common laboratory contaminants) have been qualified as artifacts of blank contamination (B). The presence of DEHP in the laboratory and field blanks was inferred from the quantitation lists and chromatograms.

- The results for di-n-butyl phthalate have been qualified (R), unreliable, in samples CGG86 and CGG87. The amount detected was less than 10 nanograms, instrument level, in a range where approximately one-half of CLP laboratory cases exhibit blank contamination effects for this common laboratory contaminant.

- The decachlorobiphenyl surrogate recovery for both columns in CGG70 was below the QC limits but greater than 10 percent. Detection limits for all pesticide fraction compounds in this sample were considered to be estimated.

- The percent differences between columns were greater than 25 percent for aldrin in CGG77; methoxychlor and alpha-chlordane in CGG78; dieldrin in CGG84; endosulfan II in CGG85; aldrin, heptachlor epoxide, and alpha- and gamma-chlordane in CGG86; heptachlor epoxide, dieldrin, and alpha-chlordane in CGG87; and aldrin in CGG90. These results were previously qualified (R) and are considered further estimated.

### 5.2.5 Notes

- Several volatile and semivolatile compounds that were either not detected in samples or present at levels qualified because of blank contamination exhibited calibration response factor fluctuations that exceeded 30 percent RSD in initial calibrations or 25 percent difference in continuing calibrations. In the reviewer's professional judgment, associated non-detected results were not considered to be affected by the observed deviations.

- The relative standard deviation among unspiked compounds in the matrix spike samples, original samples, and matrix spike duplicates are shown in the Support Documentation. Good agreement was noted for the levels of acetone in sample CGG86, which corroborates this identification. Imprecision was noted for butyl benzyl phthalate and endosulfan sulfate in CGG86, but no qualifications were made based on this information alone.

- Sample results that are below the range of accurate quantitation have been qualified estimated (J), where no other qualifier exists.

- Tentatively identified compounds (TICs) that are not artifacts of blank contamination are included as an attachment.

- The data were fully reviewed using the National Functional Guidelines for Organic Review, Multi-Media, Multi-Concentration, February 1988, with Regional Modifications (June 1992). This report has been formatted to address issues directly affecting data usability at the subject site. Support data are included as an attachment. Issues pertaining to laboratory contractual compliance are addressed in the regional Data Assessment Forms directed toward the Technical Project Officer.

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## SAMPLE DATA SUMMARY: ORGANIC TENTATIVELY IDENTIFIED COMPOUNDS

| SAMPLE NUMBER | ANALYSIS FRACTION (VOA/BNA) | ESTIMATED CONCENTRATION VALUE | ESTIMATED CONCENTRATION UNITS | QUALIFIER CODE | COMPOUND NAME |
|---|---|---|---|---|---|
| CGG70 | VOA | | | | ND |
| | BNA | 73 | ug/L | unk | unknowns, poss. alcohols |
| | | | | | |
| CGG71 | VOA | | | | ND |
| | BNA | 98 | ug/L | unk | unknowns |
| CGG74 | VOA | | | | ND |
| | BNA | 4 | ug/L | unk | unknown |
| | | | | | |
| CGG75 | VOA | | | | ND |
| | BNA | 3 | ug/L | unk | unknown |
| | | | | | |
| CGG76 | VOA | | | | ND |
| | BNA | 8 | ug/L | | 1,3-Oxothiolane [2094-97-5] |
| | | 2 | | | Phosphoric acid, diethyl ester [598-02-7] |
| | | 3 | | | 3,5,5-Trimethyl propanoic acid, 1,2,3-propane triyl |
| | | | | | - ester [CAS# 56554-53-1] |
| | | 3 | | iso | Dimethylphenol isomer |
| | | 5 | | TOT(2) | N-ethyl 4-methylbenzenesulfonamide [80-39-7] |
| | | 4 | | | Methyl parathion [298-00-0] |
| | | 6 | | unk | unknown hydrocarbon |
| | | 23 | | unk | unknowns |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

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.

(Red)

## SAMPLE DATA SUMMARY: ORGANIC TENTATIVELY IDENTIFIED COMPOUNDS

| SAMPLE NUMBER | ANALYSIS FRACTION (VOA/BNA) | ESTIMATED CONCENTRATION VALUE | ESTIMATED CONCENTRATION UNITS | QUALIFIER CODE | COMPOUND NAME |
|---|---|---|---|---|---|
| CG677 | VOA | | | | ND |
| | BNA | 8 | ug/L | | 1,3-Oxathiolane [ 2094-97-5 ] |
| | | 4 | | | 2-Ethyl-4-methyl-1-pentanol |
| | | 2 | | | Phosphoric acid, dimethyl ester |
| | | 4 | | | 3,5,5-trimethylhexanoic acid, 1,2,3-propane triyl est |
| | | 2 | | iso | Dimethyl phenol isomer |
| | | 6 | | | N-ethyl-4-methyl benzenesulfonamide |
| | | 2 | | | Hexadecanoic acid [57-10-3] |
| | | 19 | | unk | unknowns |
| | | | | | |
| CG678 | VOA | | | | ND |
| | BNA | 190 | ug/kg | ISO | (E)-3-Eicosene [74685-33 ] |
| | | 440 | | unk | unknown alkanes |
| | | 630 | | unk | unknown hydrocarbons |
| | | 890 | | unk | unknowns |
| | | | | | |
| CG622 | VOA | | | | ND |
| | BNA | 122 | ug/L | unk | unknowns |
| | | | | | |
| CG624 | VOA | | ug/L | | ND |
| | BNA | 12 | | | Benzo[b]thiophene [95-15-8] |
| | | 28 | | | Phthalic acid CAS # 88-99-3 |
| | | 4 | | | 1H-Isoindole-1,3(2H)-dione [85 -6] |
| | | 14 | | | 9,10-Anthracenedione [84-65-1] |
| | | 10 | | | 3-(3-oxo-1(3H)-isobenzofuranylidene 1-(3H)-isobenzofuranone [482-23-5 |
| | | 161 | | unk | Unknowns |
| | | | | | |
| | | | | | |

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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.

## SAMPLE DATA SUMMARY: ORGANIC TENTATIVELY IDENTIFIED COMPOUNDS

| SAMPLE NUMBER | ANALYSIS FRACTION (VOA/BNA) | ESTIMATED CONCENTRATION VALUE | ESTIMATED CONCENTRATION UNITS | QUALIFIER CODE | COMPOUND NAME |
|---|---|---|---|---|---|
| CG685 | VOA | 8 | ug/L | iso | Dichlorobenzene isomer |
| | BNA | 2 | ↓ | unk | unknown |
| | | | | | |
| CG686 | VOA | 10 | ug/kg | iso | Dichlorobenzene isomer |
| | BNA | 1200 | | | 2,6-Dimethoxy-4-(2-propenyl)phenol |
| | | | | | [6627-88-9] |
| | | 920 | | unk | $C_{15}H_{12}$ PAH |
| | | 1600 | | unk | $C_{16}H_{12}$ PAH + unknown |
| | | 410 | | unk | $C_{16}H_{14}$ PAH |
| | | 390 | | unk | $C_{17}H_{12}$ PAH |
| | | 16600 | | unk | $C_{20}H_{12}$ PAH + unknown hydrocarbon |
| | | 3430 | | unk | unknown alkanes |
| | | 630 | | unk | unknown PAH |
| | | 3400 | | unk | unknown hydrocarbons |
| | | 4380 | ↓ | unk | unknowns |
| | | | | | |
| CG687 | VOA | | | | ND |
| | BNA | 100 | ug/kg | | hexanedioic acid, unknown ester |
| | | | | | |
| | | 200 | | | (E)-3-Eicosene |
| | | 1180 | | unk | unknown alkanes |
| | | 2710 | ↓ | unk | unknowns |
| | | | | | |
| CG688 | VOA | | | | ND |
| | BNA | 530 | ug/kg | | Hexadecanoic acid [57-10-3] |
| | | 460 | | iso | (E)-3-Eicosene or isomeric alkene |
| | | 4930 | | unk | unknown aldehyde |
| | | 16070 | | unk | unknown alkane |
| | | 8470 | ↓ | unk | unknowns |

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.

ORIGINAL (Red)

# SAMPLE DATA SUMMARY: ORGANIC TENTATIVELY IDENTIFIED COMPOUNDS

| SAMPLE NUMBER | ANALYSIS FRACTION (VOA/BNA) | ESTIMATED CONCENTRATION VALUE | ESTIMATED CONCENTRATION UNITS | QUALIFIER CODE | COMPOUND NAME |
|---|---|---|---|---|---|
| CG689 | VOA | | | | ND |
| | BNA | 500 | ug/kg | | Hexadecanoic acid |
| | | 330 | | | |
| | | | | | |
| | | 370 | | ISO | (E)-3-Eicosene or isomer alkene |
| | | 2750 | | unk | unknown aldehyde |
| | | 11150 | | unk | unknown alkenes |
| | | 960 | | unk | unknown hydrocarbons |
| | | 9620 | | unk | unknowns |
| | | | | | |
| CG690 | VOA | | | | ND |
| | BNA | 280 | ug/kg | | Hexadecanoic acid |
| | | 8100 | | unk | unknown aldehyde |
| | | 14080 | | unk | unknown alkenes |
| | | 6950 | | unk | unknowns |

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.

## 5.3 ORGANIC DATA VALIDATION REPORT: SAS 7453C-01

### 5.3.1 Overview

SAS 7453C-01 consisted of five samples submitted to Precision Analytical Laboratory (PRECIS) for volatile, semivolatile, and pesticide/polychlorinated biphenyl (PCB) analyses. One field duplicate pair was included in this sample set. The samples were analyzed as a Contract Laboratory Program (CLP) Special Analytical Service (SAS). The SAS analysis differed only from Routine Analytical Service (RAS) organic analysis in that the samples were to be ground and passed through a no. 10 sieve to prevent rocky material in the samples from interfering with the analysis.

### 5.3.2 Summary

These samples were analyzed according to the March 1990 Statement of Work (SOW), as modified. Detection capability for volatile and base-neutral/acid (BNA) analytes was demonstrated by meeting criteria for spike and surrogate recoveries and instrument tuning and calibration. Detection capability for pesticides is unreliable in all but two samples because of a combination of laboratory problems affecting initial extraction results and re-extraction results for the same samples. These problems are discussed in the following section.

### 5.3.3 Major Issues

- The initial pesticide fraction analysis of samples CGG72, CGG73, and CGG81 revealed less than 10 percent recoveries on both gas chromatographic (GC) columns for the pesticide surrogate tetrachlorometaxylene (TCX) and 10 to 20 percent recoveries for the other pesticide surrogate, decachlorobiphenyl (DCB). These data, in conjunction with similarly low matrix spike recoveries obtained for sample CGG81, indicate that detection capability for all pesticide compounds and PCBs should be considered unreliable (R) for the initial extraction and analysis of these samples. In addition, positive results for several pesticides that occurred in sample CGG81 are considered biased extremely low and have been coded (L) on the data summary (except where superseded by another qualifier).

(Red)

- The re-extraction of the pesticide fraction of samples CGG72, CGG73, CGG79, and CGG81 yielded acceptable surrogate recoveries (and matrix spike recoveries, for the most part). However, the re-extracted samples all exhibited retention time shifts for the pesticide surrogate compounds that were outside control limits. Specifically, TCX and DCB were both out of control on the DB-1701 column, and DCB was out of control on the DB-608 column. This, in conjunction with out-of-control retention times on the DB-1701 column for an analytical standard and two matrix spikes (samples CGG73MSRE and CGG73MSDRE), indicates that target compounds present in the re-extracted samples could be missed (false negatives) under the conditions of the re-analysis. Therefore, detection capability for pesticides/PCBs is considered unreliable (R) for the re-analysis of samples CGG72, CGG73, CGG79, and CGG81. In the case of sample CGG79, the initial analysis results can still be considered usable, whereas the other three samples' pesticide detection capability cannot be established reliably from either the initial or the re-analysis.

- In the initial analysis of samples CGG79 and CGG81, several pesticides were detected within the retention time windows on both columns but were not reported as present by the laboratory. The following compounds have been added by the reviewer to the data summary: 4,4'-DDE, 4,4'-DDD, alpha-chlordane, and gamma-chlordane for CGG79 and 4,4'-DDE, heptachlor, heptachlor epoxide, alpha-chlordane, and gamma-chlordane for CGG81. (Some of the compounds added by the reviewer were present at levels above the sample quantitation limit; others were below this limit.) Note that all the results added by the reviewer in sample CGG81 are associated with low (less than 10 percent) surrogate recoveries from the initial extraction and so are considered biased extremely low (L). Despite this severe quantitative bias, positive results were chosen from this analysis to report on the data summary because the qualitative validity (confidence concerning the presence or absence) of positive results is superior in this analysis to that of the re-analysis (where identifications based upon retention times could not be trusted). Furthermore, the fact that heptachlor and chlordane isomers occurred together and are also common constituents of commercial technical chlordane formations further corroborates the identification of these compounds; it is not plausible that complex chromatographic patterns from several chlordane components could be mimicked by multiple unrelated compounds all possessing similar retention time characteristics to the target pesticides.

- Several other pesticides were identified based upon GC retention times alone because detected levels were too low for confirmation by gas chromatography/mass spectrometry (GC/MS). For 4,4'-DDD and 4,4'-DDE in samples CGG79 and CGG81, the related parent compound to these degradation products (DDT) was not detected in either sample. Because only one or two DDT analogs were detected in each sample, it is possible that unrelated compounds having similar retention times could have caused false positives for these pesticides (due to the lack of specificity of the electron capture detector). These results have been coded (R), unreliable, to indicate that further information (site history or additional sampling results) would be necessary to confirm the presence or absence of these compounds.

- The reviewer has deleted the result for 4,4-'DDD from sample CGG80. The retention time (RT) of the corresponding peak representing DDD was outside established RT windows on one of the two GC columns. (Sample CGG80 was analyzed within an analytical sequence where all RT criteria were met, so it can be assumed that DDD, if present, would elute within RT windows.)

### 5.3.4 Minor Issues

- All positive results for methylene chloride, di-n-butyl phthalate, di-n-octyl phthalate, bis(2-ethylhexyl) phthalate (DEHP), and acetone less than 10 times the amount in the blanks (common laboratory contaminants) have been qualified as artifacts of blank contamination (B). All positive results for toluene less than five times the amount in the laboratory blanks have been qualified as artifacts of blank contamination.

- All volatile organic analyses (VOAs) were repeated due to multiple quality control (QC) criteria that were exceeded. In addition to sample-specific criteria for system monitoring compounds and internal standards that were exceeded, the laboratory did not achieve the required response factor stability in the initial calibration and indicated that repairs to the purge and trap were required before acceptable recalibration was achieved. Samples CGG72, CGG73, CGG79, CGG80, CGG81MS, and CGG81MSD exhibited out-of-control system monitoring compound recoveries in the initial analysis, and all samples initially exhibited out-of-control recoveries for one or more internal standards. However, samples CGG79 and CGG80 were re-analyzed seven days beyond the Region-III-recommended holding time of 14 days from sample collection to analysis. In addition, system monitoring compounds exhibited similar out-of-control performance in the re-analysis of samples CGG72 and CGG73 and worse performance in the re-analysis of sample CGG81. Internal standard areas were still out of control in the re-analysis of samples CGG72, CGG73, and CGG81, although performance was somewhat improved in the former two samples. The reviewer's selection of which of the initial versus re-analysis results to report on the data summary and the associated data qualifications for the reported data are discussed below:

  - Samples CGG72 and CGG73: Results were reported from the VOA re-analysis because fewer internal standards were outside area criteria. Quantitation limits have been qualified as estimated (UJ) because system monitoring compounds and internal standards were out of control in the reported analysis. (However, serious impairment of detection capability was not indicated.)

  - Samples CGG79 and CGG80: The VOA re-analysis results were reported on the data summary because there were no system monitoring compounds or internal standards outside of QC criteria as in the original analysis. Detection limits are considered to be biased low because of exceeded holding times; however, there were no positive results other than blank contaminants detected in the initial analysis, which was performed within holding times.

- Sample CGG81: Most VOA results were reported from the original analysis because internal standard QC exceedance was not as severe and because system monitoring compound recoveries were acceptable only in this analysis. The one exception was carbon disulfide, which was only detected in and therefore reported from the re-analysis. This compound has been qualified (J) as inaccurate or imprecise because of an out-of-control system monitoring compound recovery. Quantitation limits for the not-detected volatile compounds from 4-methyl-2-pentanone through xylene on the laboratory results (Form I) sheets are qualified as estimated (UJ) because of a very low internal standard recovery (28 percent) for $d_5$-chlorobenzene. (This could impact low-level detection capability somewhat.)

- Due to a laboratory calculation error, semivolatile surrogate recoveries in the initial extraction of samples CGG73 and CGG81 were misinterpreted as being out of control, and the laboratory re-extracted and re-analyzed these samples. However, calculation errors were later corrected by the laboratory and both sets of data were submitted for these samples. Valid detection limits were achieved in the initial analysis for all compounds, so not-detected results are acceptable without qualification from this analysis. Positive results occurred in these analyses for certain phthalate blank contaminants and for polycyclic aromatic hydrocarbons (PAHs), the latter of which are rather persistent in the environment and would not be expected to degrade during brief storage. Therefore, the two analyses were of similar quality for most detected target compounds, and the reviewer selected the most appropriate values to report on the data summary according to the following logic:

  - For sample CGG73, results were reported from the original analysis because this run displayed lower concentrations of blank contaminants than the re-analysis, and the analyses were otherwise of similar quality. The exception was phenanthrene, which was reported from the re-analysis and was not detected in the original analysis.

  - For sample CGG81, most results were reported from the re-analysis, which had lower quantitation limits and generally higher positive detections. Exceptions were made for 2-methylnaphthalene, fluoranthene, chrysene, benzo(k)fluoranthene, and dibenz(a,h)anthracene, which exhibited higher concentrations in the original analysis. The lower concentration of DEHP was reported (initial analysis) because all results were considered to be within the affected range of 10 times the blanks. Positive results for indeno(1,2,3-c,d) pyrene and benzo(g,h,i)perylene have been qualified as estimated (J) because of a slightly low recovery in the reported analysis for the internal standard, $d_{12}$-perylene.

- The holding times from sample collection to extraction for the semivolatile analysis of samples CGG79 and CGG80 exceeded the seven-day limit recommended by Region III EPA for non-aqueous samples by one and five days, respectively. Detection limits for target semivolatile compounds other than PAHs are considered estimated [qualified (UJ)], although the extent of loss or degradation during brief storage might be minor or minimal for most compounds. The only positive results considered estimated (J) because of this holding time exceedance were for carbazole and phthalates, the latter of which were previously qualified because of blank contamination. (The PAHs detected in these samples were considered unaffected because of their known persistence in the environment.)

- The holding time to extraction for pesticide analysis was slightly exceeded for sample CGG79 (nine days instead of seven). Positive pesticide results in this sample are considered to be estimated and were qualified (J) [except where otherwise qualified (R)]. Positive results and detection limits for this sample were also affected by slightly low recovery on both GC columns for one surrogate compound. Results and detection limits are further considered estimated. (However, major impairment of the ability to detect compounds is not indicated, unlike the pesticide problems identified in other samples.)

- The relative percent differences between the sample results obtained on two different GC columns were greater than 25 percent for all reported pesticide compounds. For each compound, the lower of the two values obtained was reported by the reviewer. These results are considered to be estimated and have been qualified (J), except where superseded by the qualifier (R).

- Initial calibration percent relative standard deviation (%RSD) significantly exceeded the QC limit of 30 percent (51.3 to 75 percent) for both initial calibrations of chloromethane. All detection limits for this compound are considered to be estimated. Initial calibration %RSD significantly exceeded the QC limit of 30 percent (65.2 percent) for the initial calibration of carbazole. Positive results for carbazole have been qualified as estimated (J), and detection limits are considered estimated.

- The percent difference (%D) in the relative response factor (RRF) exceeded 50 percent for chloromethane in the continuing calibration standard analyzed on August 26 and September 8. Detection limits for chloromethane in samples CGG79 through CGG81 are considered to be estimated. The %D exceeded 25 percent for indeno(1,2,3-c,d)pyrene and benzo(g,h,i)perylene in the September 2 continuing calibration and for carbazole and DEHP in the August 27 continuing calibration. Positive results in the affected samples were qualified as estimated (J), where not previously qualified due to blank contamination.

- The pesticide fraction holding times to extraction exceeded the recommended holding time of seven days by more than 36 days for CGG80. All non-detects for this sample are considered to be estimated (UJ), and the positive result for Aroclor 1260 has been qualified (J).

### 5.3.5 Notes

- *Field duplicate results revealed different compounds detected in the pesticides/PCB fraction* of samples CGG79 and CGG80. No qualifications were made, as per Region III policy, and all results were very low level (near the quantitation limit).

- The reviewer corrected blank results for semivolatile blank SBLK01 because the laboratory failed to convert instrument level (on column) results to final concentration units (ug per kg of soil). This had the effect of making a contractually non-compliant blank, which contained moderate phthalate levels above five times the contract required quantitation limit (CRQL), appear compliant. In addition, the laboratory narrative identified that internal standards were high by a factor of 2 in all blanks. To correct for these errors, the reviewer used the reported instrument levels to determine the level of blank contamination rather than the Form Is.

- Semivolatile matrix spike recoveries for sample CGG81MSDRE were uniformly low and significantly lower than in CGG81MSRE, which also displayed correspondingly better surrogate recoveries than CGG81MSDRE. Because sample CGG81 exhibited acceptable surrogate recoveries that were similar to the better of the two matrix spikes, no *qualifications were made based upon the deviant matrix spike duplicate.*

- A pesticide standard (PEM15) run on the DB1701 column on September 21 was reported by the laboratory as having severely non-compliant retention times and percent differences in calibration factors. The reviewer determined that the laboratory reported these data from the wrong GC column and recalculated the calibration standard QC data, which in this case was in fact compliant.

- Several pesticide initial calibrations run on the DB1701 column exhibited RSDs for several compounds that were substantially greater than that allowed in the statement of work. No qualifications were made because no positive detections were reported from this column for the errant compounds and not-detected results were considered usable from the other GC column.

- Two consecutive pesticide calibration check standards (PEM16 and PEM18) exhibited out-of-control percent differences on the DB-1701 column for 4,4'-DDT, but the laboratory did not stop analyses and recalibrate, as required by the statement of work. In the analysis of PEM15 on the DB-608 column, methoxychlor exceeded SOW %D requirements. These errant calibration factors did not adversely affect detection limits for any sample, however.

- Sample results that are below the range of accurate quantitation have been qualified estimated (J), where no other qualifier exists.

- Tentatively identified compounds (TICs) that are not artifacts of blank contamination are included as an attachment.

- The RSDs among unspiked compounds in the matrix spike samples, original samples, and matrix spike duplicates are shown in the Support Documentation. The relative percent differences between field duplicates are also shown in the Support Documentation. Some variations were seen, particularly in PAH results that were below the quantitation limit. In accordance with Region III EPA policy, no qualifications were made based upon these data.

- Several volatile and semivolatile compounds that were either not detected in samples or present at levels qualified because of blank contamination exhibited calibration response factor fluctuations that exceeded 30 percent RSD in initial calibrations or 25 percent difference in continuing calibrations. In the reviewer's professional judgment, associated non-detected results were not considered to be affected by the observed deviations.

- The data were fully reviewed using the National Functional Guidelines for Organic Review, Multi-Media, Multi-Concentration, February 1988, with Regional Modifications (June 1992). This report has been formatted to address issues directly affecting data usability at the subject site. Support data are included as an attachment. (Issues pertaining to laboratory contractual compliance are addressed in the Regional Data Assessment Forms directed toward the Technical Project Officer.)

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# SAMPLE DATA SUMMARY: ORGANIC TENTATIVELY IDENTIFIED COMPOUNDS

| SAMPLE NUMBER | ANALYSIS FRACTION (VOA/BNA) | ESTIMATED CONCENTRATION VALUE | ESTIMATED CONCENTRATION UNITS | QUALIFIER CODE | COMPOUND NAME |
|---|---|---|---|---|---|
| CGG72 | VOA | 14 | ug/kg | unk | unknown |
| ↓ | BNA | | | | ND |
| | | | | | |
| CGG73 | VOA | | | | ND |
| | | | | | |
| | BNA | 390 | ug/kg | unk | unk alkanes |
| ↓ | ↓ | 570 | ↓ | unk | unknowns |
| | | | | | |
| CGG79 | VOA | | | | ND |
| ↓ | BNA | | | | ND |
| | | | | | |
| CGG80 | VOA | | | | ND |
| | BNA | 98 | ug/kg | unk | unknown |
| | | 439 | | unk | unk. alkanes |
| | | 120 | | | 2,4-dimethyl-1-heptene |
| | | 240 | | | 4-methyloctane |
| | | 220 | | | 3,6-dimethyldecane |
| ↓ | ↓ | 79 | ↓ | | pentadecane |
| | | | | | |
| CGG81 | VOA | | | | ND |
| | BNA | 140 | ug/kg | unk | unk. alkane |
| | | 940 | | unk | unknown |
| ↓ | ↓ | 180 | ↓ | unk | unk, poss. 2,4-diactylphenol |

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.

## 5.4 INORGANIC DATA VALIDATION REPORT: CASE NUMBER 18622

### 5.4.1 Overview

The set of samples for Case 18622 contained 10 aqueous samples, four filtered aqueous samples, and eight solid samples that were analyzed through the Contract Laboratory Program (CLP) Routine Analytical Services (RAS) by Skinner and Sherman Laboratories (SKINER). Included in the sample set were one unfiltered field blank, one filtered field blank, one filtered field duplicate pair, two unfiltered field duplicate pairs, and one solid field duplicate pair.

### 5.4.2 Summary

The samples were analyzed by the March 1990 Statement of Work (SOW). All analytes were successfully analyzed in all samples. Areas of concern with respect to data usability are listed according to the seriousness of the problem. These include the following items.

### 5.4.3 Major Issues

- Because of extremely low matrix spike recovery (less than 30 percent) and GFAA PDS recovery (less than 40 percent) for thallium in aqueous samples, sample-specific matrix suppression was suspected. The detection limits for thallium in the aqueous SDGs MCHG01 and MCHG15 (except for field blanks MCHG14 and MCHG15) were considered to be unreliable, because GFAA PDS recoveries were also low for all of these samples.

### 5.4.4 Minor Issues

- Because of laboratory blank contamination by aluminum, antimony, barium, cadmium, calcium, chromium, cobalt, iron, magnesium, nickel, silver, sodium, thallium, vanadium, and zinc, positive results for these metals less than five times the maximum blank concentration have been qualified (B) and are considered to be false positives.

- Because of field blank contamination by aluminum, barium, calcium, copper, iron, lead, magnesium, manganese, potassium, and sodium, positive results for these metals less than five times the maximum blank concentration have been qualified (B) and are considered to be false positives. Filtered blanks were compared only to filtered samples. The exceptions to the (B) qualifier were for lead in solid samples MCHG09, MCHG20, MCHG21, and MCHG22. Even though these results were reported from dilutions, where the instrument levels are technically within the range considered attributable to blank contamination, the initial, undiluted results corroborate the diluted values for MCHG09 and MCHG20, and the instrument levels greater than the calibration range for MCHG21 and MCHG22 also show that the levels are high.

- For solid samples MCHG11 and MCHG18, the positive selenium results were affected by multiple factors, including contract required detection limit (CRDL) standard recovery above 125 percent, matrix spike recovery below 75 percent, and method of standard addition (MSA) correlation coefficients below 0.995. Because of low matrix spike recovery, the samples were qualified (L), biased low. These results are further considered estimated because of the CRDL standard recoveries and MSA correlation coefficients. Detection limits in samples MCHG09, MCHG10, and MCHG11 may also be biased low.

- For solid samples MCHG20, MCHG21, and MCHG22, the positive selenium results were affected by CRDL standard recovery above 125 percent [sample delivery group (SDG) MCHG09]. These results, where selenium was detected at less than 28 ug/l, were qualified (K), biased high.

- The MSA correlation coefficient for arsenic in solid sample MCHG21 was less than 0.995, and the positive result was qualified as estimated (J).

- Laboratory duplicate imprecision was reported for copper in unfiltered aqueous sample MCHG13, and field duplicate imprecision was reported for this element in samples MCHG07 and MCHG08. Positive copper results in unfiltered aqueous samples MCHG01, MCHG02, MCHG05, MCHG06, MCHG07, MCHG08, MCHG13, MCHG16, and MCHG17 were qualified (J), estimated. Field duplicate imprecision was reported for mercury in the unfiltered aqueous sample pair MCHG07 and MCHG08, and positive results for this element in the above samples were also qualified (J). Field duplicate imprecision was reported for aluminum, beryllium, magnesium, and manganese in the sediment pair MCHG10 and MCHG11, and positive results for these elements in the sediment samples MCHG09, MCHG10, MCHG11, MCHG18, and MCHG19 were qualified (J), estimated.

- Graphite furnace atomic absorption (GFAA) post-digestion spike (PDS) recovery was less than 85 percent for arsenic in samples MCHG07 and MCHG16. These positive results were qualified as estimated (J).

- Because of low matrix spike recovery (less than 75 percent) for antimony in sediment sample MCHG18, detection limits for antimony in sediment samples MCHG09, MCHG10, MCHG11, MCHG18, and MCHG19 were considered to be biased low and may be higher than reported.

### 5.4.5 Notes

- Results were validated according to the National Functional Guidelines for Inorganic Data Validation, with Regional Modifications. This report has been formatted to address issues directly affecting data usability at the subject site. Support data are included as an attachment. (Issues pertaining to laboratory contractual compliance are addressed in the Regional Data Assessment Forms directed toward the Technical Project Officer.)

Report prepared by (b) (4)(b) (4)(b) (4) (b) (4)
(215) 971-0900

Report reviewed by (b) (4) (b) (4)
(215) 971-0900

# TABLE 1A
## SUMMARY OF QUALIFIERS ON DATA SUMMARY AFTER DATA VALIDATION

| ANALYTE | SAMPLES AFFECTED | POSITIVE VALUES | BIAS | COMMENTS* |
|---|---|---|---|---|
| Al | MCHG06 and MCHG17 | B | High | A (185 ug/l) |
| | MCHG23, MCHG24, and MCHG25 | B | High | B (201.5 ug/l) |
| Sb | MCHG16 and MCHG24 | B | High | A (96.5 ug/l) |
| Cr | MCHG16 | B | High | A (35.5 ug/l) |
| Co | MCHG05, MCHG13, MCHG24, and MCHG25 | B | High | A (15 ug/l) |
| Fe | MCHG23, MCHG24, and MCHG25 | B | High | B (228.5 ug/l) |
| Pb | MCHG05, MCHG06, MCHG07, MCHG13, MCHG16, MCHG17, and MCHG25 | B | High | B (28.5 ug/l) |
| Ni | MCHG07, MCHG08, and MCHG16 | B | High | A (23.95 ug/l) |
| K | MCHG25 | B | High | B (14,650 ug/l) |
| Ag | MCHG09, MCHG18, MCHG19, MCHG20, MCHG21, and MCHG22 | B | High | A (18.5 ug/l) |
| Na | MCHG09, MCHG19, MCHG20, MCHG21, and MCHG22 | B | High | A (557 ug/l) |
| Tl | MCHG18, MCHG19, MCHG21, and MCHG22 | B | High | A (28 ug/l) |
| V | MCHG07, MCHG08, and MCHG16 | B | High | A (15 ug/l) |
| Zn | MCHG05, MCHG08, MCHG13, MCHG23, MCHG24, and MCHG25 | B | High | A (53.65 ug/l) |
| Al | MCHG09, MCHG10, MCHG11, MCHG18, and MCHG19 | J | --- | C (80 percent) |
| As | MCHG07 and MCHG16 | J | --- | D (83 percent) |
| | MCHG21 | J | --- | E (0.9911) |
| Be | MCHG09, MCHG10, MCHG11, MCHG18, and MCHG19 | J | --- | C (105 percent) |

*Comments are defined in Table 1B.

(Red)

## TABLE 1A (continued)
## SUMMARY OF QUALIFIERS ON DATA SUMMARY
## AFTER DATA VALIDATION

| ANALYTE | SAMPLES AFFECTED | POSITIVE VALUES | BIAS | COMMENTS* |
|---|---|---|---|---|
| Se | MCHG11 | L | Low | F (212 percent; 28 ug/l)<br>G (26.8 percent)<br>E (0.9895) |
| | MCHG18 | L | Low | F (212 percent; 28 ug/l)<br>G (26.8 percent)<br>E (0.9906) |
| | MCHG20, MCHG21, and MCHG22 | K | High | F (212 percent; 28 ug/l) |
| Cu | MCHG01, MCHG02, MCHG05, MCHG06, MCHG07, MCHG08, MCHG13, MCHG16, and MCHG17 | J | --- | H (54.7 percent)<br>C (69.3 percent) |
| Mg | MCHG09, MCHG10, MCHG11, MCHG18, and MCHG19 | J | --- | C (104.3 percent) |
| Mn | MCHG09, MCHG10, MCHG11, MCHG18, and MCHG19 | J | --- | C (114.9 percent) |
| Hg | MCHG01, MCHG02, MCHG07, and MCHG17 | J | --- | C (67.9 percent) |

*Comments are defined in Table 1B.

(Rpd)

# TABLE 1B
# CODES USED IN COMMENTS COLUMN

A = Laboratory blank contamination - Results less than five times the maximum blank contamination (the action level), adjusted for matrix and dilutions, were qualified (B). The action level is shown in parentheses.

B = Field blank contamination - Results less than five times the maximum blank contamination (the action level), adjusted for matrix and dilutions, were qualified (B), except for lead in solid samples (see narrative). The action level is shown in parentheses.

C = Field duplicate imprecision - Positive results in the appropriate matrices were qualified (J), estimated, because relative percent differences (RPDs) were greater than 40 percent (aqueous) or 60 percent (solid). The RPD is shown in parentheses.

D = GFAA PDS recovery - Positive results for which the GFAA PDS recovery was less than 85 percent were qualified (J), estimated. The recovery is shown in parentheses.

E = MSA correlation coefficient - Positive results for which the MSA correlation coefficient was less than 0.995 were qualified (J), estimated, unless also affected by other factors. The correlation coefficient is shown in parentheses.

F = High CRDL standard recovery - Positive results for which the CRDL standard recovery exceeded 125 percent and the results were less than five times the difference between the true and observed values were qualified (K), biased high, or (L), biased low, if also affected by low matrix spike recovery. The maximum recovery and five times the difference between the true and observed values are shown in parentheses.

G = Low matrix spike recovery - Positive results for which the matrix spike recovery fell below 75 percent were qualified (L), biased low. Matrix spike recovery is shown in parentheses.

H = Laboratory duplicate imprecision - Positive results in unfiltered aqueous samples were qualified (J), estimated, because RPDs were greater than 40 percent. The RPD is shown in parentheses.

## 5.5 INORGANIC DATA VALIDATION REPORT: SAS CASE NUMBER 7453-C

### 5.5.1 Overview

The set of samples for SAS 7453-C contained three solid waste samples that were analyzed through the CLP Special Analytical Services (SAS) by Precision Analytical Labs (PRECIS).

### 5.5.2 Summary

The samples were analyzed by the March 1990 SOW, with the addition of grinding the samples until sample material would pass through a no. 10 sieve. All analytes were successfully analyzed in all samples. Areas of concern with respect to data usability are listed according to the seriousness of the problem. These include the following items.

### 5.5.3 Major Issues

- The matrix spike recovery for cyanide in sample MCHG12 is less than 25 percent; this result was qualified (L), biased extremely low. Because the three waste samples in this case consisted of three different types of material, matrix-specific effects were not applied to any other samples.

- Because of extremely low matrix spike recovery (less than 30 percent) for antimony in MCHG12, the detection capability for antimony in this sample is considered unreliable. The matrix spike recovery for selenium in MCHG12 was also very low (less than 30 percent); the result may be biased low, although it was previously qualified (B), and no additional qualifications have been made

### 5.5.4 Minor Issues

- Because of laboratory blank contamination by beryllium, cadmium, nickel, selenium, and silver, positive results for these metals less than five times the maximum blank concentration have been qualified (B) and are considered to be false positives.

- For solid sample MCHG12, serial dilution percent differences exceeded 10 percent for aluminum, calcium, chromium, iron, magnesium, and manganese. Because of this imprecision, these positive results were qualified (J), estimated.

- GFAA PDS recovery was less than 85 percent for thallium in sample MCHG03 and greater than 125 percent for lead in MCHG12. These positive results were qualified as estimated (J).

- Negative zinc results with absolute values greater than both the instrument detection limit (IDL) and the CRDL were reported in every initial calibration blank, several continuing calibration blanks, and the preparation blank. The zinc results were considered to be biased low and have been qualified (L).

- Because of low matrix spike recovery (less than 75 percent) and GFAA PDS recovery (less than 85 percent) for thallium in sample MCHG12, sample-specific matrix suppression was suspected. The detection limit for thallium in this sample was considered to be biased low and may be higher than reported.

- Because of low matrix spike recovery (less than 75 percent) for silver in sample MCHG12, the detection limit in this sample was considered to be biased low and may be higher than reported.

### 5.5.5 Notes

- Because the majority of diluted results exceed undiluted results for inductively coupled plasma (ICP) serial dilution, these results may be slightly higher than reported due to matrix effects. However, this potential effect was not definitive enough to warrant qualification of the data.

Site Name: Phillips Landfill
Project No.: 3738-06 ORIGINAL (Red)

The results were validated according to the National Functional Guidelines for Inorganic Data Validation, with Regional Modifications. This report has been formatted to address issues directly affecting data usability at the subject site. Support data are included as an attachment. (Issues pertaining to laboratory contractual compliance, such as presentation of GFAA data, are addressed in the Regional Data Assessment Forms directed toward the Technical Project Officer.)

Report prepared by (b) (4)(b) (4) (215) 971-0900 (b) (4)

Report reviewed by (b) (4) (215) 971-0900 (b) (4)

# TABLE 1A
## SUMMARY OF QUALIFIERS ON DATA SUMMARY AFTER DATA VALIDATION

| ANALYTE | SAMPLES AFFECTED | POSITIVE VALUES | BIAS | COMMENTS* |
|---|---|---|---|---|
| Be | MCHG03 and MCHG12 | B | High | A (16.5 ug/l) |
| Cd | MCHG03 | B | High | A (31 ug/l) |
| Ni | MCHG03, MCHG04, and MCHG12 | B | High | A (1,289 ug/l) |
| Se | MCHG12 | B | --- | A (9 ug/l) |
| Ag | MCHG03 | B | High | A (240 ug/l) |
| Al | MCHG12 | J | --- | B (11.9 percent) |
| Ca | MCHG12 | J | --- | B (14.2 percent) |
| Cr | MCHG12 | J | --- | B (15.1 percent) |
| Fe | MCHG12 | J | --- | B (15.1 percent) |
| Pb | MCHG12 | J | --- | C (126.6 percent) |
| Mg | MCHG12 | J | --- | B (12.8 percent) |
| Mn | MCHG12 | J | --- | B (14.2 percent) |
| Tl | MCHG03 | J | --- | D (84.9 percent) |
| Zn | MCHG03, MCHG04, and MCHG12 | L | Low | E (-28.8) |
| Cyanide | MCHG12 | L | Low | F (25 percent) |

*Comments are defined in Table 1B

# TABLE 1B
## CODES USED IN COMMENTS COLUMN

A = Laboratory blank contamination - Results less than five times the maximum blank contamination (the action level), adjusted for matrix and dilutions, were qualified (B). The action level is shown in parentheses.

B = Serial dilution imprecision - Positive results for several elements in sample MCHG12 were qualified (J), estimated, where serial dilution percent difference (%D) exceeded 10 percent and the initial sample result was greater than 50 times the IDL. The %D is shown in parentheses.

C = GFAA PDS recovery - Positive results for which the GFAA PDS recovery was greater than 125 percent were qualified (J), estimated. The recovery is shown in parentheses.

D = GFAA PDS recovery - Positive results for which the GFAA PDS recovery was less than 85 percent were qualified (J), estimated. The recovery is shown in parentheses.

E = Negative blank contamination - Negative zinc results with absolute values greater than both the IDL and the CRDL were reported in every initial calibration blank, several continuing calibration blanks, and the preparation blank. The zinc results were considered to be biased low and have been qualified (L). The negative blank with the highest absolute value is shown in parentheses.

F = Low matrix spike recovery - Positive results for which the matrix spike recovery fell below 75 percent were qualified (L), biased low. Matrix spike recovery is shown in parentheses.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CGG70

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: _____ SDG No.: CGG70

Matrix: (soil/water) WATER Lab Sample ID: 9207956

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: V1516

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: not dec. ____ Date Analyzed: 08/24/92

GC Column: RTX-502.2 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

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 | 10 | U |
| 67-64-1 | Acetone | 10 | U |
| 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 | 10 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 10 | U |
| 56-23-5 | Carbon Tetrachloride | 10 | 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 | 10 | U |
| 591-78-6 | 2-Hexanone | 10 | 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 | Xylene (total) | 10 | U |

1E

# VOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

CGG70

Lab Name: HYGIENIC LAB  Contract: 68-D0-0154

Lab Code: IOWA  Case No.: 18622  SAS No.: _____  SDG No.: CGG70

Matrix: (soil/water) WATER  Lab Sample ID: 9207956

Sample wt/vol: 5.0 (g/mL) ML  Lab File ID: V1516

Level: (low/med) LOW  Date Received: 08/20/92

% Moisture: not dec. _____  Date Analyzed: 08/24/92

GC Column: RTX-502.2 ID: 0.530 (mm)  Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)  Soil Aliquot Volume: _____(uL)

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

EPA SAMPLE NO.

CGG71

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: _____ SDG No.: CGG70

Matrix: (soil/water) WATER Lab Sample ID: 9207957

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: V1517

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: not dec. ____ Date Analyzed: 08/24/92

GC Column: RTX-502.2 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

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 | 10 | U |
| 67-64-1 | Acetone | 10 | U |
| 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 | 10 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 10 | U |
| 56-23-5 | Carbon Tetrachloride | 10 | 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 | 10 | U |
| 591-78-6 | 2-Hexanone | 10 | 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 | Xylene (total) | 1 | J |

ORIGINAL

1E

# VOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

CGG71

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: _____ SDG No.: CGG70

Matrix: (soil/water) WATER Lab Sample ID: 9207957

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: V1517

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: not dec. ____ Date Analyzed: 08/24/92

GC Column: RTX-502.2 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | ( |
|---|---|---|---|---|

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CGG74

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: _____ SDG No.: CGG70

Matrix: (soil/water) WATER Lab Sample ID: 9207958

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: V1518

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: not dec. ____ Date Analyzed: 08/24/92

GC Column: RTX-502.2 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

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 | 10 | U |
| 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 | 10 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 10 | U |
| 56-23-5 | Carbon Tetrachloride | 10 | 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 | 10 | U |
| 591-78-6 | 2-Hexanone | 10 | 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 | Xylene (total) | 10 | U |

1E

# VOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

CGG74

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: _____ SDG No.: CGG70

Matrix: (soil/water) WATER Lab Sample ID: 9207958

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: V1518

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: not dec. ____ Date Analyzed: 08/24/92

GC Column: RTX-502.2 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

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

EPA SAMPLE NO.

CGG75

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: _____ SDG No.: CGG70

Matrix: (soil/water) WATER Lab Sample ID: 9207959

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: V1519

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: not dec. ____ Date Analyzed: 08/24/92

GC Column: RTX-502.2 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

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 | 2 | J |
| 67-64-1 | Acetone | 10 | U |
| 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 | 10 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 10 | U |
| 56-23-5 | Carbon Tetrachloride | 10 | 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 | 10 | U |
| 591-78-6 | 2-Hexanone | 10 | 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 | Xylene (total) | 10 | U |

1E

# VOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

CGG75

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: _____ SDG No.: CGG70

Matrix: (soil/water) WATER Lab Sample ID: 9207959

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: V1519

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: not dec. ____ Date Analyzed: 08/24/92

GC Column: RTX-502.2 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

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

EPA SAMPLE NO.

CGG76

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: _____ SDG No.: CGG70

Matrix: (soil/water) WATER Lab Sample ID: 9207960

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: V1520

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: not dec. ____ Date Analyzed: 08/24/92

GC Column: RTX-502.2 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

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 | 10 | U |
| 67-64-1 | Acetone | 10 | |
| 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 | 10 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 10 | U |
| 56-23-5 | Carbon Tetrachloride | 10 | 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 | 10 | U |
| 591-78-6 | 2-Hexanone | 10 | 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 | Xylene (total) | 10 | U |

1E

# VOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

CGG76

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: _____ SDG No.: CGG70

Matrix: (soil/water) WATER Lab Sample ID: 9207960

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: V1520

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: not dec. ____ Date Analyzed: 08/24/92

GC Column: RTX-502.2 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

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

EPA SAMPLE NO.

CGG77

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: _____ SDG No.: CGG70

Matrix: (soil/water) WATER Lab Sample ID: 9207961

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: V1521

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: not dec. ____ Date Analyzed: 08/24/92

GC Column: RTX-502.2 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

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 | 10 | U |
| 67-64-1 | Acetone | 10 | |
| 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 | 10 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 10 | U |
| 56-23-5 | Carbon Tetrachloride | 10 | 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 | 10 | U |
| 591-78-6 | 2-Hexanone | 10 | 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 | Xylene (total) | 10 | U |

1E

# VOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

CGG77

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: _____ SDG No.: CGG70

Matrix: (soil/water) WATER Lab Sample ID: 9207961

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: V1521

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: not dec. ____ Date Analyzed: 08/24/92

GC Column: RTX-502.2 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

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

EPA SAMPLE NO.

CGG78

Lab Name: HYGIENIC LAB Contract: 88-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: _____ SDG No.: CGG70

Matrix: (soil/water) SOIL Lab Sample ID: 9207962

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V1532

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: not dec. 22 Date Analyzed: 08/26/92

GC Column: RTX-502.2 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

| 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 | 4 | BJ |
| 67-64-1 | Acetone | 13 | U |
| 75-15-0 | Carbon Disulfide | 13 | U |
| 75-35-4 | 1,1-Dichloroethene | 13 | U |
| 75-34-3 | 1,1-Dichloroethane | 13 | U |
| 540-59-0 | 1,2-Dichloroethene (total) | 13 | U |
| 67-66-3 | Chloroform | 13 | U |
| 107-06-2 | 1,2-Dichloroethane | 13 | U |
| 78-93-3 | 2-Butanone | 13 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 13 | U |
| 56-23-5 | Carbon Tetrachloride | 13 | U |
| 75-27-4 | Bromodichloromethane | 13 | U |
| 78-87-5 | 1,2-Dichloropropane | 13 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 13 | U |
| 79-01-6 | Trichloroethene | 13 | U |
| 124-48-1 | Dibromochloromethane | 13 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 13 | U |
| 71-43-2 | Benzene | 13 | U |
| 10061-02-6 | trans-1,3-Dichloropropene | 13 | U |
| 75-25-2 | Bromoform | 13 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 13 | U |
| 591-78-6 | 2-Hexanone | 3 | J |
| 127-18-4 | Tetrachloroethene | 13 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 13 | U |
| 108-88-3 | Toluene | 13 | U |
| 108-90-7 | Chlorobenzene | 13 | U |
| 100-41-4 | Ethylbenzene | 13 | U |
| 100-42-5 | Styrene | 13 | U |
| 1330-20-7 | Xylene (total) | 13 | U |

1E

# VOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

CGG78

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: _____ SDG No.: CGG70

Matrix: (soil/water) SOIL Lab Sample ID: 9207962

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V1532

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: not dec. 22 Date Analyzed: 08/26/92

GC Column: RTX-502.2 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CGG82

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: _____ SDG No.: CGG70

Matrix: (soil/water) WATER Lab Sample ID: 9207965

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: V1522

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: not dec. ____ Date Analyzed: 08/24/92

GC Column: RTX-502.2 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

| 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 | 10 | U |
| 67-64-1 | Acetone | 10 | U |
| 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 | 10 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 10 | U |
| 56-23-5 | Carbon Tetrachloride | 10 | 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 | 10 | U |
| 591-78-6 | 2-Hexanone | 10 | 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 | Xylene (total) | 10 | U |

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

CGG82

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: _____ SDG No.: CGG70

Matrix: (soil/water) WATER Lab Sample ID: 9207965

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: V1522

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: not dec. ____ Date Analyzed: 08/24/92

GC Column: RTX-502.2 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | C |
|---|---|---|---|---|
| | | | | |

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CGG83

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: _____ SDG No.: CGG70

Matrix: (soil/water) WATER Lab Sample ID: 9207966

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: V1523

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: not dec. ____ Date Analyzed: 08/24/92

GC Column: RTX-502.2 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

| 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 | 10 | U |
| 67-64-1 | Acetone | 10 | U |
| 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 | 10 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 10 | U |
| 56-23-5 | Carbon Tetrachloride | 10 | 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 | 10 | U |
| 591-78-6 | 2-Hexanone | 10 | 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 | Xylene (total) | 10 | U |

1E

# VOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

CGG83

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: _____ SDG No.: CGG70

Matrix: (soil/water) WATER Lab Sample ID: 9207966

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: V1523

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: not dec. ____ Date Analyzed: 08/24/92

GC Column: RTX-502.2 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

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

EPA SAMPLE NO.

CGG84

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: _____ SDG No.: CGG70

Matrix: (soil/water) WATER Lab Sample ID: 9207967

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: V1524

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: not dec. ____ Date Analyzed: 08/24/92

GC Column: RTX-502.2 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

| 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 | 10 | U |
| 67-64-1 | Acetone | 10 | U |
| 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 | 10 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 10 | U |
| 56-23-5 | Carbon Tetrachloride | 10 | 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 | 10 | U |
| 591-78-6 | 2-Hexanone | 10 | 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 | Xylene (total) | 10 | U |

1E

# VOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

CGG84

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: _____ SDG No.: CGG70

Matrix: (soil/water) WATER Lab Sample ID: 9207967

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: V1524

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: not dec. ____ Date Analyzed: 08/24/92

GC Column: RTX-502.2 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

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

EPA SAMPLE NO.

CGG85

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: _____ SDG No.: CGG70

Matrix: (soil/water) WATER Lab Sample ID: 9207968

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: V1525

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: not dec. ____ Date Analyzed: 08/24/92

GC Column: RTX-502.2 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

| 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 | 10 | U |
| 67-64-1 | Acetone | 10 | U |
| 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 | 10 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 10 | U |
| 56-23-5 | Carbon Tetrachloride | 10 | 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 | 10 | U |
| 591-78-6 | 2-Hexanone | 10 | 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 | Xylene (total) | 10 | U |

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

CGG85

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: _____ SDG No.: CGG70

Matrix: (soil/water) WATER Lab Sample ID: 9207968

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: V1525

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: not dec. ____ Date Analyzed: 08/24/92

GC Column: RTX-502.2 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | DICHLOROBENZENE ISOMER | 30.23 | 8 | JN |

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CGG86

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: _____ SDG No.: CGG70

Matrix: (soil/water) SOIL Lab Sample ID: 9207969

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V1542

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: not dec. 32 Date Analyzed: 08/27/92

GC Column: RTX-502.2 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 15 | U |
| 74-83-9 | Bromomethane | 15 | U |
| 75-01-4 | Vinyl Chloride | 15 | U |
| 75-00-3 | Chloroethane | 15 | U |
| 75-09-2 | Methylene Chloride | 3 | J |
| 67-64-1 | Acetone | 33 | B |
| 75-15-0 | Carbon Disulfide | 15 | U |
| 75-35-4 | 1,1-Dichloroethene | 15 | U |
| 75-34-3 | 1,1-Dichloroethane | 15 | U |
| 540-59-0 | 1,2-Dichloroethene (total) | 15 | U |
| 67-66-3 | Chloroform | 15 | U |
| 107-06-2 | 1,2-Dichloroethane | 15 | U |
| 78-93-3 | 2-Butanone | 4 | J |
| 71-55-6 | 1,1,1-Trichloroethane | 15 | U |
| 56-23-5 | Carbon Tetrachloride | 15 | U |
| 75-27-4 | Bromodichloromethane | 15 | U |
| 78-87-5 | 1,2-Dichloropropane | 15 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 15 | U |
| 79-01-6 | Trichloroethene | 15 | U |
| 124-48-1 | Dibromochloromethane | 15 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 15 | U |
| 71-43-2 | Benzene | 15 | U |
| 10061-02-6 | trans-1,3-Dichloropropene | 15 | U |
| 75-25-2 | Bromoform | 15 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 15 | U |
| 591-78-6 | 2-Hexanone | 15 | U |
| 127-18-4 | Tetrachloroethene | 15 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 15 | U |
| 108-88-3 | Toluene | 15 | U |
| 108-90-7 | Chlorobenzene | 15 | U |
| 100-41-4 | Ethylbenzene | 15 | U |
| 100-42-5 | Styrene | 15 | U |
| 1330-20-7 | Xylene (total) | 15 | U |

1E

# VOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

CGG86

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: _____ SDG No.: CGG70

Matrix: (soil/water) SOIL Lab Sample ID: 9207989

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V1542

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: not dec. 32 Date Analyzed: 08/27/92

GC Column: RTX-502.2 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 1

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | DICHLOROBENZENE ISOMER | 30.23 | 10 | JN |

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CGG87

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18822 SAS No.: _____ SDG No.: CGG70

Matrix: (soil/water) SOIL Lab Sample ID: 9207970

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V1534

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: not dec. 18 Date Analyzed: 08/26/92

GC Column: RTX-502.2 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

| 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 | 12 | U |
| 67-64-1 | Acetone | 12 | U |
| 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 | 12 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 12 | U |
| 56-23-5 | Carbon Tetrachloride | 12 | 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 | 12 | U |
| 591-78-6 | 2-Hexanone | 12 | 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 | Xylene (total) | 12 | U |

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

CGG87

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: _____ SDG No.: CGG70

Matrix: (soil/water) SOIL Lab Sample ID: 9207970

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V1534

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: not dec. 18 Date Analyzed: 08/26/92

GC Column: RTX-502.2 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|

1A

# VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CGG88

Lab Name: HYGIENIC LAB  Contract: 68-D0-0154

Lab Code: IOWA  Case No.: 18622  SAS No.: _____  SDG No.: CGG70

Matrix: (soil/water) SOIL  Lab Sample ID: 9207971

Sample wt/vol: 5.0 (g/mL) G  Lab File ID: V1533

Level: (low/med) LOW  Date Received: 08/20/92

% Moisture: not dec. 24  Date Analyzed: 08/26/92

GC Column: RTX-502.2 ID: 0.530 (mm)  Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)  Soil Aliquot Volume: _____ (uL)

| 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 | 3 | BJ |
| 67-64-1 | Acetone | 13 | U |
| 75-15-0 | Carbon Disulfide | 13 | U |
| 75-35-4 | 1,1-Dichloroethene | 13 | U |
| 75-34-3 | 1,1-Dichloroethane | 13 | U |
| 540-59-0 | 1,2-Dichloroethene (total) | 13 | U |
| 67-66-3 | Chloroform | 13 | U |
| 107-06-2 | 1,2-Dichloroethane | 13 | U |
| 78-93-3 | 2-Butanone | 13 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 13 | U |
| 56-23-5 | Carbon Tetrachloride | 13 | U |
| 75-27-4 | Bromodichloromethane | 13 | U |
| 78-87-5 | 1,2-Dichloropropane | 13 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 13 | U |
| 79-01-6 | Trichloroethene | 13 | U |
| 124-48-1 | Dibromochloromethane | 13 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 13 | U |
| 71-43-2 | Benzene | 13 | U |
| 10061-02-6 | trans-1,3-Dichloropropene | 13 | U |
| 75-25-2 | Bromoform | 13 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 13 | U |
| 591-78-6 | 2-Hexanone | 13 | U |
| 127-18-4 | Tetrachloroethene | 13 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 13 | U |
| 108-88-3 | Toluene | 13 | U |
| 108-90-7 | Chlorobenzene | 13 | U |
| 100-41-4 | Ethylbenzene | 13 | U |
| 100-42-5 | Styrene | 5 | J |
| 1330-20-7 | Xylene (total) | 13 | U |

1E

# VOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

CGG88

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: _____ SDG No.: CGG70

Matrix: (soil/water) SOIL Lab Sample ID: 9207971

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V1533

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: not dec. 24 Date Analyzed: 08/26/92

GC Column: RTX-502.2 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CGG89

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: _____ SDG No.: CGG70

Matrix: (soil/water) SOIL Lab Sample ID: 9207972

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V1543

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: not dec. 24 Date Analyzed: 08/27/92

GC Column: RTX-502.2 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

| 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 | 8 | J |
| 67-64-1 | Acetone | 13 | U |
| 75-15-0 | Carbon Disulfide | 13 | U |
| 75-35-4 | 1,1-Dichloroethene | 13 | U |
| 75-34-3 | 1,1-Dichloroethane | 13 | U |
| 540-59-0 | 1,2-Dichloroethene (total) | 13 | U |
| 67-66-3 | Chloroform | 13 | U |
| 107-06-2 | 1,2-Dichloroethane | 13 | U |
| 78-93-3 | 2-Butanone | 13 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 13 | U |
| 56-23-5 | Carbon Tetrachloride | 13 | U |
| 75-27-4 | Bromodichloromethane | 13 | U |
| 78-87-5 | 1,2-Dichloropropane | 13 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 13 | U |
| 79-01-6 | Trichloroethene | 13 | U |
| 124-48-1 | Dibromochloromethane | 13 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 13 | U |
| 71-43-2 | Benzene | 13 | U |
| 10061-02-6 | trans-1,3-Dichloropropene | 13 | U |
| 75-25-2 | Bromoform | 13 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 13 | U |
| 591-78-6 | 2-Hexanone | 13 | U |
| 127-18-4 | Tetrachloroethene | 13 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 13 | U |
| 108-88-3 | Toluene | 13 | U |
| 108-90-7 | Chlorobenzene | 13 | U |
| 100-41-4 | Ethylbenzene | 13 | U |
| 100-42-5 | Styrene | 13 | U |
| 1330-20-7 | Xylene (total) | 13 | U |

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

CGG89

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: _____ SDG No.: CGG70

Matrix: (soil/water) SOIL Lab Sample ID: 9207972

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V1543

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: not dec. 24 Date Analyzed: 08/27/92

GC Column: RTX-502.2 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| | | | | |

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CGG90

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: _____ SDG No.: CGG70

Matrix: (soil/water) SOIL Lab Sample ID: 9207973

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V1538

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: not dec. 28 Date Analyzed: 08/26/92

GC Column: RTX-502.2 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

| 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 | 14 | U |
| 67-64-1 | Acetone | 14 | 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 | 14 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 14 | U |
| 56-23-5 | Carbon Tetrachloride | 14 | 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 | 14 | U |
| 591-78-6 | 2-Hexanone | 14 | 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 | Xylene (total) | 14 | U |

1E

# VOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

CGG90

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: _____ SDG No.: CGG70

Matrix: (soil/water) SOIL Lab Sample ID: 9207973

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V1538

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: not dec. 26 Date Analyzed: 08/26/92

GC Column: RTX-502.2 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | |
|---|---|---|---|---|
| | | | | |

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CGG91

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: _____ SDG No.: CGG70

Matrix: (soil/water) WATER Lab Sample ID: 9207974

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: V1526

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: not dec. ____ Date Analyzed: 08/24/92

GC Column: RTX-502.2 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

| 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 | 10 | U |
| 67-64-1 | Acetone | 10 | U |
| 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 | 10 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 10 | U |
| 56-23-5 | Carbon Tetrachloride | 10 | 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 | 10 | U |
| 591-78-6 | 2-Hexanone | 10 | 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 | Xylene (total) | 10 | U |

1E

# VOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

CGG91

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: SDG No.: CGG70

Matrix: (soil/water) WATER Lab Sample ID: 9207974

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: V1526

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: not dec. ____ Date Analyzed: 08/24/92

GC Column: RTX-502.2 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | C |
|---|---|---|---|---|
| 1. | TRICHLOROBENZENE ISOMER | 21.68 | 11 | JN |

Relative Standard Deviation Worksheet

| Compound | Unspiked Sample CGG86 | MS CGG86MS | MSD CGG86MSD | Mean | Std Deviation | RSD | |
|---|---|---|---|---|---|---|---|
| Hep. epoxide | 2.5 | 2.8 | 3.4 | 2.9 | 0.458258 | 0.15802 | |
| 4,4'-DDD | 13 | 19 | 13 | 15 | 3.464102 | ~~0.23094~~ | 23% |
| Endo. sulfate | 1.5 | 1.4 | 6.6 | 3.166667 | 2.973774 | 0.939087 | |
| a-Chlordane | 8.8 | 11 | 6 | 8.6 | 2.505993 | 0.291395 | |
| c-Chlordane | 8.7 | 10 | 3.9 | 7.533333 | 3.212994 | 0.426504 | |
| Endo. II | ND | 8 | ND | 2.666667 | 4.618802 | ~~1.732051~~ | Indeterminate |
| 4,4'-DDE | ND | ND | 8.9 | 2.966667 | 5.138417 | ~~1.732051~~ | Indeterminate |

ND = Not detected

Ref. 5

7A

# VOLATILE CONTINUING CALIBRATION CHECK

Ref-6

Lab Name: HYGIENIC LAB Contract: 88-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: _____ SDG No.: CGG70

Instrument ID: 7001 Calibration date: 08/25/92 Time: 0857

Lab File ID: S1409 Init. Calib. Date(s): 08/21/92 08/21/92

Heated Purge: (Y/N) N Init. Calib. Times: 1208 1603

GC Column: RTX-502.2 ID: 0.530(mm)

No positives associated - no action.

| COMPOUND | RRF | RRF50 | MIN RRF | %D | MAX %D |
|---|---|---|---|---|---|
| Chloromethane | 0.629 | 0.537 | | 14.6 | |
| Bromomethane | 1.322 | 1.287 | 0.100 | 2.6 | 25.0 |
| Vinyl Chloride | 0.719 | 0.661 | 0.100 | 8.1 | 25.0 |
| Chloroethane | 0.501 | 0.507 | | -1.2 | |
| Methylene Chloride | 1.042 | 0.982 | | 5.8 | |
| Acetone | 0.123 | 0.099 | | 19.5 | |
| Carbon Disulfide | 2.393 | 2.373 | | 0.8 | |
| 1,1-Dichloroethene | 1.042 | 1.022 | 0.100 | 1.9 | 25.0 |
| 1,1-Dichloroethane | 1.897 | 1.813 | 0.200 | 4.4 | 25.0 |
| 1,2-Dichloroethene (total) | 1.187 | 1.203 | | -1.3 | |
| Chloroform | 3.064 | 2.862 | 0.200 | 6.6 | 25.0 |
| 1,2-Dichloroethane | 1.898 | 1.678 | 0.100 | 11.6 | 25.0 |
| 2-Butanone | 0.214 | 0.157 | | 26.6* | |
| 1,1,1-Trichloroethane | 0.807 | 0.752 | 0.100 | 6.8 | 25.0 |
| Carbon Tetrachloride | 0.865 | 0.824 | 0.100 | 4.7 | 25.0 |
| Bromodichloromethane | 0.802 | 0.763 | 0.200 | 4.9 | 25.0 |
| 1,2-Dichloropropane | 0.261 | 0.262 | | -0.4 | |
| cis-1,3-Dichloropropene | 0.410 | 0.414 | 0.200 | -1.0 | 25.0 |
| Trichloroethene | 0.508 | 0.508 | 0.300 | 0.0 | 25.0 |
| Dibromochloromethane | 0.781 | 0.753 | 0.100 | 3.6 | 25.0 |
| 1,1,2-Trichloroethane | 0.278 | 0.263 | 0.100 | 5.4 | 25.0 |
| Benzene | 0.640 | 0.646 | 0.500 | -0.9 | 25.0 |
| trans-1,3-Dichloropropene | 0.435 | 0.417 | 0.100 | 4.1 | 25.0 |
| Bromoform | 0.495 | 0.506 | 0.100 | -2.2 | 25.0 |
| 4-Methyl-2-Pentanone | 0.159 | 0.137 | | 13.8 | |
| 2-Hexanone | 0.101 | 0.090 | | 10.9 | |
| Tetrachloroethene | 0.597 | 0.624 | 0.200 | -4.5 | 25.0 |
| 1,1,2,2-Tetrachloroethane | 0.416 | 0.398 | 0.500 | 4.3 | 25.0 |
| Toluene | 1.016 | 1.030 | 0.400 | -1.4 | 25.0 |
| Chlorobenzene | 0.921 | 0.980 | 0.500 | -6.4 | 25.0 |
| Ethylbenzene | 0.386 | 0.404 | 0.100 | -4.7 | 25.0 |
| Styrene | 0.798 | 0.832 | 0.300 | -4.3 | 25.0 |
| Xylene (total) | 0.473 | 0.486 | 0.300 | -2.7 | 25.0 |
| Toluene-d8 | 1.072 | 0.981 | | 8.5 | |
| Bromofluorobenzene | 0.900 | 0.840 | 0.200 | 6.7 | 25.0 |
| 1,2-Dichloroethane-d4 | 1.710 | 1.379 | | 19.4 | |

All other compounds must meet a minimum RRF of 0.010.

FORM VII VOA 3/90

* No action necessary since RRF > 0.05

7A

# VOLATILE CONTINUING CALIBRATION CHECK

Ref 6

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: _____ SDG No.: CGG70

Instrument ID: 7001 Calibration date: 08/27/92 Time: 0949

Lab File ID: S1416 Init. Calib. Date(s): 08/25/92 08/25/92

Heated Purge: (Y/N) Y Init. Calib. Times: 1504 1742

GC Column: RTX-502.2 ID: 0.530(mm)

No positives associated - no action

| COMPOUND | RRF | RRF50 | MIN RRF | %D | MAX %D |
|---|---|---|---|---|---|
| Chloromethane | 0.243 | 0.146 | | 39.9 * | |
| Bromomethane | 0.658 | 0.579 | 0.100 | 12.0 | 25.0 |
| Vinyl Chloride | 0.301 | 0.225 | 0.100 | 25.2 * | 25.0 |
| Chloroethane | 0.275 | 0.254 | | 7.6 | |
| Methylene Chloride | 0.941 | 0.904 | | 3.9 | |
| Acetone | 0.286 | 0.242 | | 15.4 | |
| Carbon Disulfide | 2.007 | 1.918 | | 4.4 | |
| 1,1-Dichloroethene | 0.855 | 0.859 | 0.100 | -0.5 | 25.0 |
| 1,1-Dichloroethane | 1.588 | 1.568 | 0.200 | 1.3 | 25.0 |
| 1,2-Dichloroethene (total) | 1.030 | 1.050 | | -1.9 | |
| Chloroform | 2.442 | 2.445 | 0.200 | -0.1 | 25.0 |
| 1,2-Dichloroethane | 1.648 | 1.604 | 0.100 | 2.7 | 25.0 |
| 2-Butanone | 0.484 | 0.458 | | 5.4 | |
| 1,1,1-Trichloroethane | 0.660 | 0.675 | 0.100 | -2.3 | 25.0 |
| Carbon Tetrachloride | 0.706 | 0.723 | 0.100 | -2.4 | 25.0 |
| Bromodichloromethane | 0.709 | 0.717 | 0.200 | -1.1 | 25.0 |
| 1,2-Dichloropropane | 0.260 | 0.271 | | -4.2 | |
| cis-1,3-Dichloropropene | 0.398 | 0.431 | 0.200 | -8.3 | 25.0 |
| Trichloroethene | 0.473 | 0.505 | 0.300 | -6.8 | 25.0 |
| Dibromochloromethane | 0.821 | 0.855 | 0.100 | -4.1 | 25.0 |
| 1,1,2-Trichloroethane | 0.345 | 0.372 | 0.100 | -7.8 | 25.0 |
| Benzene | 0.614 | 0.654 | 0.500 | -6.5 | 25.0 |
| trans-1,3-Dichloropropene | 0.459 | 0.498 | 0.100 | -8.5 | 25.0 |
| Bromoform | 0.739 | 0.749 | 0.100 | -1.4 | 25.0 |
| 4-Methyl-2-Pentanone | 0.388 | 0.400 | | -3.1 | |
| 2-Hexanone | 0.281 | 0.289 | | -2.8 | |
| Tetrachloroethene | 0.573 | 0.595 | 0.200 | -3.8 | 25.0 |
| 1,1,2,2-Tetrachloroethane | 0.723 | 0.755 | 0.500 | -4.4 | 25.0 |
| Toluene | 0.973 | 1.042 | 0.400 | -7.1 | 25.0 |
| Chlorobenzene | 0.918 | 0.983 | 0.500 | -7.1 | 25.0 |
| Ethylbenzene | 0.373 | 0.392 | 0.100 | -5.1 | 25.0 |
| Styrene | 0.806 | 0.815 | 0.300 | -1.1 | 25.0 |
| Xylene (total) | 0.456 | 0.474 | 0.300 | -3.9 | 25.0 |
| Toluene-d8 | 1.000 | 0.997 | | 0.3 | |
| Bromofluorobenzene | 0.884 | 0.842 | 0.200 | 4.8 | 25.0 |
| 1,2-Dichloroethane-d4 | 1.460 | 1.336 | | 8.5 | |

All other compounds must meet a minimum RRF of 0.010.

FORM VII VOA 3/90



* No action necessary since RRF > 0.05

6B

# SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Ref. 7

Lab Name: HYGIENIC LAB  Contract: 68-D0-0154

Lab Code: IOWA  Case No.: 18622  SAS No.: _____  SDG No.: CGG70

Instrument ID: 7002  Calibration Date(s): 08/24/92  08/24/92

Calibration Times: 1610  2005

No positives associated - no action

LAB FILE ID:  RRF20 = S2764  RRF50 = S2763

RRF80 = S2765  RRF120= S2766  RRF160= S2767

| COMPOUND | RRF20 | RRF50 | RRF80 | RRF120 | RRF160 | $\overline{RRF}$ | % RSD |
|---|---|---|---|---|---|---|---|
| Phenol * | 1.976 | 1.845 | 1.747 | 1.741 | 1.788 | 1.819 | 5.3* |
| bis(2-Chloroethyl)ether * | 1.661 | 1.486 | 1.409 | 1.389 | 1.365 | 1.462 | 8.2* |
| 2-Chlorophenol * | 1.500 | 1.377 | 1.316 | 1.312 | 1.342 | 1.369 | 5.7* |
| 1,3-Dichlorobenzene * | 1.476 | 1.369 | 1.341 | 1.331 | 1.305 | 1.364 | 4.9* |
| 1,4-Dichlorobenzene * | 1.545 | 1.484 | 1.388 | 1.350 | 1.399 | 1.433 | 5.5* |
| 1,2-Dichlorobenzene * | 1.458 | 1.371 | 1.255 | 1.211 | 1.231 | 1.305 | 8.1* |
| 2-Methylphenol * | 1.379 | 1.321 | 1.286 | 1.271 | 1.303 | 1.312 | 2* |
| 2,2'-oxybis(1-Chloropropane | 2.480 | 2.374 | 2.254 | 2.335 | 2.307 | 2.350 | 6 |
| 4-Methylphenol * | 1.498 | 1.438 | 1.368 | 1.384 | 1.392 | 1.416 | 3.7* |
| N-Nitroso-di-n-propylamine * | 1.445 | 1.415 | 1.340 | 1.087 | 0.999 | 1.257 | 16.0* |
| Hexachloroethane * | 0.707 | 0.669 | 0.639 | 0.666 | 0.661 | 0.668 | 3.7* |
| Nitrobenzene * | 0.458 | 0.460 | 0.419 | 0.422 | 0.405 | 0.433 | 5.7* |
| Isophorone * | 0.943 | 0.903 | 0.834 | 0.841 | 0.797 | 0.864 | 6.8* |
| 2-Nitrophenol * | 0.177 | 0.187 | 0.184 | 0.192 | 0.191 | 0.186 | 3.3* |
| 2,4-Dimethylphenol * | 0.371 | 0.360 | 0.330 | 0.333 | 0.329 | 0.345 | 5.7* |
| bis(2-Chloroethoxy)methane * | 0.507 | 0.480 | 0.462 | 0.460 | 0.440 | 0.470 | 5.4* |
| 2,4-Dichlorophenol * | 0.294 | 0.283 | 0.271 | 0.276 | 0.264 | 0.278 | 4.1* |
| 1,2,4-Trichlorobenzene * | 0.323 | 0.313 | 0.289 | 0.292 | 0.272 | 0.298 | 6.8* |
| Naphthalene * | 1.096 | 1.031 | 0.933 | 0.943 | 0.895 | 0.980 | 8.4* |
| 4-Chloroaniline | 0.466 | 0.453 | 0.419 | 0.401 | 0.364 | 0.421 | 9.7 |
| Hexachlorobutadiene | 0.207 | 0.195 | 0.178 | 0.176 | 0.163 | 0.184 | 9.4 |
| 4-Chloro-3-methylphenol * | 0.398 | 0.390 | 0.369 | 0.370 | 0.341 | 0.374 | 5.9* |
| 2-Methylnaphthalene * | 0.742 | 0.674 | 0.637 | 0.626 | 0.591 | 0.654 | 8.8* |
| Hexachlorocyclopentadiene | 0.305 | 0.333 | 0.327 | 0.334 | 0.322 | 0.324 | 6 |
| 2,4,6-Trichlorophenol * | 0.402 | 0.389 | 0.367 | 0.362 | 0.366 | 0.377 | 4.6* |
| 2,4,5-Trichlorophenol * | | 0.375 | 0.362 | 0.365 | 0.387 | 0.372 | 3.0* |
| 2-Chloronaphthalene * | 1.169 | 1.059 | 0.995 | 1.021 | 0.991 | 1.047 | 7.0* |
| 2-Nitroaniline | | 0.547 | 0.512 | 0.523 | 0.518 | 0.525 | 2.9 |
| Dimethylphthalate | 1.526 | 1.388 | 1.326 | 1.335 | 1.319 | 1.379 | 6.3 |
| Acenaphthylene * | 2.008 | 1.870 | 1.760 | 1.730 | 1.697 | 1.813 | 7.0* |
| 2,6-Dinitrotoluene * | 0.336 | 0.343 | 0.339 | 0.356 | 0.339 | 0.343 | 2.3* |
| 3-Nitroaniline | | 0.379 | 0.378 | 0.391 | 0.394 | 0.386 | 2.1 |
| Acenaphthene * | 1.403 | 1.254 | 1.199 | 1.198 | 1.164 | 1.244 | 7.6* |
| 2,4-Dinitrophenol | | 0.039 | 0.091 | 0.152 | 0.167 | 0.112 | 52.6 |
| 4-Nitrophenol | | 0.216 | 0.213 | 0.233 | 0.235 | 0.224 | 5.1 |
| Dibenzofuran * | 1.919 | 1.734 | 1.625 | 1.650 | 1.629 | 1.711 | 7.3* |
| 2,4-Dinitrotoluene * | 0.507 | 0.519 | 0.523 | 0.552 | 0.555 | 0.531 | 4.0* |

* Compounds with required minimum RRF and maximum %RSD values.
All other compounds must meet a minimum RRF of 0.010.

* without RRF50, RSD = 26.9%

No pos. results for 2,4-DNP; quant. from continuing calibration in any case; no action

6C

# SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Ref 7

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: _____ SDG No.: CGG70

Instrument ID: 7002 Calibration Date(s): 08/24/92 08/24/92

Calibration Times: 1610 2005

No positives associated - no ACTION

LAB FILE ID: RRF20 = S2764 RRF50 = S2763

RRF80 = S2765 RRF120= S2766 RRF160= S2767

| COMPOUND | RRF20 | RRF50 | RRF80 | RRF120 | RRF160 | RRF | % RSD |
|---|---|---|---|---|---|---|---|
| Diethylphthalate | 1.829 | 1.643 | 1.606 | 1.645 | 1.590 | 1.663 | 5.8 |
| 4-Chlorophenyl-phenylether * | 0.760 | 0.700 | 0.649 | 0.663 | 0.641 | 0.683 | 7.1* |
| Fluorene * | 1.511 | 1.360 | 1.286 | 1.317 | 1.285 | 1.352 | 7.0* |
| 4-Nitroaniline | | 0.405 | 0.413 | 0.455 | 0.476 | 0.437 | 7.8 |
| 4,6-Dinitro-2-methylphenol | | 0.060 | 0.105 | 0.125 | 0.134 | 0.106 | 31.1 * |
| N-Nitrosodiphenylamine (1) | 0.529 | 0.495 | 0.477 | 0.467 | 0.453 | 0.484 | 6.1 |
| 4-Bromophenyl-phenylether * | 0.240 | 0.225 | 0.211 | 0.204 | 0.195 | 0.215 | 8.3* |
| Hexachlorobenzene * | 0.333 | 0.319 | 0.290 | 0.269 | 0.264 | 0.295 | 10.3* |
| Pentachlorophenol * | | 0.154 | 0.160 | 0.168 | 0.165 | 0.162 | 3.8* |
| Phenanthrene * | 1.142 | 1.016 | 0.947 | 0.902 | 0.884 | 0.978 | 10.7* |
| Anthracene * | 1.105 | 1.000 | 0.956 | 0.893 | 0.876 | 0.966 | 9.5* |
| Carbazole | 1.115 | 0.976 | 0.935 | 0.881 | 0.868 | 0.955 | 10.4 |
| Di-n-butylphthalate | 1.630 | 1.456 | 1.374 | 1.284 | 1.209 | 1.391 | 11.7 |
| Fluoranthene * | 1.391 | 1.196 | 1.137 | 1.062 | 1.017 | 1.161 | 12.6* |
| Pyrene * | 1.078 | 0.979 | 0.994 | 1.009 | 0.942 | 1.000 | 5.0* |
| Butylbenzylphthalate | 0.606 | 0.574 | 0.577 | 0.592 | 0.580 | 0.586 | 2.3 |
| 3,3'-Dichlorobenzidine | 0.332 | 0.207 | 0.253 | 0.252 | 0.242 | 0.257 | 17.8 |
| Benzo(a)anthracene * | 0.945 | 0.889 | 0.853 | 0.844 | 0.835 | 0.873 | 5.2* |
| Chrysene * | 0.975 | 0.935 | 0.895 | 0.895 | 0.860 | 0.912 | 4.8* |
| bis(2-Ethylhexyl)phthalate | 0.897 | 0.845 | 0.821 | 0.830 | 0.813 | 0.841 | 4.0 |
| Di-n-octylphthalate | 1.276 | 1.324 | 1.190 | 1.158 | 1.121 | 1.214 | 6.9 |
| Benzo(b)fluoranthene * | 0.882 | 0.944 | 0.890 | 0.931 | 0.889 | 0.907 | 3.1* |
| Benzo(k)fluoranthene * | 1.155 | 1.103 | 1.026 | 0.867 | 0.869 | 1.004 | 13.2* |
| Benzo(a)pyrene * | 0.867 | 0.877 | 0.875 | 0.833 | 0.856 | 0.862 | 2.1* |
| Indeno(1,2,3-cd)pyrene * | 0.742 | 0.948 | 0.959 | 0.969 | 0.622 | 0.848 | 18.6* |
| Dibenz(a,h)anthracene * | 0.753 | 0.868 | 0.873 | 0.799 | 0.813 | 0.821 | 6.1* |
| Benzo(g,h,i)perylene * | 0.964 | 1.076 | 1.023 | 1.004 | 0.983 | 1.010 | 4.3* |
| Nitrobenzene-d5 * | 0.404 | 0.430 | 0.430 | 0.412 | 0.389 | 0.413 | 4.3* |
| 2-Fluorobiphenyl * | 1.282 | 1.198 | 1.165 | 1.108 | 1.047 | 1.160 | 7.7* |
| Terphenyl-d14 * | 0.798 | 0.702 | 0.777 | 0.743 | 0.696 | 0.743 | 6.0* |
| Phenol-d5 * | 1.749 | 1.687 | 1.774 | 1.708 | 1.718 | 1.727 | 2.0* |
| 2-Fluorophenol * | 1.178 | 1.178 | 1.189 | 1.188 | 1.171 | 1.181 | 0.6* |
| 2,4,6-Tribromophenol | 0.230 | 0.290 | 0.314 | 0.311 | 0.309 | 0.291 | 12.1 |
| 2-Chlorophenol-d4 * | 1.144 | 1.135 | 1.189 | 1.119 | 1.148 | 1.147 | 2.3* |
| 1,2-Dichlorobenzene-d4 * | 0.883 | 0.873 | 0.870 | 0.829 | 0.842 | 0.859 | 2.7* |

(1) Cannot be separated from Diphenylamine

* Compounds with required minimum RRF and maximum %RSD values.
All other compounds must meet a minimum RRF of 0.010.

*No pos. results, RRF ok, no action

7B

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Ref. 8

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: _____ SDG No.: CGG70

Instrument ID: 7002 Calibration date: 08/28/92 Time: 1153

Lab File ID: S2772 Init. Calib. Date(s): 08/24/92 08/24/92

Init. Calib. Times: 1610 2005

No positives associated - no action

| COMPOUND | RRF | RRF50 | MIN RRF | %D | MAX %D |
|---|---|---|---|---|---|
| Phenol | 1.819 | 2.107 | 0.800 | -15.8 | 25.0 |
| bis(2-Chloroethyl)ether | 1.462 | 1.752 | 0.700 | -19.8 | 25.0 |
| 2-Chlorophenol | 1.369 | 1.445 | 0.800 | -5.6 | 25.0 |
| 1,3-Dichlorobenzene | 1.364 | 1.430 | 0.600 | -4.8 | 25.0 |
| 1,4-Dichlorobenzene | 1.433 | 1.482 | 0.500 | -3.4 | 25.0 |
| 1,2-Dichlorobenzene | 1.305 | 1.342 | 0.400 | -2.8 | 25.0 |
| 2-Methylphenol | 1.312 | 1.499 | 0.700 | -14.2 | 25.0 |
| 2,2'-oxybis(1-Chloropropane) | 2.350 | 2.986 | | -27.1 | |
| 4-Methylphenol | 1.416 | 1.592 | 0.600 | -12.4 | 25.0 |
| N-Nitroso-di-n-propylamine | 1.257 | 1.613 | 0.500 | -28.3 | 25.0 |
| Hexachloroethane | 0.668 | 0.743 | 0.300 | -11.2 | 25.0 |
| Nitrobenzene | 0.433 | 0.504 | 0.200 | -16.4 | 25.0 |
| Isophorone | 0.864 | 0.980 | 0.400 | -13.4 | 25.0 |
| 2-Nitrophenol | 0.186 | 0.188 | 0.100 | -1.1 | 25.0 |
| 2,4-Dimethylphenol | 0.345 | 0.364 | 0.200 | -5.5 | 25.0 |
| bis(2-Chloroethoxy)methane | 0.470 | 0.532 | 0.300 | -13.2 | 25.0 |
| 2,4-Dichlorophenol | 0.278 | 0.285 | 0.200 | -2.5 | 25.0 |
| 1,2,4-Trichlorobenzene | 0.298 | 0.301 | 0.200 | -1.0 | 25.0 |
| Naphthalene | 0.980 | 1.028 | 0.700 | -4.9 | 25.0 |
| 4-Chloroaniline | 0.421 | 0.395 | | 6.2 | |
| Hexachlorobutadiene | 0.184 | 0.177 | | 3.8 | |
| 4-Chloro-3-methylphenol | 0.374 | 0.421 | 0.200 | -12.6 | 25.0 |
| 2-Methylnaphthalene | 0.654 | 0.688 | 0.400 | -5.2 | 25.0 |
| Hexachlorocyclopentadiene | 0.324 | 0.319 | | 1.5 | |
| 2,4,6-Trichlorophenol | 0.377 | 0.387 | 0.200 | -2.7 | 25.0 |
| 2,4,5-Trichlorophenol | 0.372 | 0.422 | 0.200 | -13.4 | 25.0 |
| 2-Chloronaphthalene | 1.047 | 1.084 | 0.800 | -3.5 | 25.0 |
| 2-Nitroaniline | 0.525 | 0.598 | | -13.9 | |
| Dimethylphthalate | 1.379 | 1.430 | | -3.7 | |
| Acenaphthylene | 1.813 | 1.903 | 1.300 | -5.0 | 25.0 |
| 2,6-Dinitrotoluene | 0.343 | 0.352 | 0.200 | -2.6 | 25.0 |
| 3-Nitroaniline | 0.386 | 0.373 | | 3.4 | |
| Acenaphthene | 1.244 | 1.291 | 0.800 | -3.8 | 25.0 |
| 2,4-Dinitrophenol | 0.112 | 0.067 | | 40.2 | |
| 4-Nitrophenol | 0.224 | 0.247 | | -10.3 | |
| Dibenzofuran | 1.711 | 1.732 | 0.800 | -1.2 | 25.0 |
| 2,4-Dinitrotoluene | 0.531 | 0.534 | 0.200 | -0.6 | 25.0 |

(1) Cannot be separated from Diphenylamine

All other compounds must meet a minimum RRF of 0.010.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CGG72

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SM0002 SAS No.: 7453C01 SDG No.: CGG72

Matrix: (soil/water) SOIL Lab Sample ID: 9208251-2

Sample wt/vol: 5.45 (g/mL) G Lab File ID: A8177

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: not dec. 54 Date Analyzed: 08/26/92

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

| 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 | 21 | B |
| 67-64-1 | Acetone | 17 | BJ |
| 75-15-0 | Carbon Disulfide | 20 | U |
| 75-35-4 | 1,1-Dichloroethene | 20 | U |
| 75-34-3 | 1,1-Dichloroethane | 20 | U |
| 540-59-0 | 1,2-Dichloroethene (total) | 20 | U |
| 67-66-3 | Chloroform | 20 | U |
| 107-06-2 | 1,2-Dichloroethane | 20 | U |
| 78-93-3 | 2-Butanone | 20 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 20 | U |
| 56-23-5 | Carbon Tetrachloride | 20 | U |
| 75-27-4 | Bromodichloromethane | 20 | U |
| 78-87-5 | 1,2-Dichloropropane | 20 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 20 | U |
| 79-01-6 | Trichloroethene | 20 | U |
| 124-48-1 | Dibromochloromethane | 20 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 20 | U |
| 71-43-2 | Benzene | 20 | U |
| 10061-02-6 | trans-1,3-Dichloropropene | 20 | U |
| 75-25-2 | Bromoform | 20 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 20 | U |
| 591-78-6 | 2-Hexanone | 20 | U |
| 127-18-4 | Tetrachloroethene | 20 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 20 | U |
| 108-88-3 | Toluene | 7 | J |
| 108-90-7 | Chlorobenzene | 20 | U |
| 100-41-4 | Ethylbenzene | 20 | U |
| 100-42-5 | Styrene | 20 | U |
| 1330-20-7 | Xylene (total) | 20 | U |

000003
EPA SAMPLE NO.

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CGG72

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SMO002 SAS No.: 7453C01 SDG No.: CGG72

Matrix: (soil/water) SOIL Lab Sample ID: 9208251-2

Sample wt/vol: 5.45 (g/mL) G Lab File ID: A8177

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: not dec. 54 Date Analyzed: 08/26/92

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | UNKNOWN | 3.03 | 14 | J |

000009

EPA SAMPLE NO.

CGG72RE

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SM0002 SAS No.: 7453C01 SDG No.: CGG72

Matrix: (soil/water) SOIL Lab Sample ID: 9208251-2RE

Sample wt/vol: 5.00 (g/mL) G Lab File ID: A9038

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: not dec. 54 Date Analyzed: 09/02/92

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 22 | U |
| 74-83-9 | Bromomethane | 22 | U |
| 75-01-4 | Vinyl Chloride | 22 | U |
| 75-00-3 | Chloroethane | 22 | U |
| 75-09-2 | Methylene Chloride | 22 | B |
| 67-64-1 | Acetone | 8 | BJ |
| 75-15-0 | Carbon Disulfide | 22 | U |
| 75-35-4 | 1,1-Dichloroethene | 22 | U |
| 75-34-3 | 1,1-Dichloroethane | 22 | U |
| 540-59-0 | 1,2-Dichloroethene (total) | 22 | U |
| 67-66-3 | Chloroform | 22 | U |
| 107-06-2 | 1,2-Dichloroethane | 22 | U |
| 78-93-3 | 2-Butanone | 22 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 22 | U |
| 56-23-5 | Carbon Tetrachloride | 22 | U |
| 75-27-4 | Bromodichloromethane | 22 | U |
| 78-87-5 | 1,2-Dichloropropane | 22 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 22 | U |
| 79-01-6 | Trichloroethene | 22 | U |
| 124-48-1 | Dibromochloromethane | 22 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 22 | U |
| 71-43-2 | Benzene | 22 | U |
| 10061-02-6 | trans-1,3-Dichloropropene | 22 | U |
| 75-25-2 | Bromoform | 22 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 22 | U |
| 591-78-6 | 2-Hexanone | 22 | U |
| 127-18-4 | Tetrachloroethene | 22 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 22 | U |
| 108-88-3 | Toluene | 4 | BJ |
| 108-90-7 | Chlorobenzene | 22 | U |
| 100-41-4 | Ethylbenzene | 22 | U |
| 100-42-5 | Styrene | 22 | U |
| 1330-20-7 | Xylene (total) | 22 | U |

EPA SAMPLE NO.

CGG72RE

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SMO002 SAS No.: 7453C01 SDG No.: CGG72

Matrix: (soil/water) SOIL Lab Sample ID: 9208251-2RE

Sample wt/vol: 5.00 (g/mL) G Lab File ID: A9038

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: not dec. 54 Date Analyzed: 09/02/92

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|

000009

EPA SAMPLE NO.

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

ref.11 NON compliant Initial Cal.

☆ REANALYSIS Performed UNDER

CGG72RE

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SM0002 SAS No.: 7453C01 SDG No.: CGG72

Matrix: (soil/water) SOIL Lab Sample ID: 9208251-2RE

Sample wt/vol: 5.00 (g/mL) G Lab File ID: A9038

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: not dec. 54 Date Analyzed: 09/02/92

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 22 | U |
| 74-83-9 | Bromomethane | 22 | U |
| 75-01-4 | Vinyl Chloride | 22 | U |
| 75-00-3 | Chloroethane | 22 | U |
| 75-09-2 | Methylene Chloride | 22 | B |
| 67-64-1 | Acetone | 8 | BJ |
| 75-15-0 | Carbon Disulfide | 22 | U |
| 75-35-4 | 1,1-Dichloroethene | 22 | U |
| 75-34-3 | 1,1-Dichloroethane | 22 | U |
| 540-59-0 | 1,2-Dichloroethene (total) | 22 | U |
| 67-66-3 | Chloroform | 22 | U |
| 107-06-2 | 1,2-Dichloroethane | 22 | U |
| 78-93-3 | 2-Butanone | 22 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 22 | U |
| 56-23-5 | Carbon Tetrachloride | 22 | U |
| 75-27-4 | Bromodichloromethane | 22 | U |
| 78-87-5 | 1,2-Dichloropropane | 22 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 22 | U |
| 79-01-6 | Trichloroethene | 22 | U |
| 124-48-1 | Dibromochloromethane | 22 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 22 | U |
| 71-43-2 | Benzene | 22 | U |
| 10061-02-6 | trans-1,3-Dichloropropene | 22 | U |
| 75-25-2 | Bromoform | 22 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 22 | U |
| 591-78-6 | 2-Hexanone | 22 | U |
| 127-18-4 | Tetrachloroethene | 22 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 22 | U |
| 108-88-3 | Toluene | 4 | BJ |
| 108-90-7 | Chlorobenzene | 22 | U |
| 100-41-4 | Ethylbenzene | 22 | U |
| 100-42-5 | Styrene | 22 | U |
| 1330-20-7 | Xylene (total) | 22 | U |

ref.11 000212

6A

# VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: PRECISION A L  Contract: _____

Lab Code: PRECIS  Case No.: SM0002  SAS No.: 7453C01  SDG No.: CGG72

Instrument ID: HPVOA  Calibration Date(s): 09/08/92  09/08/92

Heated Purge: (Y/N): Y  Calibration Times: 1425  1809

GC Column: DB-624  ID: 0.530(mm)

RECALIBRATION meets SOW criteria, but Cl has High RSD even in Recalibration.

LAB FILE ID:  RRF10 = A9078  RRF20 = A9079
RRF50= A9077  RRF100= A9080  RRF200= A9082

| COMPOUND | | RRF10 | RRF20 | RRF50 | RRF100 | RRF200 | $\overline{RRF}$ | % RSD |
|---|---|---|---|---|---|---|---|---|
| Chloromethane | | 0.923 | 0.666 | 2.349 | 1.188 | 1.165 | 1.258 | 51.3 |
| Bromomethane | * | 1.272 | 1.064 | 1.228 | 1.028 | 1.322 | 1.183 | 11.0* |
| Vinyl Chloride | * | 1.386 | 1.282 | 1.946 | 1.093 | 1.195 | 1.380 | 24.2* |
| Chloroethane | | 0.890 | 0.780 | 0.914 | 0.791 | 0.810 | 0.837 | 7.3 |
| Methylene Chloride | | 4.623 | 3.283 | 2.616 | 2.262 | 2.061 | 2.969 | 34.8 * ‡ |
| Acetone | | 1.785 | 1.212 | 2.200 | 1.001 | 1.400 | 1.520 | 31. |
| Carbon Disulfide | | 4.082 | 4.252 | 4.899 | 4.615 | 4.650 | 4.500 | 7.3 |
| 1,1-Dichloroethene | * | 1.622 | 1.605 | 1.837 | 1.584 | 1.512 | 1.632 | 7.5* |
| 1,1-Dichloroethane | * | 3.588 | 3.563 | 3.985 | 3.540 | 3.429 | 3.621 | 5.9* |
| 1,2-Dichloroethene (total) | | 0.874 | 0.902 | 0.965 | 0.882 | 0.856 | 0.896 | 4.7 |
| Chloroform | * | 0.446 | 0.489 | 0.487 | 0.446 | 0.424 | 0.458 | 6.2* |
| 1,2-Dichloroethane | * | 1.992 | 1.955 | 1.929 | 1.879 | 1.628 | 1.877 | 7.7* |
| 2-Butanone | | 1.641 | 1.317 | 2.220 | 1.414 | 1.479 | 1.614 | 22.2 |
| 1,1,1-Trichloroethane | * | 1.037 | 0.990 | 1.030 | 1.082 | 1.015 | 1.031 | 3.3* |
| Carbon Tetrachloride | * | 0.917 | 0.887 | 0.915 | 1.005 | 0.961 | 0.937 | 4.9* |
| Bromodichloromethane | * | 1.710 | 1.623 | 2.050 | 1.873 | 1.858 | 1.823 | 9.0* |
| 2-Dichloropropane | | 0.456 | 0.433 | 0.443 | 0.455 | 0.436 | 0.445 | 2.4 |
| cis-1,3-Dichloropropene | * | 1.147 | 1.061 | 1.500 | 1.298 | 1.308 | 1.263 | 13.4* |
| Trichloroethene | * | 0.371 | 0.346 | 0.357 | 0.367 | 0.341 | 0.356 | 3.6* |
| Dibromochloromethane | * | 1.416 | 1.266 | 1.820 | 1.658 | 1.599 | 1.552 | 13.9* |
| 1,1,2-Trichloroethane | * | 0.693 | 0.588 | 0.855 | 0.751 | 0.755 | 0.728 | 13.4* |
| Benzene | * | 2.080 | 1.923 | 1.980 | 1.990 | 1.798 | 1.954 | 5. |
| trans-1,3-Dichloropropene | * | 0.993 | 0.893 | 1.329 | 1.190 | 1.199 | 1.121 | 15.6 |
| Bromoform | * | 1.082 | 1.014 | 1.554 | 1.413 | 1.403 | 1.293 | 18.0* |
| 4-Methyl-2-Pentanone | | 0.603 | 0.522 | 0.580 | 0.697 | 0.601 | 0.601 | 10.5 |
| 2-Hexanone | | 0.457 | 0.354 | 0.512 | 0.516 | 0.515 | 0.471 | 14.8 |
| Tetrachloroethene | * | 0.526 | 0.497 | 0.494 | 0.516 | 0.495 | 0.506 | 2.9* |
| 1,1,2,2-Tetrachloroethane | * | 0.664 | 0.662 | 0.690 | 0.838 | 0.763 | 0.723 | 10.5* |
| Toluene | * | 0.866 | 0.825 | 0.843 | 0.883 | 0.908 | 0.865 | 3.8* |
| Chlorobenzene | * | 1.131 | 0.978 | 1.032 | 1.114 | 1.145 | 1.080 | 6.7* |
| Ethylbenzene | * | 0.474 | 0.438 | 0.434 | 0.483 | 0.504 | 0.467 | 6.4* |
| Styrene | * | 1.019 | 0.943 | 0.971 | 1.112 | 1.154 | 1.040 | 8.7* |
| Xylene (total) | * | 0.610 | 0.538 | 0.545 | 0.607 | 0.629 | 0.586 | 7.1* |
| Toluene-d8 | | 1.675 | 1.385 | 1.364 | 1.405 | 1.443 | 1.454 | 8.7 |
| Bromofluorobenzene | * | 0.990 | 0.828 | 0.758 | 0.782 | 0.794 | 0.830 | 11.2* |
| 1,2-Dichloroethane-d4 | | 1.899 | 1.712 | 1.658 | 1.537 | 1.207 | 1.603 | 16.0 |

* Compounds with required minimum RRF and maximum %RSD values.
All other compounds must meet a minimum RRF of 0.010.



* If eliminate low point, RSD=21%

‡ No positive detections not attributable to blank contamination; no action

000013

EPA SAMPLE NO.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

CGG73RE

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SM0002 SAS No.: 7453C01 SDG No.: CGG72

Matrix: (soil/water) SOIL Lab Sample ID: 9208251-3RE

Sample wt/vol: 5.10 (g/mL) G Lab File ID: A9039

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: not dec. 7 Date Analyzed: 09/02/92

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

| 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 | 14 | B |
| 67-64-1 | Acetone | 5 | BJ |
| 75-15-0 | Carbon Disulfide | 11 | U |
| 75-35-4 | 1,1-Dichloroethene | 11 | U |
| 75-34-3 | 1,1-Dichloroethane | 11 | U |
| 540-59-0 | 1,2-Dichloroethene (total) | 11 | U |
| 67-66-3 | Chloroform | 11 | U |
| 107-06-2 | 1,2-Dichloroethane | 11 | U |
| 78-93-3 | 2-Butanone | 11 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 11 | U |
| 56-23-5 | Carbon Tetrachloride | 11 | U |
| 75-27-4 | Bromodichloromethane | 11 | U |
| 78-87-5 | 1,2-Dichloropropane | 11 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 11 | U |
| 79-01-6 | Trichloroethene | 11 | U |
| 124-48-1 | Dibromochloromethane | 11 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 11 | U |
| 71-43-2 | Benzene | 11 | U |
| 10061-02-6 | trans-1,3-Dichloropropene | 11 | U |
| 75-25-2 | Bromoform | 11 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 11 | U |
| 591-78-6 | 2-Hexanone | 11 | U |
| 127-18-4 | Tetrachloroethene | 11 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 11 | U |
| 108-88-3 | Toluene | 11 | U |
| 108-90-7 | Chlorobenzene | 11 | U |
| 100-41-4 | Ethylbenzene | 11 | U |
| 100-42-5 | Styrene | 11 | U |
| 1330-20-7 | Xylene (total) | 11 | U |

EPA SAMPLE NO.

CGG73RE

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SM0002 SAS No.: 7453C01 SDG No.: CGG72

Matrix: (soil/water) SOIL Lab Sample ID: 9208251-3RE

Sample wt/vol: 5.10 (g/mL) G Lab File ID: A9039

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: not dec. 7 Date Analyzed: 09/02/92

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| | | | | |

RT's out of window in MS

ref.2

UU1U4J

EPA SAMPLE NO.

CGG73MSRE

# 1A
## PESTICIDE IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SM0002 SAS No.: 7453C0 SDG No.: CGG72

Lab Sample ID : 8251-3MSRE Dates(s) Analyzed: 09/19/92 09/19/92

Instrument ID (1): H5890A Instrument ID (2): H5890B

GC Column(1): DB-608 ID: 0.53(mm) GC Column(2): DB-1701 ID: 0.53(mm)

| ANALYTE | COL | RT | RT WINDOW FROM | RT WINDOW TO | CONCENTRATION | %D |
|---|---|---|---|---|---|---|
| gamma-BHC (Lindane) | 1 | 15.43 | 15.42 | 15.52 | 4.7 | |
| | 2 | 15.30 | 15.32 | 15.42 | 4.2 | 11.9 |
| Heptachlor | 1 | 16.88 | 16.86 | 16.96 | 10 | |
| | 2 | 16.12 | 16.15 | 16.25 | 10 | 0.0 |
| Aldrin | 1 | 18.35 | 18.33 | 18.43 | 9.3 | |
| | 2 | 17.25 | 17.29 | 17.39 | 8.6 | 8.1 |
| Dieldrin | 1 | 23.58 | 23.54 | 23.68 | 15 | |
| | 2 | 22.50 | 22.52 | 22.66 | 15 | 0.0 |
| 4,4'-DDE | 1 | 23.12 | 23.08 | 23.22 | 2.2 | |
| | 2 | 21.73 | 21.76 | 21.90 | 2.1 | 4.8 |
| Endrin | 1 | 25.13 | 25.10 | 25.24 | 15 | |
| | 2 | 23.30 | 23.33 | 23.47 | 14 | 7.1 |
| 4,4'-DDT | 1 | 26.80 | 26.79 | 26.93 | 16 | |
| | 2 | 25.45 | 25.49 | 25.63 | 14 | 14.3 |

- Pesticides outside RT windows DB1701
- Surrogates also outside RT windows
- DB 608 shifted, too, but within RT windows



FORM X PEST-1 3/90

7E
PESTICIDE CALIBRATION VERIFICATION SUMMARY

ref.2
001004

Lab Name: PRECISION A L  Contract: _____

Lab Code: PRECIS  Case No.: SM0002  SAS No.: 7453C01  SDG No.: CGG72

GC Column: DB-608  ID: 0.53 (mm)  Init. Calib. Date(s): 09/18/92  09/18/92

EPA Sample No. (PIBLK): PIBLK21  Date Analyzed : 09/19/92

Lab Sample ID (PIBLK): PIBLK21  Time Analyzed : 0736

EPA Sample No. (INDA): INDAM11  Date Analyzed : 09/19/92

Lab Sample ID (INDA): INDAM11  Time Analyzed : 0827

DCB out of RT window

| INDIVIDUAL MIX A COMPOUND | RT | RT WINDOW FROM | RT WINDOW TO | CALC AMOUNT (ng) | NOM AMOUNT (ng) | RPD |
|---|---|---|---|---|---|---|
| alpha-BHC | 13.68 | 13.65 | 13.75 | 0.0189 | 0.0200 | 5.5 |
| gamma-BHC (Lindane) | 15.45 | 15.42 | 15.52 | 0.0189 | 0.0200 | 5.5 |
| Heptachlor | 16.90 | 16.86 | 16.96 | 0.0193 | 0.0200 | 3.5 |
| Endosulfan I | 22.30 | 22.25 | 22.39 | 0.0187 | 0.0200 | 6.5 |
| Dieldrin | 23.58 | 23.54 | 23.68 | 0.0379 | 0.0400 | 5.2 |
| Endrin ok | 25.15 | 25.10 | 25.24 | 0.0396 | 0.0400 | 1.0 |
| 4,4'-DDD ok | 25.43 | 25.40 | 25.54 | 0.0388 | 0.0400 | 3.0 |
| 4,4'-DDT | 26.82 | 26.79 | 26.93 | 0.0397 | 0.0400 | 0.8 |
| Methoxychlor Borderline | 31.95 | 31.95 | 32.09 | 0.200 | 0.200 | 0.0 |
| Tetrachloro-m-xylene | 10.55 | 10.51 | 10.61 | 0.0193 | 0.0200 | 3.5 |
| Decachlorobiphenyl ORTW* | 44.80 | 44.81 | 45.01 | 0.0388 | 0.0400 | 3.0 |

EPA Sample No. (INDB): INDBM11  Date Analyzed : 09/19/92

Lab Sample ID (INDB): INDBM11  Time Analyzed : 0918

| INDIVIDUAL MIX B COMPOUND | RT | RT WINDOW FROM | RT WINDOW TO | CALC AMOUNT (ng) | NOM AMOUNT (ng) | RPD |
|---|---|---|---|---|---|---|
| beta-BHC | 15.73 | 15.70 | 15.80 | 0.0198 | 0.0200 | 1.0 |
| delta-BHC | 17.37 | 17.34 | 17.44 | 0.0198 | 0.0200 | 1.0 |
| Aldrin | 18.37 | 18.33 | 18.43 | 0.0208 | 0.0200 | 4.0 |
| Heptachlor epoxide | 20.77 | 20.71 | 20.85 | 0.0200 | 0.0200 | 0.0 |
| 4,4'-DDE | 23.12 | 23.08 | 23.22 | 0.0386 | 0.0400 | 3.5 |
| Endosulfan II | 25.90 | 25.86 | 26.00 | 0.0386 | 0.0400 | 3.5 |
| Endosulfan sulfate ok | 28.07 | 28.03 | 28.17 | 0.0390 | 0.0400 | 2.5 |
| Endrin ketone Borderline | 33.15 | 33.14 | 33.28 | 0.0393 | 0.0400 | 1.8 |
| Endrin aldehyde | 27.43 | 27.41 | 27.55 | 0.0376 | 0.0400 | 6.0 |
| alpha-Chlordane | 22.13 | 22.09 | 22.23 | 0.0192 | 0.0200 | 4.0 |
| gamma-Chlordane OK | 21.47 | 21.41 | 21.55 | 0.0172 | 0.0200 | 14.0 |
| Tetrachloro-m-xylene | 10.55 | 10.51 | 10.61 | 0.0210 | 0.0200 | 5.0 |
| Decachlorobiphenyl ORTW* | 44.78 | 44.81 | 45.01 | 0.0417 | 0.0400 | 4.2 |

QC LIMITS: RPD of amounts in the Individual Mixes must be less than or equal to 25.0%

**HALLIBURTON NUS Environmental Corporation and Subsidiaries**

**STANDARD CALCULATION SHEET** ref. 3

| CLIENT: ARCS III | FILE NO.: | BY: (b) (4) [redacted] | PAGE 1 OF 2 |
|---|---|---|---|
| SUBJECT: Pesticides Not Reported by Lab ADDED BY Reviewer | | CHECKED BY: (b) (4) [redacted] | DATE: 12/31/92 |

(COL.1 = DB608 // COL.2 = DB1701)

** ALL DATA FROM Initial extraction & 9/3 analysis

| Sample | Analyte | COL. | RT in SAMPLE | RT Window LOW | RT Window HIGH | CONC. ug/kg | ABOVE CRQL (Y/N) | % Diff. |
|---|---|---|---|---|---|---|---|---|
| CGG79 | gammachlordane | 1 | 21.100 | 21.04 | 21.18 | 0.22 | N | 29% |
| | | 2 | 21.117 | 21.03 | 21.17 | 0.17* | N | |
| | α-chlordane | 1 | 21.767 | 21.71 | 21.85 | 0.14* | N | 43% |
| | | 2 | 21.317 | 21.24 | 21.38 | 0.20 | N | |
| | 4,4'-DDE | 1 | 22.783 | 22.69 | 22.83 | 0.11* | N | 82% |
| | | 2 | 21.617 | 21.54 | 21.68 | 0.20 | N | |
| | 4,4'-DDD | 1 | 25.100 | 24.98 | 25.12 | 0.85 | Y | 44% |
| | | 2 | 24.683 | 24.60 | 24.74 | 0.59* | N | |
| CGG81 | Heptachlor | 1 | 16.617 | 16.55 | 16.65 | 0.26 | N | 30% |
| | | 2 | 16.000 | 15.98 | 16.08 | 0.20* | N | |
| | Heptachlor epoxide | 1 | 20.417 | 20.36 | 20.50 | 0.37* | Y | 35% |
| | | 2 | 19.850 | 19.76 | 19.90 | 0.50 | Y | |
| | γ-chlordane | 1 | 21.133 | 21.04 | 21.18 | 3.4 | Y | 87% |
| | | 2 | 21.100 | 21.03 | 21.17 | 1.8* | Y | |
| | α-chlordane | 1 | 21.800 | 21.71 | 21.85 | 2.1* | Y | 52% |
| | | 2 | 21.317 | 21.24 | 21.38 | 3.1 | Y | |
| | 4,4'-DDE | 1 | 22.783 | 22.69 | 22.83 | 0.20* | N | 80% |
| | | 2 | 21.633 | 21.54 | 21.68 | 0.36 | N | |

* = {Value Reported on data summary (Used Run with LOWEST VALUE DETECTED)}

RTs out of Window in MSD

ref.2

001042
EPA SAMPLE NO.

# PESTICIDE IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

CGG73MSDRE

Lab Name: PRECISION A L  Contract: _____

Lab Code: PRECIS  Case No.: SMO002  SAS No.: 7453C0  SDG No.: CGG72

Lab Sample ID : 8251-3MSDRE  Dates(s) Analyzed: 09/19/92 09/19/92

Instrument ID (1): H5890A  Instrument ID (2): H5890B

GC Column(1): DB-608 ID: 0.53(mm)  GC Column(2): DB-1701 ID: 0.53(mm)

| ANALYTE | COL | RT | RT WINDOW FROM | RT WINDOW TO | CONCENTRATION | %D |
|---|---|---|---|---|---|---|
| gamma-BHC (Lindane) | 1 | 15.45 | 15.42 | 15.52 | 5.4 | |
| | 2 | 15.30 | 15.32 | 15.42 | 5.0 | 8.0 |
| Heptachlor | 1 | 16.88 | 16.86 | 16.96 | 12 | |
| | 2 | 16.12 | 16.15 | 16.25 | 12 | 0.0 |
| Aldrin | 1 | 18.35 | 18.33 | 18.43 | 12 | |
| | 2 | 17.25 | 17.29 | 17.39 | 11 | 9.1 |
| Dieldrin | 1 | 23.58 | 23.54 | 23.68 | 19 | |
| | 2 | 22.50 | 22.52 | 22.66 | 19 | 0.0 |
| 4,4'-DDE | 1 | 23.12 | 23.08 | 23.22 | 2.7 | |
| | 2 | 21.73 | 21.76 | 21.90 | 2.9 | 7.4 |
| Endrin | 1 | 25.13 | 25.10 | 25.24 | 20 | |
| | 2 | 23.30 | 23.33 | 23.47 | 18 | 11.1 |
| 4,4'-DDT | 1 | 26.82 | 26.79 | 26.93 | 17 | |
| | 2 | 25.45 | 25.49 | 25.63 | 15 | 13.3 |

- Pesticides outside RT windows DB1701
- Surrogates also outside RT windows
- DB608 shifted, too, but within RT windows



FORM X PEST-1 3/90

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CGG79

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SMO002 SAS No.: 7453C01 SDG No.: CGG72

Matrix: (soil/water) SOIL Lab Sample ID: 9208303-1

Sample wt/vol: 5.0 (g/mL) G Lab File ID: A9040

Level: (low/med) LOW Date Received: 08/27/92

% Moisture: not dec. 18 Date Analyzed: 09/02/92

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

| 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 | 12 | BJ |
| 67-64-1 | Acetone | 3 | BJ |
| 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 | 12 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 12 | U |
| 56-23-5 | Carbon Tetrachloride | 12 | 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 | 12 | U |
| 591-78-6 | 2-Hexanone | 12 | 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 | Xylene (total) | 12 | U |

000016

EPA SAMPLE NO.

CGG79

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SMO002 SAS No.: 7453C01 SDG No.: CGG72

Matrix: (soil/water) SOIL Lab Sample ID: 9208303-1

Sample wt/vol: 5.0 (g/mL) G Lab File ID: A9040

Level: (low/med) LOW Date Received: 08/27/92

% Moisture: not dec. 18 Date Analyzed: 09/02/92

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|

000017

EPA SAMPLE NO.

CGG79RE

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SM0002 SAS No.: 7453C01 SDG No.: CGG72

Matrix: (soil/water) SOIL Lab Sample ID: 9208303-1RE

Sample wt/vol: 5.4 (g/mL) G Lab File ID: A9086

Level: (low/med) LOW Date Received: 08/27/92

% Moisture: not dec. 18 Date Analyzed: 09/09/92

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

| 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 | 5 | BJ |
| 67-64-1 | Acetone | 4 | BJ |
| 75-15-0 | Carbon Disulfide | 11 | U |
| 75-35-4 | 1,1-Dichloroethene | 11 | U |
| 75-34-3 | 1,1-Dichloroethane | 11 | U |
| 540-59-0 | 1,2-Dichloroethene (total) | 11 | U |
| 67-66-3 | Chloroform | 11 | U |
| 107-06-2 | 1,2-Dichloroethane | 11 | U |
| 78-93-3 | 2-Butanone | 11 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 11 | U |
| 56-23-5 | Carbon Tetrachloride | 11 | U |
| 75-27-4 | Bromodichloromethane | 11 | U |
| 78-87-5 | 1,2-Dichloropropane | 11 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 11 | U |
| 79-01-6 | Trichloroethene | 11 | U |
| 124-48-1 | Dibromochloromethane | 11 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 11 | U |
| 71-43-2 | Benzene | 11 | U |
| 10061-02-6 | trans-1,3-Dichloropropene | 11 | U |
| 75-25-2 | Bromoform | 11 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 11 | U |
| 591-78-6 | 2-Hexanone | 11 | U |
| 127-18-4 | Tetrachloroethene | 11 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 11 | U |
| 108-88-3 | Toluene | 11 | U |
| 108-90-7 | Chlorobenzene | 11 | U |
| 100-41-4 | Ethylbenzene | 11 | U |
| 100-42-5 | Styrene | 11 | U |
| 1330-20-7 | Xylene (total) | 11 | U |

000018

EPA SAMPLE NO.

CGG79RE

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SMO002 SAS No.: 7453C01 SDG No.: CGG72

Matrix: (soil/water) SOIL Lab Sample ID: 9208303-1RE

Sample wt/vol: 5.4 (g/mL) G Lab File ID: A9086

Level: (low/med) LOW Date Received: 08/27/92

% Moisture: not dec. 18 Date Analyzed: 09/09/92

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|

000019

EPA SAMPLE NO.

CGG80

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SMO002 SAS No.: 7453C01 SDG No.: CGG72

Matrix: (soil/water) SOIL Lab Sample ID: 9208303-2

Sample wt/vol: 4.9 (g/mL) G Lab File ID: A9041

Level: (low/med) LOW Date Received: 08/27/92

% Moisture: not dec. 21 Date Analyzed: 09/02/92

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

| 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 | 13 | B |
| 67-64-1 | Acetone | 3 | BJ |
| 75-15-0 | Carbon Disulfide | 13 | U |
| 75-35-4 | 1,1-Dichloroethene | 13 | U |
| 75-34-3 | 1,1-Dichloroethane | 13 | U |
| 540-59-0 | 1,2-Dichloroethene (total) | 13 | U |
| 67-66-3 | Chloroform | 13 | U |
| 107-06-2 | 1,2-Dichloroethane | 13 | U |
| 78-93-3 | 2-Butanone | 13 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 13 | U |
| 56-23-5 | Carbon Tetrachloride | 13 | U |
| 75-27-4 | Bromodichloromethane | 13 | U |
| 78-87-5 | 1,2-Dichloropropane | 13 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 13 | U |
| 79-01-6 | Trichloroethene | 13 | U |
| 124-48-1 | Dibromochloromethane | 13 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 13 | U |
| 71-43-2 | Benzene | 13 | U |
| 10061-02-6 | trans-1,3-Dichloropropene | 13 | U |
| 75-25-2 | Bromoform | 13 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 13 | U |
| 591-78-6 | 2-Hexanone | 13 | U |
| 127-18-4 | Tetrachloroethene | 13 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 13 | U |
| 108-88-3 | Toluene | 13 | U |
| 108-90-7 | Chlorobenzene | 13 | U |
| 100-41-4 | Ethylbenzene | 13 | U |
| 100-42-5 | Styrene | 13 | U |
| 1330-20-7 | Xylene (total) | 13 | U |

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

CGG80

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SMO002 SAS No.: 7453C01 SDG No.: CGG72

Matrix: (soil/water) SOIL Lab Sample ID: 9208303-2

Sample wt/vol: 4.9 (g/mL) G Lab File ID: A9041

Level: (low/med) LOW Date Received: 08/27/92

% Moisture: not dec. 21 Date Analyzed: 09/02/92

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CGG80RE

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SMO002 SAS No.: 7453C01 SDG No.: CGG72

Matrix: (soil/water) SOIL Lab Sample ID: 9208303-2RE

Sample wt/vol: 5.6 (g/mL) G Lab File ID: A9087

Level: (low/med) LOW Date Received: 08/27/92

% Moisture: not dec. 21 Date Analyzed: 09/09/92

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

| 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 | 5 | BJ |
| 67-64-1 | Acetone | 11 | U |
| 75-15-0 | Carbon Disulfide | 11 | U |
| 75-35-4 | 1,1-Dichloroethene | 11 | U |
| 75-34-3 | 1,1-Dichloroethane | 11 | U |
| 540-59-0 | 1,2-Dichloroethene (total) | 11 | U |
| 67-66-3 | Chloroform | 11 | U |
| 107-06-2 | 1,2-Dichloroethane | 11 | U |
| 78-93-3 | 2-Butanone | 11 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 11 | U |
| 56-23-5 | Carbon Tetrachloride | 11 | U |
| 75-27-4 | Bromodichloromethane | 11 | U |
| 78-87-5 | 1,2-Dichloropropane | 11 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 11 | U |
| 79-01-6 | Trichloroethene | 11 | U |
| 124-48-1 | Dibromochloromethane | 11 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 11 | U |
| 71-43-2 | Benzene | 11 | U |
| 10061-02-6 | trans-1,3-Dichloropropene | 11 | U |
| 75-25-2 | Bromoform | 11 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 11 | U |
| 591-78-6 | 2-Hexanone | 11 | U |
| 127-18-4 | Tetrachloroethene | 11 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 11 | U |
| 108-88-3 | Toluene | 11 | U |
| 108-90-7 | Chlorobenzene | 11 | U |
| 100-41-4 | Ethylbenzene | 11 | U |
| 100-42-5 | Styrene | 11 | U |
| 1330-20-7 | Xylene (total) | 11 | U |

EPA SAMPLE NO.

CGG80RE

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SM0002 SAS No.: 7453C01 SDG No.: CGG72

Matrix: (soil/water) SOIL Lab Sample ID: 9208303-2RE

Sample wt/vol: 5.6 (g/mL) G Lab File ID: A9087

Level: (low/med) LOW Date Received: 08/27/92

% Moisture: not dec. 21 Date Analyzed: 09/09/92

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|

000021

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

ref.12

EPA SAMPLE NO.

CGG80RE

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SMO002 SAS No.: 7453C01 SDG No.: CGG72

Matrix: (soil/water) SOIL Lab Sample ID: 9208303-2RE

Sample wt/vol: 5.6 (g/mL) G Lab File ID: A9087

Level: (low/med) LOW Date Received: 08/27/92

% Moisture: not dec. 21 Date Analyzed: 09/09/92

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

| 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 | 5 | BJ |
| 67-64-1 | Acetone | 11 | U |
| 75-15-0 | Carbon Disulfide | 11 | U |
| 75-35-4 | 1,1-Dichloroethene | 11 | U |
| 75-34-3 | 1,1-Dichloroethane | 11 | U |
| 540-59-0 | 1,2-Dichloroethene (total) | 11 | U |
| 67-66-3 | Chloroform | 11 | U |
| 107-06-2 | 1,2-Dichloroethane | 11 | U |
| 78-93-3 | 2-Butanone | 11 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 11 | U |
| 56-23-5 | Carbon Tetrachloride | 11 | U |
| 75-27-4 | Bromodichloromethane | 11 | U |
| 78-87-5 | 1,2-Dichloropropane | 11 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 11 | U |
| 79-01-6 | Trichloroethene | 11 | U |
| 124-48-1 | Dibromochloromethane | 11 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 11 | U |
| 71-43-2 | Benzene | 11 | U |
| 10061-02-6 | trans-1,3-Dichloropropene | 11 | U |
| 75-25-2 | Bromoform | 11 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 11 | U |
| 591-78-6 | 2-Hexanone | 11 | U |
| 127-18-4 | Tetrachloroethene | 11 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 11 | U |
| 108-88-3 | Toluene | 11 | U |
| 108-90-7 | Chlorobenzene | 11 | U |
| 100-41-4 | Ethylbenzene | 11 | U |
| 100-42-5 | Styrene | 11 | U |
| 1330-20-7 | Xylene (total) | 11 | U |

000017

EPA SAMPLE NO.

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET ref.12

CGG79RE

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SMO002 SAS No.: 7453C01 SDG No.: CGG72

Matrix: (soil/water) SOIL Lab Sample ID: 9208303-1RE

Sample wt/vol: 5.4 (g/mL) G Lab File ID: A9086

Level: (low/med) LOW Date Received: 08/27/92

% Moisture: not dec. 18 Date Analyzed: 09/09/92

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

| 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 | 5 | BJ |
| 67-64-1 | Acetone | 4 | BJ |
| 75-15-0 | Carbon Disulfide | 11 | U |
| 75-35-4 | 1,1-Dichloroethene | 11 | U |
| 75-34-3 | 1,1-Dichloroethane | 11 | U |
| 540-59-0 | 1,2-Dichloroethene (total) | 11 | U |
| 67-66-3 | Chloroform | 11 | U |
| 107-06-2 | 1,2-Dichloroethane | 11 | U |
| 78-93-3 | 2-Butanone | 11 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 11 | U |
| 56-23-5 | Carbon Tetrachloride | 11 | U |
| 75-27-4 | Bromodichloromethane | 11 | U |
| 78-87-5 | 1,2-Dichloropropane | 11 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 11 | U |
| 79-01-6 | Trichloroethene | 11 | U |
| 124-48-1 | Dibromochloromethane | 11 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 11 | U |
| 71-43-2 | Benzene | 11 | U |
| 10061-02-6 | trans-1,3-Dichloropropene | 11 | U |
| 75-25-2 | Bromoform | 11 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 11 | U |
| 591-78-6 | 2-Hexanone | 11 | U |
| 127-18-4 | Tetrachloroethene | 11 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 11 | U |
| 108-88-3 | Toluene | 11 | U |
| 108-90-7 | Chlorobenzene | 11 | U |
| 100-41-4 | Ethylbenzene | 11 | U |
| 100-42-5 | Styrene | 11 | U |
| 1330-20-7 | Xylene (total) | 11 | U |

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CGG81

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SM0002 SAS No.: 7453C01 SDG No.: CGG72

Matrix: (soil/water) SOIL Lab Sample ID: 9208251-1

Sample wt/vol: 5.18 (g/mL) G Lab File ID: A8174

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: not dec. 8 Date Analyzed: 08/26/92

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | 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 | 11 | B |
| 67-64-1 | Acetone | 8 | BJ |
| 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 | 10 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 10 | U |
| 56-23-5 | Carbon Tetrachloride | 10 | 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 | 10 | U |
| 591-78-6 | 2-Hexanone | 10 | U |
| 127-18-4 | Tetrachloroethene | 10 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 10 | U |
| 108-88-3 | Toluene | 2 | J |
| 108-90-7 | Chlorobenzene | 10 | U |
| 100-41-4 | Ethylbenzene | 10 | U |
| 100-42-5 | Styrene | 10 | U |
| 1330-20-7 | Xylene (total) | 10 | U |

EPA SAMPLE NO.

.CGG81

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SMO002 SAS No.: 7453C01 SDG No.: CGG72

Matrix: (soil/water) SOIL Lab Sample ID: 9208251-1

Sample wt/vol: 5.18 (g/mL) G Lab File ID: A8174

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: not dec. 8 Date Analyzed: 08/26/92

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|

EPA SAMPLE NO.

.CGG81RE

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SM0002 SAS No.: 7453C01 SDG No.: CGG72

Matrix: (soil/water) SOIL Lab Sample ID: 9208251-1RE

Sample wt/vol: 5.00 (g/mL) G Lab File ID: A9035

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: not dec. 8 Date Analyzed: 09/02/92

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

| 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 | 28 | B |
| 67-64-1 | Acetone | 6 | BJ |
| 75-15-0 | Carbon Disulfide | 1 | J |
| 75-35-4 | 1,1-Dichloroethene | 11 | U |
| 75-34-3 | 1,1-Dichloroethane | 11 | U |
| 540-59-0 | 1,2-Dichloroethene (total) | 11 | U |
| 67-66-3 | Chloroform | 11 | U |
| 107-06-2 | 1,2-Dichloroethane | 11 | U |
| 78-93-3 | 2-Butanone | 11 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 11 | U |
| 56-23-5 | Carbon Tetrachloride | 11 | U |
| 75-27-4 | Bromodichloromethane | 11 | U |
| 78-87-5 | 1,2-Dichloropropane | 11 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 11 | U |
| 79-01-6 | Trichloroethene | 11 | U |
| 124-48-1 | Dibromochloromethane | 11 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 11 | U |
| 71-43-2 | Benzene | 11 | U |
| 10061-02-6 | trans-1,3-Dichloropropene | 11 | U |
| 75-25-2 | Bromoform | 11 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 11 | U |
| 591-78-6 | 2-Hexanone | 11 | U |
| 127-18-4 | Tetrachloroethene | 11 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 11 | U |
| 108-88-3 | Toluene | 11 | U |
| 108-90-7 | Chlorobenzene | 11 | U |
| 100-41-4 | Ethylbenzene | 11 | U |
| 100-42-5 | Styrene | 11 | U |
| 1330-20-7 | Xylene (total) | 11 | U |

EPA SAMPLE NO.

CGG81RE

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SM0002 SAS No.: 7453C01 SDG No.: CGG72

Matrix: (soil/water) SOIL Lab Sample ID: 9208251-1RE

Sample wt/vol: 5.00 (g/mL) G Lab File ID: A9035

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: not dec. 8 Date Analyzed: 09/02/92

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|

ref.3 000761

6E

# PESTICIDE INITIAL CALIBRATION OF SINGLE COMPONENT ANALYTES

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SM0002 SAS No.: 7453C01 SDG No.: CGG72

Instrument ID: H5890A Level (x low): low 1.0 mid 4.0 high 16.0

GC Column: DB-608 ID: 0.53(mm) Date(s) Analyzed: 09/02/92 09/02/92

Calib. Support Data for Compounds added by Reviewer

| COMPOUND | CALIBRATION FACTORS LOW | MID | HIGH | MEAN | %RSD |
|---|---|---|---|---|---|
| alpha-BHC | 14700000 | 17600000 | 24100000 | 18800000 | 25.6 |
| beta-BHC | 12000000 | 11800000 | 12500000 | 12100000 | 3.0 |
| delta-BHC | 13300000 | 14900000 | 21300000 | 16500000 | 25.7 |
| gamma-BHC (Lindane) | 15000000 | 17200000 | 21700000 | 18000000 | 19.0 |
| Heptachlor | 16500000 | 16400000 | 17300000 | 16700000 | 2.9 |
| Aldrin | 15300000 | 14900000 | 18500000 | 16200000 | 12.2 |
| Heptachlor epoxide | 16300000 | 15200000 | 17400000 | 16300000 | 6.7 |
| Endosulfan I | 13900000 | 13600000 | 14900000 | 14100000 | 4.8 |
| Dieldrin | 12100000 | 13400000 | 15400000 | 13600000 | 12.2 |
| 4,4'-DDE | 14000000 | 14800000 | 17400000 | 15400000 | 11.5 |
| Endrin | 8750000 | 8200000 | 10100000 | 9020000 | 10.8 |
| Endosulfan II | 13300000 | 13100000 | 15000000 | 13800000 | 7.6 |
| 4,4'-DDD | 9560000 | 10300000 | 11800000 | 10600000 | 10.8 |
| Endosulfan sulfate | 12000000 | 11400000 | 13300000 | 12200000 | 7.9 |
| 4,4'-DDT | 10100000 | 10100000 | 12800000 | 11000000 | 14.2 |
| Methoxychlor | 5710000 | 5200000 | 5230000 | 5380000 | 5.3 |
| Endrin ketone | 13800000 | 13800000 | 16300000 | 14600000 | 9.9 |
| Endrin aldehyde | 14100000 | 10800000 | 11300000 | 12100000 | 14.7 |
| alpha Chlordane | 17900000 | 17700000 | 19600000 | 18400000 | 5.7 |
| gamma Chlordane | 17500000 | 16700000 | 18600000 | 17600000 | 5.4 |
| Tetrachloro-m-xylene | 18500000 | 18700000 | 18600000 | 18600000 | 0.5 |
| Decachlorobiphenyl | 22300000 | 19600000 | 18400000 | 20100000 | 9.9 |

* Surrogate calibration factors are measured from Standard Mix A analyses

%RSD must be less than or equal 20.0% for all compounds except the surrogates, where %RSD must be less than or equal to 30.0%. Up to two target compounds, but not surrogates, may have %RSD greater than 20.0% but less than or equal to 30.0%.

6D ref.3

# PESTICIDE INITIAL CALIBRATION OF SINGLE COMPONENT ANALYTES

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SM0002 SAS No.: 7453C01 SDG No.: CGG72

Instrument ID: H5890B Level (x low): low 1.0 mid 4.0 high 16.0

GC Column: DB-1701 ID: 0.53(mm) Date(s) Analyzed: 09/02/92 09/02/92

RT SUPPORT DATA for Pest. CPDs, ADDED BY Reviewer

| COMPOUND | RT OF STANDARDS LOW | MID | HIGH | MEAN RT | RT WINDOW FROM | TO |
|---|---|---|---|---|---|---|
| alpha-BHC | 13.57 | 13.58 | 13.58 | 13.58 | 13.53 | 13.63 |
| beta-BHC | 18.15 | 18.13 | 18.15 | 18.14 | 18.09 | 18.19 |
| delta-BHC | 19.17 | 19.15 | 19.17 | 19.16 | 19.11 | 19.21 |
| gamma-BHC (Lindane) | 15.20 | 15.22 | 15.20 | 15.21 | 15.16 | 15.26 |
| Heptachlor | 16.02 | 16.03 | 16.03 | 16.03 | 15.98 | 16.08 |
| Aldrin | 17.15 | 17.15 | 17.15 | 17.15 | 17.10 | 17.20 |
| Heptachlor epoxide | 19.83 | 19.83 | 19.83 | 19.83 | 19.76 | 19.90 |
| Endosulfan I | 20.92 | 20.93 | 20.93 | 20.93 | 20.86 | 21.00 |
| Dieldrin | 22.35 | 22.35 | 22.37 | 22.36 | 22.29 | 22.43 |
| 4,4'-DDE | 21.62 | 21.60 | 21.62 | 21.61 | 21.54 | 21.68 |
| Endrin | 23.17 | 23.17 | 23.17 | 23.17 | 23.10 | 23.24 |
| Endosulfan II | 25.02 | 25.00 | 25.02 | 25.01 | 24.94 | 25.08 |
| 4,4'-DDD | 24.67 | 24.67 | 24.67 | 24.67 | 24.60 | 24.74 |
| Endosulfan sulfate | 28.25 | 28.23 | 28.25 | 28.24 | 28.17 | 28.31 |
| 4,4'-DDT | 25.30 | 25.30 | 25.32 | 25.31 | 25.24 | 25.38 |
| Methoxychlor | 27.92 | 27.92 | 27.93 | 27.92 | 27.85 | 27.99 |
| Endrin ketone | 30.58 | 30.57 | 30.60 | 30.58 | 30.51 | 30.65 |
| Endrin aldehyde | 26.85 | 26.83 | 26.85 | 26.84 | 26.77 | 26.91 |
| alpha Chlordane | 21.32 | 21.30 | 21.32 | 21.31 | 21.24 | 21.38 |
| gamma Chlordane | 21.10 | 21.10 | 21.10 | 21.10 | 21.03 | 21.17 |
| Tetrachloro-m-xylene | 9.80 | 9.82 | 9.82 | 9.81 | 9.76 | 9.86 |
| Decachlorobiphenyl | 36.02 | 36.00 | 36.02 | 36.01 | 35.91 | 36.11 |

* Surrogate retention times are measured from Standard Mix A analyses

Retention time windows are +/- 0.05 minutes for all compounds that elute before Heptachlor epoxide, +/- 0.07 minutes for all other compounds, except +/- 0.10 minutes for Decachlorobiphenyl.

3D

# SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: HYGIENIC LAB Contract: 68-D0-0154 Ref3

Lab Code: IOWA Case No.: 18622 SAS No.: _____ SDG No.: CGG70

Matrix Spike - EPA Sample No.: CGG86 Level:(low/med) LOW

| COMPOUND | SPIKE ADDED (ug/Kg) | SAMPLE CONCENTRATION (ug/Kg) | MS CONCENTRATION (ug/Kg) | MS % REC # | QC LIMITS REC. |
|---|---|---|---|---|---|
| Phenol | 3570 | 0 | 2883 | 81 | 26- 90 |
| 2-Chlorophenol | 3570 | 0 | 2668 | 75 | 25-102 |
| 1,4-Dichlorobenzene | 2380 | 184.8 | 1820 | 69 | 28-104 |
| N-Nitroso-di-n-prop.(1) | 2380 | 0 | 1641 | 69 | 41-126 |
| 1,2,4-Trichlorobenzene | 2380 | 761.7 | 2478 | 72 | 38-107 |
| 4-Chloro-3-methylphenol | 3570 | 0 | 2835 | 79 | 26-103 |
| Acenaphthene | 2380 | 253.9 | 2211 | 82 | 31-137 |
| 4-Nitrophenol | 3570 | 0 | 2978 | 83 | 11-114 |
| 2,4-Dinitrotoluene | 2380 | 0 | 2027 | 85 | 28- 89 |
| Pentachlorophenol | 3570 | 0 | 2811 | 79 | 17-109 |
| Pyrene | 2380 | 2783 | 5432 | 111 | 35-142 |

| COMPOUND | SPIKE ADDED (ug/Kg) | MSD CONCENTRATION (ug/Kg) | MSD % REC # | % RPD # | QC LIMITS RPD | QC LIMITS REC. |
|---|---|---|---|---|---|---|
| Phenol | 3570 | 2740 | 77 | 5 | 35 | 26- 90 |
| 2-Chlorophenol | 3570 | 2525 | 71 | 5 | 50 | 25-102 |
| 1,4-Dichlorobenzene | 2380 | 1789 | 67 | 3 | 27 | 28-104 |
| N-Nitroso-di-n-prop.(1) | 2380 | 1568 | 66 | 4 | 38 | 41-126 |
| 1,2,4-Trichlorobenzene | 2380 | 2406 | 69 | 4 | 23 | 38-107 |
| 4-Chloro-3-methylphenol | 3570 | 2644 | 74 | 7 | 33 | 26-103 |
| Acenaphthene | 2380 | 2042 | 75 | 9 | 19 | 31-137 |
| 4-Nitrophenol | 3570 | 2740 | 77 | 8 | 50 | 11-114 |
| 2,4-Dinitrotoluene | 2380 | 1842 | 77 | 10 | 47 | 28- 89 |
| Pentachlorophenol | 3570 | 2787 | 78 | 1 | 47 | 17-109 |
| Pyrene | 2380 | 4407 | 68 | 48 * | 36 | 35-142 |

(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: 1 out of 11 outside limits
Spike Recovery: 0 out of 22 outside limits

COMMENTS:

2E
WATER PESTICIDE SURROGATE RECOVERY

Ref. 4

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: SDG No.: CGG70

GC Column(1): RTX-1701 ID: 0.53(mm) GC Column(2): RTX-50 ID: 0.53(mm)

| | EPA SAMPLE NO. | TCX 1 %REC # | TCX 2 %REC # | DCB 1 %REC # | DCB 2 %REC # | OTHER (1) | OTHER (2) | TOT OUT |
|---|---|---|---|---|---|---|---|---|
| 01 | PBLK126 | 103 | 98 | 106 | 101 | | | 0 |
| 02 | CGG70 | 98 | 101 | 57* | 55* | | | 2 |
| 03 | CGG71 | 128 | 119 | 93 | 88 | | | 0 |
| 04 | CGG74 | 93 | 113 | 85 | 81 | | | 0 |
| 05 | CGG75 | 111 | 108 | 106 | 103 | | | 0 |
| 06 | CGG76 | 165* | 147 | 143 | 145 | | | 1 |
| 07 | CGG77 | 106 | 95 | 92 | 92 | | | 0 |
| 08 | CGG82 | 108 | 92 | 89 | 85 | | | 0 |
| 09 | CGG83 | 145 | 111 | 88 | 87 | | | 0 |
| 10 | CGG84 | 94 | 86 | 74 | 72 | | | 0 |
| 11 | CGG85 | 137 | 189* | 93 | 79 | | | 1 |
| 12 | CGG82MS | 116 | 104 | 94 | 90 | | | 0 |
| 13 | CGG82MSD | 101 | 92 | 73 | 71 | | | 0 |

| | ADVISORY QC LIMITS |
|---|---|
| TCX = Tetrachloro-m-xylene | ( 60-150) |
| DCB = Decachlorobiphenyl | ( 60-150) |

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

*Only 1 surrogate out on 1 column, >10% recovery, no action

2F
SOIL PESTICIDE SURROGATE RECOVERY

Ref. 4

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: SDG No.: CGG70

GC Column(1): RTX-1701 ID: 0.53(mm) GC Column(2): RTX-50 ID: 0.53(mm)

| | EPA SAMPLE NO. | TCX 1 %REC # | TCX 2 %REC # | DCB 1 %REC # | DCB 2 %REC # | OTHER (1) | OTHER (2) | TOT OUT |
|---|---|---|---|---|---|---|---|---|
| 01 | PBLK127 | 150 | 154* | 242* | 171* | | | 3 |
| 02 | CGG78 | 84 | 93 | 115 | 112 | | | 0 |
| 03 | CGG86 | 81 | 88 | 249* | 143 | | | 1 |
| 04 | CGG87 | 85 | 84 | 104 | 94 | | | 0 |
| 05 | CGG88 | 67 | 78 | 203* | 111 | | | 1 |
| 06 | CGG89 | 76 | 79 | 166* | 85 | | | 1 |
| 07 | CGG90 | 107 | 117 | 174* | 118 | | | 1 |
| 08 | CGG86MS | 73 | 79 | 121 | 68 | | | 0 |
| 09 | CGG86MSD | 76 | 79 | 205* | 134 | | | 1 |

| | ADVISORY QC LIMITS |
|---|---|
| TCX = Tetrachloro-m-xylene | ( 60-150) |
| DCB = Decachlorobiphenyl | ( 60-150) |

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

Relative Standard Deviation Worksheet

| Compound | Unspiked Sample CGG86 | MS CGG86MS | MSD CGG86MSD | Mean | Std Deviation | RSD |
|---|---|---|---|---|---|---|
| 1,3-Dichlorobenzene | 51 | 56 | 43 | 50.00 | 6.56 | 0.1311 |
| Naphthalene | 300 | 390 | 200 | 296.67 | 95.04 | 0.3204 |
| 2-Methylnaphthalene | 220 | 290 | 170 | 226.67 | 60.28 | 0.2659 |
| Acenaphthylene | 240 | 390 | 160 | 263.33 | 116.76 | 0.4434 |
| Dibenzofuran | 260 | ND | ND | 86.67 | 150.11 | ~~1.7321~~ Indeterminate |
| Fluorene | 390 | 540 | 380 | 436.67 | 89.63 | 0.2053 |
| Phenanthrene | 2100 | 3400 | 2200 | 2566.67 | 723.42 | 0.2819 |
| Anthracene | 630 | 880 | 690 | 733.33 | 130.51 | 0.1780 |
| Carbazole | 340 | 610 | 350 | 433.33 | 153.08 | 0.3533 |
| Di-n-butylphthalate | 62 | 44 | 52 | 52.67 | 9.02 | 0.1712 |
| Fluoranthene | 3500 | 4500 | 3300 | 3766.67 | 642.91 | 0.1707 |
| Butylbenzylphthalate | 330 | 430 | 58 | 272.67 | 192.51 | 0.7060 RSD = 70.6% |
| Benz[a]anthracene | 2000 | 2900 | 2300 | 2400.00 | 458.26 | 0.1909 |
| Chrysene | 1800 | 2600 | 1800 | 2066.67 | 461.88 | 0.2235 |
| Bis(2-ethylhexyl)phthalate | 1200 | 1700 | 820 | 1240.00 | 441.36 | 0.3559 |
| Di-n-octylphthalate | 130 | 130 | 71 | 110.33 | 34.06 | 0.3087 |
| Benzo[b]fluoranthene | 2600 | 3600 | 2700 | 2966.67 | 550.76 | 0.1856 |
| Benzo[k]fluoranthene | 1100 | 1200 | 1100 | 1133.33 | 57.74 | 0.0509 |
| Benzo[a]pyrene | 1800 | 2400 | 1900 | 2033.33 | 321.46 | 0.1581 |
| Indeno[1,2,3-c,d]pyrene | 1000 | 1200 | 890 | 1030.00 | 157.16 | 0.1526 |
| Dibenz[a,h]anthracene | 230 | 150 | 240 | 206.67 | 49.33 | 0.2387 |
| Benzo[g,h,i]perylene | 710 | 830 | 560 | 700.00 | 135.28 | 0.1933 |
| VOAs: | | | | | | |
| Acetone | 33 | 39 | 43 | 38.33 | 5.033 | 13% |

ND = Not detected

Ref. 5

ref. 5

6D

# PESTICIDE INITIAL CALIBRATION OF SINGLE COMPONENT ANALYTES

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SM0002 SAS No.: 7453C01 SDG No.: CGG72

Instrument ID: H5890B Level (x low): low 1.0 mid 4.0 high 16.0

GC Column: DB-1701 ID: 0.53(mm) Date(s) Analyzed: 09/21/92 09/22/92

SUPPORT DATA FOR MISREPORTED STANDARD.

| COMPOUND | RT OF STANDARDS LOW | MID | HIGH | MEAN RT | RT WINDOW FROM | TO |
|---|---|---|---|---|---|---|
| alpha-BHC | 13.63 | 13.63 | 13.65 | 13.64 | 13.59 | 13.69 |
| beta-BHC | 18.28 | 18.28 | 18.28 | 18.28 | 18.23 | 18.33 |
| delta-BHC | 19.30 | 19.32 | 19.32 | 19.31 | 19.26 | 19.36 |
| gamma-BHC (Lindane) | 15.30 | 15.30 | 15.30 | 15.30 | 15.25 | 15.35 |
| Heptachlor | 16.13 | 16.13 | 16.13 | 16.13 | 16.08 | 16.18 |
| Aldrin | 17.27 | 17.27 | 17.27 | 17.27 | 17.22 | 17.32 |
| Heptachlor epoxide | 19.98 | 20.00 | 19.98 | 19.99 | 19.92 | 20.06 |
| Endosulfan I | 21.10 | 21.10 | 21.10 | 21.10 | 21.03 | 21.17 |
| Dieldrin | 22.55 | 22.55 | 22.55 | 22.55 | 22.48 | 22.62 |
| 4,4'-DDE | 21.78 | 21.78 | 21.78 | 21.78 | 21.71 | 21.85 |
| Endrin | 23.37 | 23.37 | 23.35 | 23.36 | 23.29 | 23.43 |
| Endosulfan II | 25.23 | 25.23 | 25.23 | 25.23 | 25.16 | 25.30 |
| 4,4'-DDD | 24.87 | 24.87 | 24.87 | 24.87 | 24.80 | 24.94 |
| Endosulfan sulfate | 28.53 | 28.55 | 28.53 | 28.54 | 28.47 | 28.61 |
| 4,4'-DDT | 25.52 | 25.52 | 25.52 | 25.52 | 25.45 | 25.59 |
| Methoxychlor | 28.20 | 28.20 | 28.20 | 28.20 | 28.13 | 28.27 |
| Endrin ketone | 30.95 | 30.95 | 30.95 | 30.95 | 30.88 | 31.02 |
| Endrin aldehyde | 27.05 | 27.05 | 27.05 | 27.05 | 26.98 | 27.12 |
| alpha Chlordane | 21.48 | 21.48 | 21.48 | 21.48 | 21.41 | 21.55 |
| gamma Chlordane | 21.27 | 21.28 | 21.27 | 21.27 | 21.20 | 21.34 |
| Tetrachloro-m-xylene | 9.82 | 9.82 | 9.82 | 9.82 | 9.77 | 9.87 |
| Decachlorobiphenyl | 36.55 | 36.53 | 36.53 | 36.54 | 36.44 | 36.64 |

* Surrogate retention times are measured from Standard Mix A analyses

Retention time windows are +/- 0.05 minutes for all compounds that elu before Heptachlor epoxide, +/- 0.07 minutes for all other compounds, except +/- 0.10 minutes for Decachlorobiphenyl.

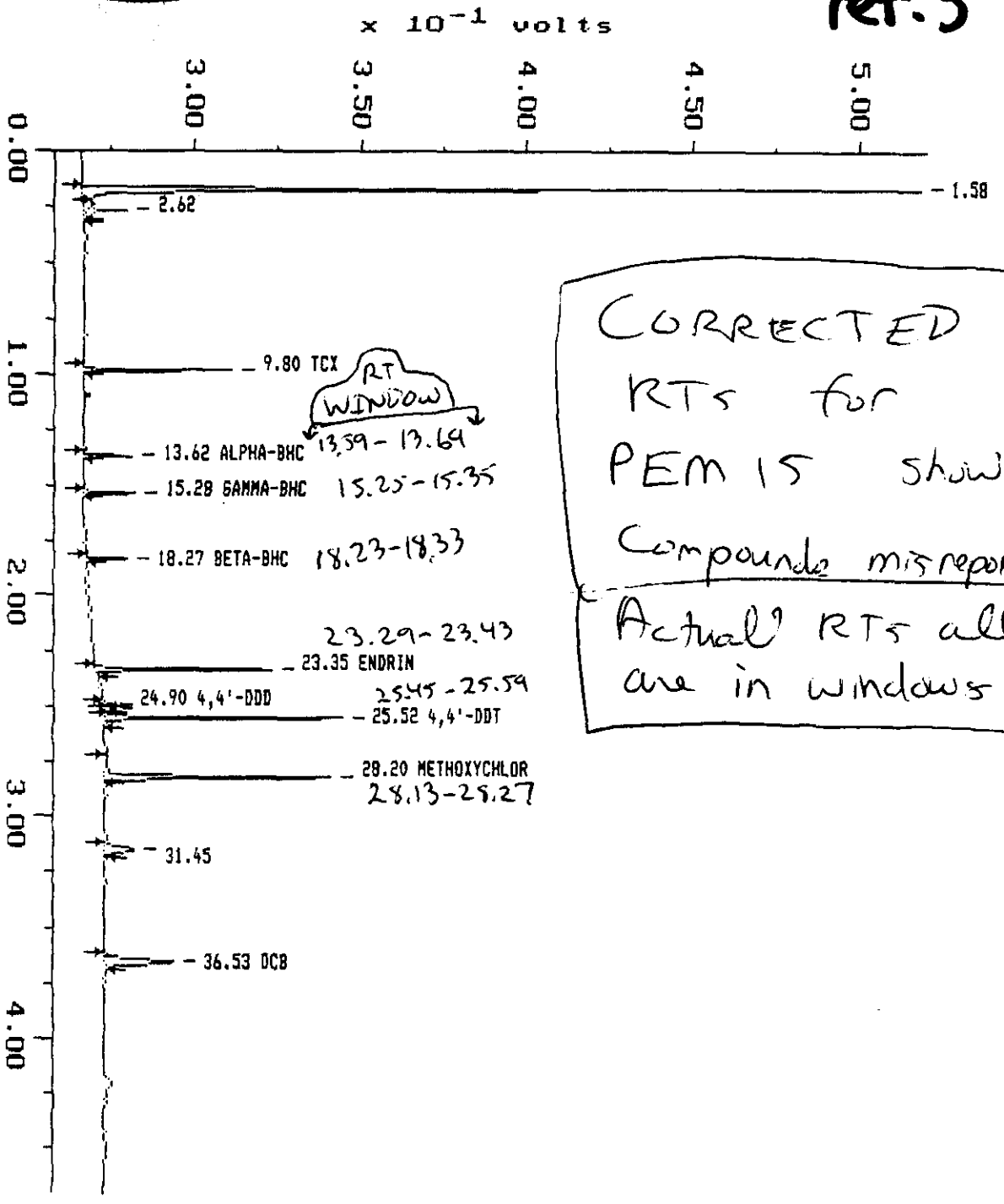
Sample: PEM15
Acquired: 21-SEP-92 15:27
Inj Vol: 1.00

Channel: DB-1701
Method: D:\MAX\PEST\SEP92\092192

Filename: 209EC230
Operator: JJB

000979

ref. 5




RT WINDOW

13.59 - 13.69

15.25 - 15.35

18.23 - 18.33

23.29 - 23.43

25.45 - 25.59

28.13 - 28.27

CORRECTED RTs for PEM 15 show ALL Compounds misreported.

Actual RTs all are in windows

7D ref. 5 000977

# PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SM0002 SAS No.: 7453C01 SDG No.: CGG72

GC Column: DB-1701 ID: 0.53(mm) Init. Calib. Date(s): 09/21/92 09/22/9

MISREPORTED STANDARD FROM DB608,

EPA Sample No. (PIBLK): PIBLK21 Date Analyzed : 09/19/92

Lab Sample ID (PIBLK): PIBLK21 Time Analyzed : 0736

EPA Sample No. (PEM): PEM15 Date Analyzed : 09/21/92

Lab Sample ID (PEM): PEM15 Time Analyzed : 1527

ALL COMPOUNDS OUTSIDE RT WINDOWS

| PEM COMPOUND | RT | RT WINDOW FROM | RT WINDOW TO | CALC AMOUNT (ng) | NOM AMOUNT (ng) | RPD |
|---|---|---|---|---|---|---|
| alpha-BHC | 13.73 | 13.59 | 13.69 | 0.0163 | 0.0100 | -63.0 |
| beta-BHC | 15.80 | 18.23 | 18.33 | 0.0153 | 0.0100 | -53.0 |
| gamma-BHC (Lindane) ☆ | 15.52 | 15.25 | 15.35 | 0.0148 | 0.0100 | -48.0 |
| Endrin ☆ | 25.25 | 23.29 | 23.43 | 0.0675 | 0.0500 | -35.0 |
| 4,4'-DDT ☆ | 26.95 | 25.45 | 25.59 | 0.206 | 0.100 | 999.9 |
| Methoxychlor ☆ | 32.13 | 28.13 | 28.27 | 0.320 | 0.250 | -28.0 |

4,4'-DDT % breakdown (1): 2.0 Endrin % breakdown (1): 12.6

Combined % breakdown (1): 14.6

QC LIMITS:

RPD of amounts in PEM must be less than or equal to 25.0%

4,4'-DDT breakdown must be less than or equal to 20.0%

Endrin breakdown must be less than or equal to 20.0%

Combined breakdown must be less than or equal to 30.0%

Actually, there was no out-of-control RT problem. Lab reported DB608 standard instead of DB1701 standard. Note RT's don't match GC chromatogram

8D ref.4 001028

# PESTICIDE ANALYTICAL SEQUENCE

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SMO002 SAS No.: 7453C01 SDG No.: CGG72

GC Column: DB-608 ID: 0.53(mm) Init. Calib. Date(s): 09/21/92 09/22/92

Instrument ID: H5890A

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
TCX: 10.58 DCB: 45.12

| | EPA SAMPLE NO. | LAB SAMPLE ID | DATE ANALYZED | TIME ANALYZED | TCX RT # | DCB RT # |
|---|---|---|---|---|---|---|
| 01 | RESC06 | RESC06 | 09/21/92 | 1436 | 10.63 | 45.17 |
| 02 | PEM15 | PEM15 | 09/21/92 | 1527 | 10.60 | 45.12 |
| 03 | AR166006 | AR166006 | 09/21/92 | 1618 | 10.58 | 45.12 |
| 04 | AR122106 | AR122106 | 09/21/92 | 1709 | 10.58 | 45.13 |
| 05 | AR123206 | AR123206 | 09/21/92 | 1800 | 10.58 | 45.12 |
| 06 | AR124210 | AR124210 | 09/21/92 | 1851 | 10.58 | 45.13 |
| 07 | AR124806 | AR124806 | 09/21/92 | 1942 | 10.58 | 45.12 |
| 08 | AR125406 | AR125406 | 09/21/92 | 2033 | 10.58 | 45.12 |
| 09 | TOXAPH06 | TOXAPH06 | 09/21/92 | 2124 | 10.58 | 45.13 |
| 10 | INDAL06 | INDAL06 | 09/21/92 | 2215 | 10.58 | 45.12 |
| 11 | INDBL06 | INDBL06 | 09/21/92 | 2306 | 10.58 | 45.10 |
| 12 | INDAM12 | INDAM12 | 09/21/92 | 2357 | 10.58 | 45.12 |
| 13 | INDBM12 | INDBM12 | 09/22/92 | 0049 | 10.58 | 45.13 |
| 14 | INDAH06 | INDAH06 | 09/22/92 | 0139 | 10.58 | 45.12 |
| 15 | INDBH06 | INDBH06 | 09/22/92 | 0231 | 10.58 | 45.10 |
| 16 | PIBLK22 | PIBLK22 | 09/22/92 | 0322 | 10.58 | 45.10 |
| 17 | PEM16 | PEM16 | 09/22/92 | 0413 | 10.58 | 45.12 |
| 18 | PIBLK28 | PIBLK28 | 09/24/92 | 1426 | 10.65 * | 45.15 |
| 19 | PEM18 | PEM18 | 09/24/92 | 1517 | 10.58 | 45.12 |
| 20 | PBLK7 | PBLK7 | 09/24/92 | 1608 | 10.58 | 45.12 |
| 21 | CGG80 | 8303-2 | 09/24/92 | 1659 | 10.58 | 45.13 |
| 22 | PIBLK29 | PIBLK29 | 09/24/92 | 1750 | 10.58 | 45.12 |
| 23 | INDAM14 | INDAM14 | 09/24/92 | 1841 | 10.58 | 45.10 |
| 24 | INDBM14 | INDBM14 | 09/24/92 | 1932 | 10.58 | 45.10 |

mish out

endrin DDT out

QC LIMITS

TCX = Tetrachloro-m-xylene (+/- 0.05 MINUTES)
DCB = Decachlorobiphenyl (+/- 0.10 MINUTES)

# Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

CGG80 had **no** RT window problems for TCX/DCB, but lab reported a compound outside windows (DDD should have been ND)

p 3/3

ref.6

6E

# PESTICIDE INITIAL CALIBRATION OF SINGLE COMPONENT ANALYTES

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SM0002 SAS No.: 7453C01 SDG No.: CGG72

Instrument ID: H5890B Level (x low): low 1.0 mid 4.0 high 16.0

GC Column: DB-1701 ID: 0.53(mm) Date(s) Analyzed: 09/18/92 09/18/92

Noncompliant initial calib

| COMPOUND | CALIBRATION FACTORS LOW | MID | HIGH | MEAN | %RSD |
|---|---|---|---|---|---|
| alpha-BHC | 8390000 | 10700000 | 17900000 | 12300000 | 40.2 |
| beta-BHC | 7930000 | 9630000 | 10400000 | 9320000 | 13.6 |
| delta-BHC | 6790000 | 9140000 | 14000000 | 9980000 | 36.9 |
| gamma-BHC (Lindane) | 9200000 | 11600000 | 17200000 | 12700000 | 32.4 |
| Heptachlor | 11100000 | 11400000 | 13100000 | 11900000 | 9.1 |
| Aldrin | 9150000 | 11400000 | 15600000 | 12000000 | 27.2 |
| Heptachlor epoxide | 10300000 | 12000000 | 14700000 | 12300000 | 18.0 |
| Endosulfan I | 9200000 | 9800000 | 12000000 | 10300000 | 14.3 |
| Dieldrin | 8990000 | 10600000 | 13200000 | 10900000 | 19.4 |
| 4,4'-DDE | 8640000 | 12300000 | 15100000 | 12000000 | 27.0 |
| Endrin | 6720000 | 8240000 | 9910000 | 8290000 | 19.2 |
| Endosulfan II | 9300000 | 11500000 | 12900000 | 11200000 | 16.2 |
| 4,4'-DDD | 6690000 | 7910000 | 9590000 | 8060000 | 18.1 |
| Endosulfan sulfate | 7140000 | 8850000 | 10100000 | 8700000 | 17.1 |
| 4,4'-DDT | 4160000 | 5410000 | 7010000 | 5530000 | 25.8 |
| Methoxychlor | 3570000 | 3970000 | 3890000 | 3810000 | 5.6 |
| Endrin ketone | 6490000 | 8420000 | 10300000 | 8400000 | 22.7 |
| Endrin aldehyde | 4150000 | 4370000 | 4440000 | 4320000 | 3.5 |
| alpha Chlordane | 12300000 | 14800000 | 16500000 | 14500000 | 14.5 |
| gamma Chlordane | 12100000 | 13800000 | 16200000 | 14000000 | 14.7 |
| Tetrachloro-m-xylene | 14200000 | 15200000 | 16300000 | 15200000 | 6.9 |
| Decachlorobiphenyl | 18500000 | 16500000 | 13900000 | 16300000 | 14.2 |

* Surrogate calibration factors are measured from Standard Mix A analyses

%RSD must be less than or equal 20.0% for all compounds except the surrogates, where %RSD must be less than or equal to 30.0%. Up to two target compounds, but not surrogates, may have %RSD greater than 20.0% but less than or equal to 30.0%.

3 > 30% RSD SOW allows Ø
7 > 20% RSD SOW allows 2

ref. 6 000762

6E

# PESTICIDE INITIAL CALIBRATION OF SINGLE COMPONENT ANALYTES

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SM0002 SAS No.: 7453C01 SDG No.: CGG72

Instrument ID: H5890B Level (x low): low 1.0 mid 4.0 high 16.0

GC Column: DB-1701 ID: 0.53(mm) Date(s) Analyzed: 09/02/92 09/02/92

Noncompliant initial calib.

| COMPOUND | CALIBRATION FACTORS LOW | MID | HIGH | MEAN | %RSD |
|---|---|---|---|---|---|
| alpha-BHC | 8590000 | 10900000 | 16900000 | 12100000 | * 35.4 |
| beta-BHC | 9290000 | 9910000 | 11000000 | 10100000 | 8.6 |
| delta-BHC | 7740000 | 8860000 | 14200000 | 10300000 | * 33.6 |
| gamma-BHC (Lindane) | 9530000 | 12300000 | 17100000 | 13000000 | * 29.5 |
| Heptachlor | 11700000 | 12100000 | 13500000 | 12400000 | 7.6 |
| Aldrin | 10800000 | 11700000 | 16500000 | 13000000 | * 23.6 |
| Heptachlor epoxide | 12200000 | 12400000 | 15500000 | 13400000 | 13.8 |
| Endosulfan I | 9920000 | 10900000 | 13100000 | 11300000 | 14.4 |
| Dieldrin | 9680000 | 11600000 | 14300000 | 11900000 | 19.6 |
| 4,4'-DDE | 10200000 | 12100000 | 15800000 | 12700000 | * 22.4 |
| Endrin | 7420000 | 7860000 | 10100000 | 8460000 | 17.0 |
| Endosulfan II | 10900000 | 11300000 | 13600000 | 11900000 | 12.2 |
| 4,4'-DDD | 7270000 | 8630000 | 10700000 | 8870000 | 19.5 |
| Endosulfan sulfate | 7860000 | 8170000 | 10400000 | 8810000 | 15.7 |
| 4,4'-DDT | 4550000 | 5110000 | 7430000 | 5700000 | * 26.8 |
| Methoxychlor | 3640000 | 3760000 | 4090000 | 3830000 | 6.1 |
| Endrin ketone | 6780000 | 7400000 | 9960000 | 8050000 | * 21.0 |
| Endrin aldehyde | 2960000 | 2580000 | 3390000 | 2980000 | 13.6 |
| alpha Chlordane | 14300000 | 14700000 | 17400000 | 15500000 | 10.9 |
| gamma Chlordane | 14100000 | 13900000 | 17000000 | 15000000 | 11.6 |
| Tetrachloro-m-xylene | 14400000 | 15200000 | 15800000 | 15100000 | 4.6 |
| Decachlorobiphenyl | 17500000 | 15700000 | 15100000 | 16100000 | 7.8 |

* Surrogate calibration factors are measured from Standard Mix A analyses

%RSD must be less than or equal 20.0% for all compounds except the surrogates, where %RSD must be less than or equal to 30.0%. Up to two target compounds, but not surrogates, may have %RSD greater than 20.0% but less than or equal to 30.0%.

2 > 30% RSD. so allows Ø.
7 > 20% RSD. So allows 2

No positive results for any of these compounds in 9/2 runs associated with >30% RSD compounds (NO ACTION)

ref. 7 000989

7D
PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SM0002 SAS No.: 7453C01 SDG No.: CGG72

GC Column: DB-1701 ID: 0.53(mm) Init. Calib. Date(s): 09/21/92 09/22/92

NON

EPA Sample No. (PIBLK): PIBLK28 Date Analyzed : 09/24/92

Lab Sample ID (PIBLK): PIBLK28 Time Analyzed : 1426

EPA Sample No. (PEM): PEM18 Date Analyzed : 09/24/92

Lab Sample ID (PEM): PEM18 Time Analyzed : 1517

one of 2 consecutive PEMs w/ DDT %D out

| PEM COMPOUND | RT | RT WINDOW FROM | RT WINDOW TO | CALC AMOUNT (ng) | NOM AMOUNT (ng) | RPD |
|---|---|---|---|---|---|---|
| alpha-BHC | 13.63 | 13.59 | 13.69 | 0.00945 | 0.0100 | 5.5 |
| beta-BHC | 18.28 | 18.23 | 18.33 | 0.0119 | 0.0100 | -19.0 |
| gamma-BHC (Lindane) | 15.28 | 15.25 | 15.35 | 0.00957 | 0.0100 | 4.3 |
| Endrin | 23.35 | 23.29 | 23.43 | 0.0607 | 0.0500 | -21.4 |
| 4,4'-DDT | 25.52 | 25.45 | 25.59 | 0.156 | 0.100 | -56.0 * |
| Methoxychlor | 28.20 | 28.13 | 28.27 | 0.311 | 0.250 | -24.4 |

4,4'-DDT % breakdown (1): 3.5 Endrin % breakdown (1): 2.2

Combined % breakdown (1): 5.7

QC LIMITS:

RPD of amounts in PEM must be less than or equal to 25.0%

4,4'-DDT breakdown must be less than or equal to 20.0%

Endrin breakdown must be less than or equal to 20.0%

Combined breakdown must be less than or equal to 30.0%

* No positive results in affected samples; no action

7D

# PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: PRECISION A L  Contract: _____

Lab Code: PRECIS  Case No.: SM0002  SAS No.: 7453C01  SDG No.: CGG72

GC Column: DB-1701  ID: 0.53(mm)  Init. Calib. Date(s): 09/21/92  09/22/92

EPA Sample No. (PIBLK): PIBLK22  Date Analyzed : 09/22/92

Lab Sample ID (PIBLK): PIBLK22  Time Analyzed : 0322

EPA Sample No. (PEM): PEM16  Date Analyzed : 09/22/92

Lab Sample ID (PEM): PEM16  Time Analyzed : 0413

One of 2 consecutive PEMs w/ or without DDT

| PEM COMPOUND | RT | RT WINDOW FROM | RT WINDOW TO | CALC AMOUNT (ng) | NOM AMOUNT (ng) | RPD |
|---|---|---|---|---|---|---|
| alpha-BHC | 13.65 | 13.59 | 13.69 | 0.00866 | 0.0100 | 13.4 |
| beta-BHC | 18.28 | 18.23 | 18.33 | 0.0105 | 0.0100 | -5.0 |
| gamma-BHC (Lindane) | 15.30 | 15.25 | 15.35 | 0.00904 | 0.0100 | 9.6 |
| Endrin | 23.37 | 23.29 | 23.43 | 0.0590 | 0.0500 | -18.0 |
| 4,4'-DDT | 25.53 | 25.45 | 25.59 | 0.137 | 0.100 | -37.0 * |
| Methoxychlor | 28.20 | 28.13 | 28.27 | 0.301 | 0.250 | -20.4 |

4,4'-DDT % breakdown (1): 4.1  Endrin % breakdown (1): 0.0

Combined % breakdown (1): 4.1

QC LIMITS:

RPD of amounts in PEM must be less than or equal to 25.0%

4,4'-DDT breakdown must be less than or equal to 20.0%

Endrin breakdown must be less than or equal to 20.0%

Combined breakdown must be less than or equal to 30.0%

* No positive results in affected samples; no action

ref. 7

001029

8D
PESTICIDE ANALYTICAL SEQUENCE

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECTS Case No.: SM0002 SAS No.: 7453C01 SDG No.: CGG72

GC Column: DB-1701 ID: 0.53(mm) Init. Calib. Date(s): 09/21/92 09/22/92

Instrument ID: H5890B PEM 15 noncompliant initial calib

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
TCX: 9.82 DCB: 36.54

D.T.E. 9/29/92

| | EPA SAMPLE NO. | LAB SAMPLE ID | DATE ANALYZED | TIME ANALYZED | TCX RT # | DCB RT # |
|---|---|---|---|---|---|---|
| 01 | RESC06 | RESC06 | 09/21/92 | 1436 | 9.85 | 36.57 |
| 02 | PEM15 | PEM15 | 09/21/92 | 1527 | ~~10.60~~ 9.80 * | ~~45.12~~ 36.57 * |
| 03 | AR166006 | AR166006 | 09/21/92 | 1618 | 9.80 | 36.52 |
| 04 | AR122106 | AR122106 | 09/21/92 | 1709 | 9.80 | 36.53 |
| 05 | AR123206 | AR123206 | 09/21/92 | 1800 | 9.82 | 36.53 |
| 06 | AR124210 | AR124210 | 09/21/92 | 1851 | 9.82 | 36.55 |
| 07 | AR124806 | AR124806 | 09/21/92 | 1942 | 9.82 | 36.55 |
| 08 | AR125406 | AR125406 | 09/21/92 | 2033 | 9.82 | 36.55 |
| 09 | TOXAPH06 | TOXAPH06 | 09/21/92 | 2124 | 9.82 | 36.53 |
| 10 | INDAL06 | INDAL06 | 09/21/92 | 2215 | 9.82 | 36.55 |
| 11 | INDBL06 | INDBL06 | 09/21/92 | 2306 | 9.82 | 36.55 |
| 12 | INDAM12 | INDAM12 | 09/21/92 | 2357 | 9.82 | 36.53 |
| 13 | INDBM12 | INDBM12 | 09/22/92 | 0049 | 9.82 | 36.53 |
| 14 | INDAH06 | INDAH06 | 09/22/92 | 0139 | 9.82 | 36.53 |
| 15 | INDBH06 | INDBH06 | 09/22/92 | 0231 | 9.82 | 36.53 |
| 16 | PIBLK22 | PIBLK22 | 09/22/92 | 0322 | 9.83 | 36.55 |
| 17 | PEM16 | PEM16 | 09/22/92 | 0413 | 9.83 | 36.55 |
| 18 | PIBLK28 | PIBLK28 | 09/24/92 | 1426 | 9.82 | 36.55 |
| 19 | PEM18 | PEM18 | 09/24/92 | 1517 | 9.82 | 36.53 |
| 20 | PBLK7 | PBLK7 | 09/24/92 | 1608 | 9.82 | 36.53 |
| 21 | CGG80 | 8303-2 | 09/24/92 | 1659 | 9.82 | 36.53 |
| 22 | PIBLK29 | PIBLK29 | 09/24/92 | 1750 | 9.82 | 36.55 |
| 23 | INDAM14 | INDAM14 | 09/24/92 | 1841 | 9.82 | 36.53 |
| 24 | INDBM14 | INDBM14 | 09/24/92 | 1932 | 9.82 | 36.53 |

%D methoxychlor out

%D DDT out

%D DDT out

QC LIMITS
TCX = Tetrachloro-m-xylene (+/- 0.05 MINUTES)
DCB = Decachlorobiphenyl (+/- 0.10 MINUTES)

# Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

2 consecutive PEMs (%D DDT) out - should have redone CGG80

6E

ref. 6

# PESTICIDE INITIAL CALIBRATION OF SINGLE COMPONENT ANALYTES

Lab Name: PRECISION A L  Contract: _____

Lab Code: PRECIS  Case No.: SM0002  SAS No.: 7453C01  SDG No.: CGG72

Instrument ID: H5890B  Level (x low): low 1.0 mid 4.0 high 16.0

GC Column: DB-1701  ID: 0.53(mm)  Date(s) Analyzed: 09/21/92 09/22/92

Noncompliant Initial Calibration

| COMPOUND | CALIBRATION FACTORS LOW | MID | HIGH | MEAN | %RSD |
|---|---|---|---|---|---|
| alpha-BHC | 8250000 | 10700000 | 17300000 | 12100000 | * 38.7 |
| beta-BHC | 7440000 | 8370000 | 9490000 | 8430000 | 12.2 |
| delta-BHC | 6480000 | 8040000 | 12700000 | 9070000 | * 35.7 |
| gamma-BHC (Lindane) | 8830000 | 11400000 | 16700000 | 12300000 | * 32.6 |
| Heptachlor | 10400000 | 10600000 | 12000000 | 11000000 | 7.9 |
| Aldrin | 8900000 | 10200000 | 14900000 | 11300000 | * 27.8 |
| Heptachlor epoxide | 9530000 | 10500000 | 13800000 | 11300000 | 19.8 |
| Endosulfan I | 8620000 | 9360000 | 12400000 | 10100000 | 19.8 |
| Dieldrin | 8110000 | 10100000 | 13300000 | 10500000 | * 24.9 |
| 4,4'-DDE | 7870000 | 9630000 | 12700000 | 10100000 | * 24.3 |
| Endrin | 6630000 | 7880000 | 9460000 | 7990000 | 17.8 |
| Endosulfan II | 8440000 | 10100000 | 12200000 | 10200000 | 18.4 |
| 4,4'-DDD | 5740000 | 6700000 | 8300000 | 6910000 | 18.7 |
| Endosulfan sulfate | 6840000 | 7580000 | 9530000 | 7980000 | 17.4 |
| 4,4'-DDT | 3980000 | 5050000 | 6940000 | 5320000 | * 28.2 |
| Methoxychlor | 3070000 | 3280000 | 3340000 | 3230000 | 4.4 |
| Endrin ketone | 6360000 | 7380000 | 9650000 | 7800000 | * 21.6 |
| Endrin aldehyde | 3510000 | 3630000 | 4090000 | 3740000 | 8.2 |
| alpha Chlordane | 11400000 | 12800000 | 15700000 | 13300000 | 16.5 |
| gamma Chlordane | 11100000 | 12200000 | 15300000 | 12900000 | 16.9 |
| Tetrachloro-m-xylene | 12600000 | 13700000 | 14900000 | 13700000 | 8.4 |
| Decachlorobiphenyl | 18500000 | 17000000 | 15600000 | 17000000 | 8.5 |

* Surrogate calibration factors are measured from Standard Mix A analyses

%RSD must be less than or equal 20.0% for all compounds except the surrogates, where %RSD must be less than or equal to 30.0%. Up to two target compounds, but not surrogates, may have %RSD greater than 20.0% but less than or equal to 30.0%.

3 > 30% RSD. So allows 0
8 > 20% RSD. So allows 2

QUANT REPORT

Operator ID: (b) (4)
Output File: ^B9005::QF
Data File: >B9005::D3
Name: SBLK01 LOW SOIL
Misc: MBLK0828

Quant Rev: 7
Quant Time: 920902 11:02
Injected at: 920902 10:19
Dilution Factor: 1.00000
Instrument ID: BNA
BTL# 1

ID File: ID_390::QF
Title: IFB
Last Calibration: 920528 08:44
Last Qcal Time: 920902 09:26

| | Compound | | Q ion | Scan# | Area | Conc | Units | q |
|---|---|---|---|---|---|---|---|---|
| 1) | *CI30 1,4-Dichlorobenzene-d4 | | 152.0 | 566 | 69295 | 40.00 | ng | 98 |
| 3) | CS50 2-Fluorophenol | S | 112.0 | 304 | 56003 | 21.09 | ng | 91 |
| 4) | CS45 Phenol-d5 | S | 99.0 | 488 | 63826 | 19.02 | ng | 94 |
| 7) | CS35 2-Chlorophenol-d4 | S | 132.0 | 517 | 53668 | 22.40 | ng | 94 |
| 12) | CS40 1,2-Dichlorobenzene-d4 | S | 152.0 | 599 | 27518 | 20.84 | ng | 97 |
| 19) | *CI40 Naphthalene-d8 | | 136.0 | 859 | 180529 | 40.00 | ng | 94 |
| 20) | CS20 Nitrobenzene-d5 | S | 82.0 | 690 | 40528 | 18.51 | ng | 95 |
| 34) | *CI50 Acenaphthene-d10 | | 164.0 | 1294 | 131425 | 40.00 | ng | 97 |
| 39) | CS25 2-Fluorobiphenyl | S | 172.0 | 1131 | 51333 | 12.08 | ng | 98 |
| 54) | CS55 2,4,6-Tribromophenol | S | 330.0 | 1491 | 25733 | 25.22 | ng | 93 |
| 55) | *CI60 Phenanthrene-d10 | | 188.0 | 1663 | 252193 | 40.00 | ng | 89 |
| 65) | C650 Di-n-butylphthalate | | 149.0 | 1817 | 499604 | 52.96 | ng | 99 |
| 67) | *CI70 Chrysene-d12 | | 240.0 | 2321 | 246909 | 40.00 | ng | 96 |
| 70) | CS30 Terphenyl-d14 | S | 244.0 | 2062 | 120929 | 18.49 | ng | 93 |
| 75) | C745 Bis(2-Ethylhexyl)phthalat | | 149.0 | 2328 | 134399 | 28.13 | ng | 90 |
| 76) | *CI75 Perylene-d12 | | 264.0 | 2730 | 246105 | 40.00 | ng | 98 |

* Compound is ISTD

ND = Fails ID Criteria
Not Detected
+ = Positive I.D.
SC = Spiked Compound

US 9/10/92

Results were not converted to soil conc. units, making a contaminated blank (>5 x CRQL) appear much lower.

7D ref. 7 000976

# PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SMQ002 SAS No.: 7453C01 SDG No.: CGG72

GC Column: DB-608 ID: 0.53(mm) Init. Calib. Date(s): 09/21/92 09/22/92

EPA Sample No. (PIBLK): PIBLK21 Date Analyzed : 09/19/92

Lab Sample ID (PIBLK): PIBLK21 Time Analyzed : 0736

EPA Sample No. (PEM): PEM15 Date Analyzed : 09/21/92

Lab Sample ID (PEM): PEM15 Time Analyzed : 1527

PEM from initial calib. ~ Non compliant %D - should be not

| PEM COMPOUND | RT | RT WINDOW FROM | RT WINDOW TO | CALC AMOUNT (ng) | NOM AMOUNT (ng) | RPD |
|---|---|---|---|---|---|---|
| alpha-BHC | 13.73 | 13.68 | 13.78 | 0.00795 | 0.0100 | 20.5 |
| beta-BHC | 15.80 | 15.75 | 15.85 | 0.00956 | 0.0100 | 4.4 |
| gamma-BHC (Lindane) | 15.52 | 15.47 | 15.57 | 0.00817 | 0.0100 | 18.3 |
| Endrin | 25.25 | 25.17 | 25.31 | 0.0516 | 0.0500 | -3.2 |
| 4,4'-DDT | 26.95 | 26.87 | 27.01 | 0.0938 | 0.100 | 6.2 |
| Methoxychlor | 32.13 | 32.06 | 32.20 | 0.187 | 0.250 | 25.2 * |

4,4'-DDT % breakdown (1): 1.3 Endrin % breakdown (1): 4.2

Combined % breakdown (1): 5.5

QC LIMITS:

RPD of amounts in PEM must be less than or equal to 25.0%

4,4'-DDT breakdown must be less than or equal to 20.0%

Endrin breakdown must be less than or equal to 20.0%

Combined breakdown must be less than or equal to 30.0%

* No positive methoxychlor results in affected samples; no action

000025

EPA SAMPLE NO.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

ref.11

RE-analysis Done under Noncompliant Initial Calib

CGG81RE

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SMO002 SAS No.: 7453C01 SDG No.: CGG72

Matrix: (soil/water) SOIL Lab Sample ID: 9208251-1RE

Sample wt/vol: 5.00 (g/mL) G Lab File ID: A9035

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: not dec. 8 Date Analyzed: 09/02/92

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

| 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 | 28 | B |
| 67-64-1 | Acetone | 6 | BJ |
| 75-15-0 | Carbon Disulfide | 1 | J |
| 75-35-4 | 1,1-Dichloroethene | 11 | U |
| 75-34-3 | 1,1-Dichloroethane | 11 | U |
| 540-59-0 | 1,2-Dichloroethene (total) | 11 | U |
| 67-66-3 | Chloroform | 11 | U |
| 107-06-2 | 1,2-Dichloroethane | 11 | U |
| 78-93-3 | 2-Butanone | 11 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 11 | U |
| 56-23-5 | Carbon Tetrachloride | 11 | U |
| 75-27-4 | Bromodichloromethane | 11 | U |
| 78-87-5 | 1,2-Dichloropropane | 11 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 11 | U |
| 79-01-6 | Trichloroethene | 11 | U |
| 124-48-1 | Dibromochloromethane | 11 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 11 | U |
| 71-43-2 | Benzene | 11 | U |
| 10061-02-6 | trans-1,3-Dichloropropene | 11 | U |
| 75-25-2 | Bromoform | 11 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 11 | U |
| 591-78-6 | 2-Hexanone | 11 | U |
| 127-18-4 | Tetrachloroethene | 11 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 11 | U |
| 108-88-3 | Toluene | 11 | U |
| 108-90-7 | Chlorobenzene | 11 | U |
| 100-41-4 | Ethylbenzene | 11 | U |
| 100-42-5 | Styrene | 11 | U |
| 1330-20-7 | Xylene (total) | 11 | U |

000013

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET ref.11

RE-anal. Done under Noncompliant initial cal.

EPA SAMPLE NO.

CGG73RE

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SMO002 SAS No.: 7453C01 SDG No.: CGG72

Matrix: (soil/water) SOIL Lab Sample ID: 9208251-3RE

Sample wt/vol: 5.10 (g/mL) G Lab File ID: A9039

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: not dec. 7 Date Analyzed: 09/02/92

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

| 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 | 14 | B |
| 67-64-1 | Acetone | 5 | BJ |
| 75-15-0 | Carbon Disulfide | 11 | U |
| 75-35-4 | 1,1-Dichloroethene | 11 | U |
| 75-34-3 | 1,1-Dichloroethane | 11 | U |
| 540-59-0 | 1,2-Dichloroethene (total) | 11 | U |
| 67-66-3 | Chloroform | 11 | U |
| 107-06-2 | 1,2-Dichloroethane | 11 | U |
| 78-93-3 | 2-Butanone | 11 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 11 | U |
| 56-23-5 | Carbon Tetrachloride | 11 | U |
| 75-27-4 | Bromodichloromethane | 11 | U |
| 78-87-5 | 1,2-Dichloropropane | 11 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 11 | U |
| 79-01-6 | Trichloroethene | 11 | U |
| 124-48-1 | Dibromochloromethane | 11 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 11 | U |
| 71-43-2 | Benzene | 11 | U |
| 10061-02-6 | trans-1,3-Dichloropropene | 11 | U |
| 75-25-2 | Bromoform | 11 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 11 | U |
| 591-78-6 | 2-Hexanone | 11 | U |
| 127-18-4 | Tetrachloroethene | 11 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 11 | U |
| 108-88-3 | Toluene | 11 | U |
| 108-90-7 | Chlorobenzene | 11 | U |
| 100-41-4 | Ethylbenzene | 11 | U |
| 100-42-5 | Styrene | 11 | U |
| 1330-20-7 | Xylene (total) | 11 | U |

# APPENDIX B

ref. 23

7A

VOLATILE CONTINUING CALIBRATION CHECK

000232

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SM0002 SAS No.: 7453C01 SDG No.: CGG72

Instrument ID: HPVOA Calibration date: 09/02/92 Time: 1254

Lab File ID: A9029 Init. Calib. Date(s): 08/26/92 08/26/92

Heated Purge: (Y/N) Y Init. Calib. Times: 0936 1212

GC Column: DB-624 ID: 0.530(mm)

| COMPOUND | $\overline{RRF}$ | RRF50 | MIN RRF | %D | MAX %D |
|---|---|---|---|---|---|
| Chloromethane | 0.686 | 0.373 | 0.010 | 45.6 * | |
| Bromomethane | 1.337 | 1.191 | 0.100 | 10.9 | 25.0 |
| Vinyl Chloride | 1.125 | 1.349 | 0.100 | -19.9 | 25.0 |
| Chloroethane | 0.883 | 0.820 | 0.010 | 7.1 | |
| Methylene Chloride | 2.712 | 2.230 | 0.010 | 17.8 | |
| Acetone | 1.419 | 2.104 | 0.010 | -48.3 * | |
| Carbon Disulfide | 4.339 | 4.547 | 0.010 | -4.8 | |
| 1,1-Dichloroethene | 1.476 | 1.559 | 0.100 | -5.6 | 25.0 |
| 1,1-Dichloroethane | 3.289 | 3.441 | 0.200 | -4.6 | 25.0 |
| 1,2-Dichloroethene (total) | 0.839 | 0.879 | 0.010 | -4.8 | |
| Chloroform | 0.431 | 0.439 | 0.200 | -1.9 | 25.0 |
| 1,2-Dichloroethane | 2.153 | 1.818 | 0.100 | 15.6 | 25.0 |
| 2-Butanone | 1.741 | 2.016 | 0.010 | -15.8 | |
| 1,1,1-Trichloroethane | 0.916 | 0.989 | 0.100 | -8.0 | 25.0 |
| Carbon Tetrachloride | 0.835 | 0.902 | 0.100 | -8.0 | 25.0 |
| Bromodichloromethane | 1.138 | 1.552 | 0.200 | -36.4 * | 25.0 |
| 1,2-Dichloropropane | 0.452 | 0.407 | 0.010 | 10.0 | |
| cis-1,3-Dichloropropene | 0.887 | 1.038 | 0.200 | -17.0 | 25.0 |
| Trichloroethene | 0.405 | 0.355 | 0.300 | 12.4 | 25.0 |
| Dibromochloromethane | 1.080 | 1.287 | 0.100 | -19.2 | 25.0 |
| 1,1,2-Trichloroethane | 0.485 | 0.573 | 0.100 | -18.1 | 25.0 |
| Benzene | 1.772 | 1.895 | 0.500 | -6.9 | 25.0 |
| trans-1,3-Dichloropropene | 0.811 | 0.958 | 0.100 | -18.1 | 25.0 |
| Bromoform | 0.869 | 1.067 | 0.100 | -22.8 | 25.0 |
| 4-Methyl-2-Pentanone | 0.707 | 0.561 | 0.010 | 20.6 | |
| 2-Hexanone | 0.530 | 0.514 | 0.010 | 3.0 | |
| Tetrachloroethene | 0.505 | 0.492 | 0.200 | 2.6 | 25.0 |
| 1,1,2,2-Tetrachloroethane | 0.752 | 0.676 | 0.500 | 10.1 | 25.0 |
| Toluene | 0.930 | 0.832 | 0.400 | 10.5 | 25.0 |
| Chlorobenzene | 1.104 | 1.055 | 0.500 | 4.4 | 25.0 |
| Ethylbenzene | 0.481 | 0.435 | 0.100 | 9.6 | 25.0 |
| Styrene | 1.055 | 0.999 | 0.300 | 5.3 | 25.0 |
| Xylene (total) | 0.589 | 0.570 | 0.300 | 3.2 | 25.0 |
| Toluene-d8 | 1.549 | 1.475 | 0.010 | 4.8 | |
| Bromofluorobenzene | 0.867 | 0.808 | 0.200 | 6.8 | 25.0 |
| 1,2-Dichloroethane-d4 | 1.728 | 1.509 | 0.010 | 12.7 | |

All other compounds must meet a minimum RRF of 0.010.

* No positive detects not attributable to lab contamination, no action

ref.24 000524

7C

# SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: PRECISION_A_L Contract: _____

Lab Code: PRECIS Case No.: SMO002 SAS No.: 7453C01 SDG No.: CGG72

Instrument ID: HPBNA Calibration date: 09/02/92 Time: 0926

Lab File ID: B9004 Init. Calib. Date(s): 05/08/92 05/08/92

Init. Calib. Times: 1446 1810

| COMPOUND | $\overline{RRF}$ | RRF50 | MIN RRF | %D | MAX %D | |
|---|---|---|---|---|---|---|
| Diethylphthalate | 1.614 | 1.419 | 0.010 | 12.1 | | |
| 4-Chlorophenyl-phenylether | 0.673 | 0.592 | 0.400 | 12.0 | 25.0 | |
| Fluorene | 1.285 | 1.235 | 0.900 | 3.9 | 25.0 | |
| 4-Nitroaniline | 0.191 | 0.142 | 0.010 | 25.6 * | | |
| 4,6-Dinitro-2-methylphenol | 0.160 | 0.168 | 0.010 | -5.0 | | |
| N-Nitrosodiphenylamine (1) | 0.334 | 0.181 | 0.010 | 45.8 * | | CGG73RE |
| 4-Bromophenyl-phenylether | 0.272 | 0.259 | 0.100 | 4.8 | 25.0 | CGG79 |
| Hexachlorobenzene | 0.356 | 0.345 | 0.100 | 3.1 | 25.0 | CGG |
| Pentachlorophenol | 0.215 | 0.224 | 0.050 | -4.2 | 25.0 | |
| Phenanthrene | 1.165 | 1.078 | 0.700 | 7.5 | 25.0 | CGG81RE |
| Anthracene | 1.132 | 1.213 | 0.700 | -7.2 | 25.0 | |
| Carbazole | 0.326 | 0.259 | 0.010 | 20.6 | | |
| Di-n-Butylphthalate | 1.587 | 1.496 | 0.010 | 5.7 | | |
| Fluoranthene | 1.246 | 1.258 | 0.600 | -1.0 | 25.0 | |
| Pyrene | 1.507 | 1.524 | 0.600 | -1.1 | 25.0 | |
| Butylbenzylphthalate | 0.784 | 0.781 | 0.010 | 0.4 | | |
| 3,3'-Dichlorobenzidine | 0.127 ~~0.185~~ | 0.255 | 0.010 | ~~89.9~~ * | | -101% |
| Benzo(a)Anthracene | 1.305 | 1.160 | 0.800 | 11.1 | 25.0 | |
| Chrysene | 1.154 | 1.123 | 0.700 | 2.7 | 25.0 | |
| bis(2-Ethylhexyl)Phthalate | 0.975 | 0.774 | 0.010 | 20.6 | | |
| Di-n-Octyl Phthalate | 1.649 | 1.505 | 0.010 | 8.7 | | |
| Benzo(b)Fluoranthene | 1.252 | 1.084 | 0.700 | 13.4 | 25.0 | |
| Benzo(k)Fluoranthene | 1.108 | 1.192 | 0.700 | -7.6 | 25.0 | |
| Benzo(a)Pyrene | 1.142 | 1.065 | 0.700 | 6.7 | 25.0 | |
| Indeno(1,2,3-cd)Pyrene | 1.348 | 0.996 | 0.500 | 26.1 | 25.0 | (J) |
| Dibenz(a,h)Anthracene | 1.079 | 0.776 | 0.400 | 28.1 * | 25.0 | |
| Benzo(g,h,i)Perylene | 1.210 | 0.866 | 0.500 | 28.4 | 25.0 | (J) |
| Nitrobenzene-d5 | 0.480 | 0.485 | 0.200 | -1.0 | 25.0 | |
| 2-Fluorobiphenyl | 1.354 | 1.293 | 0.700 | 4.5 | 25.0 | |
| Terphenyl-d14 | 1.090 | 1.060 | 0.500 | 2.8 | 25.0 | |
| 2-Chlorophenol-d4 | 1.354 | 1.383 | 0.800 | -2.1 | 25.0 | |
| 1,2-Dichlorobenzene-d4 | 0.840 | 0.762 | 0.400 | 9.3 | 25.0 | |
| Phenol-d5 | 1.781 | 1.937 | 0.800 | -8.8 | 25.0 | |
| 2-Fluorophenol | 1.473 | 1.533 | 0.600 | -4.1 | 25.0 | |
| 2,4,6-Tribromophenol | 0.316 | 0.311 | 0.010 | 1.6 | | |

Positive in samples run this day.

(1) Cannot be separated from Diphenylamine
All other compounds must meet a minimum RRF of 0.010.

*RRF >0.05, no positive results in affected samples; no action

ref.24 000518

7C

# SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: PRECISION A L  Contract: _____

Lab Code: PRECIS  Case No.: SM0002  SAS No.: 7453C01  SDG No.: CGG72

Instrument ID: HPBNA  Calibration date: 08/27/92  Time: 1617

Lab File ID: B8236  Init. Calib. Date(s): 05/08/92  05/08/92

Init. Calib. Times: 1446  1810

| COMPOUND | $\overline{RRF}$ | RRF50 | MIN RRF | %D | MAX %D |
|---|---|---|---|---|---|
| Diethylphthalate | 1.614 | 1.652 | 0.010 | -2.4 | |
| 4-Chlorophenyl-phenylether | 0.673 | 0.630 | 0.400 | 6.4 | 25.0 |
| Fluorene | 1.285 | 1.315 | 0.900 | -2.3 | 25.0 |
| 4-Nitroaniline | 0.191 | 0.438 | 0.010 | -129.3 * | |
| 4,6-Dinitro-2-methylphenol | 0.160 | 0.192 | 0.010 | -20.0 | |
| N-Nitrosodiphenylamine (1) | 0.334 | 0.476 | 0.010 | -42.5 * | |
| 4-Bromophenyl-phenylether | 0.272 | 0.235 | 0.100 | 13.6 | 25.0 |
| Hexachlorobenzene | 0.356 | 0.304 | 0.100 | 14.6 | 25.0 |
| Pentachlorophenol | 0.215 | 0.129 | 0.050 | 40.0 * | 25.0 |
| Phenanthrene | 1.165 | 1.132 | 0.700 | 2.8 | 25.0 |
| Anthracene | 1.132 | 1.142 | 0.700 | -0.9 | 25.0 |
| Carbazole | 0.326 | 0.943 | 0.010 | -189.3 | J # |
| Di-n-Butylphthalate | 1.587 | 1.694 | 0.010 | -6.7 | |
| Fluoranthene | 1.246 | 1.198 | 0.600 | 3.9 | 25.0 |
| Pyrene | 1.507 | 1.553 | 0.600 | -3.1 | 25.0 |
| Butylbenzylphthalate | 0.784 | 0.986 | 0.010 | -25.8 * | |
| 3,3'-Dichlorobenzidine | ~~0.135~~ 0.224 | 0.310 | 0.010 | ~~-129.6~~ -144 % * | |
| Benzo(a)Anthracene | 1.305 | 1.185 | 0.800 | 9.2 | 25.0 |
| Chrysene | 1.154 | 1.304 | 0.700 | -13.0 | 25.0 |
| bis(2-Ethylhexyl)Phthalate | 0.975 | 1.261 | 0.010 | -29.3 | |
| Di-n-Octyl Phthalate | 1.649 | 1.836 | 0.010 | -11.3 | |
| Benzo(b)Fluoranthene | 1.252 | 1.134 | 0.700 | 9.4 | 25.0 |
| Benzo(k)Fluoranthene | 1.108 | 0.990 | 0.700 | 10.6 | 25.0 |
| Benzo(a)Pyrene | 1.142 | 1.078 | 0.700 | 5.6 | 25.0 |
| Indeno(1,2,3-cd)Pyrene | 1.348 | 1.241 | 0.500 | 7.9 | 25.0 |
| Dibenz(a,h)Anthracene | 1.079 | 1.019 | 0.400 | 5.6 | 25.0 |
| Benzo(g,h,i)Perylene | 1.210 | 1.100 | 0.500 | 9.1 | 25.0 |
| Nitrobenzene-d5 | 0.480 | 0.560 | 0.200 | -16.7 | 25.0 |
| 2-Fluorobiphenyl | 1.354 | 1.295 | 0.700 | 4.4 | 25.0 |
| Terphenyl-d14 | 1.090 | 1.089 | 0.500 | 0.1 | 25.0 |
| 2-Chlorophenol-d4 | 1.354 | 1.473 | 0.800 | -8.8 | 25.0 |
| 1,2-Dichlorobenzene-d4 | 0.840 | 0.888 | 0.400 | -5.7 | 25.0 |
| Phenol-d5 | 1.781 | 2.136 | 0.800 | -19.9 | 25.0 |
| 2-Fluorophenol | 1.473 | 1.679 | 0.600 | -14.0 | 25.0 |
| 2,4,6-Tribromophenol | 0.316 | 0.285 | 0.010 | 9.8 | |

CGG72
CGG73
CGG81

(1) Cannot be separated from Diphenylamine
All other compounds must meet a minimum RRF of 0.010.

* RRF > 0.05, no positive results in affected samples; no action

# No associated values reported on data summary (-81 used for analysis - value not initial for carbazole)

ref.25

Field Duplicates Worksheet
Phillips SAS Organics

| Analyte | CGG79 Sample (µg/kg) | CGG80 Duplicate (µg/kg) | RPD (%) |
|---|---|---|---|
| Acenaphthylene | 100.00 | 390 U | IN |
| Phenanthrene | 190.00 | 390 U | IN |
| Anthracene | 84.00 | 390 U | IN |
| Carbazole | 43.00 | 390 U | IN |
| Fluoranthene | 720.00 | 34.00 | 181.96 |
| Pyrene | 790.00 | 30.00 | 185.37 |
| Benz[a]anthracene | 480.00 | 390 U | IN |
| Benzo[b]fluoranthene | 600.00 | 30.00 | 180.95 |
| Benzo[k]fluoranthene | 280.00 | 390 U | IN |
| Benzo[a]pyrene | 410.00 | 390 U | IN |
| Indeno[1,2,3-c,d]pyrene | 180.00 | 390 U | IN |
| Benzo[g,h,i]perylene | 160.00 | 390 U | IN |

IN - Indeterminate
U = Detection limit (not detected)

ref.24 000523

7B

# SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SM0002 SAS No.: 7453C01 SDG No.: CGG72

Instrument ID: HPBNA Calibration date: 09/02/92 Time: 0926

Lab File ID: B9004 Init. Calib. Date(s): 05/08/92 05/08/92

Init. Calib. Times: 1446 1810

| COMPOUND | $\overline{RRF}$ | RRF50 | MIN RRF | %D | MAX %D | |
|---|---|---|---|---|---|---|
| Phenol | 1.928 | 1.968 | 0.800 | -2.1 | 25.0 | CGG73RE |
| bis(2-Chloroethyl)Ether | 1.690 | 1.710 | 0.700 | -1.2 | 25.0 | CGG79 |
| 2-Chlorophenol | 1.428 | 1.402 | 0.800 | 1.8 | 25.0 | CGG80 |
| 1,3-Dichlorobenzene | 1.606 | 1.516 | 0.600 | 5.6 | 25.0 | CGG81RE |
| 1,4-Dichlorobenzene | 1.631 | 1.474 | 0.500 | 9.6 | 25.0 | |
| 1,2-Dichlorobenzene | 1.426 | 1.281 | 0.400 | 10.2 | 25.0 | |
| 2-Methylphenol | 1.251 | 1.210 | 0.700 | 3.3 | 25.0 | |
| 2,2'-oxybis(1-Chloropropane) | 2.617 | 2.829 | 0.010 | -8.1 | | |
| 4-Methylphenol | 1.258 | 1.085 | 0.600 | 13.8 | 25.0 | |
| N-Nitroso-Di-n-Propylamine | 1.126 | 0.888 | 0.500 | 21.1 | 25.0 | |
| Hexachloroethane | 0.718 | 0.658 | 0.300 | 8.4 | 25.0 | |
| Nitrobenzene | 0.519 | 0.482 | 0.200 | 7.1 | 25.0 | |
| Isophorone | 1.012 | 0.912 | 0.400 | 9.9 | 25.0 | |
| 2-Nitrophenol | 0.226 | 0.226 | 0.100 | 0.0 | 25.0 | |
| 2,4-Dimethylphenol | 0.404 | 0.318 | 0.200 | 21.3 | 25.0 | |
| bis(2-Chloroethoxy)Methane | 0.599 | 0.579 | 0.300 | 3.3 | 25.0 | |
| 2,4-Dichlorophenol | 0.322 | 0.256 | 0.200 | 20.5 | 25.0 | |
| 1,2,4-Trichlorobenzene | 0.382 | 0.324 | 0.200 | 15.2 | 25.0 | |
| Naphthalene | 1.128 | 1.072 | 0.700 | 5.0 | 25.0 | |
| 4-Chloroaniline | 0.305 | 0.257 | 0.010 | 15.7 | | |
| Hexachlorobutadiene | 0.221 | 0.166 | 0.010 | 24.9 | | |
| 4-Chloro-3-Methylphenol | 0.390 | 0.398 | 0.200 | -2.1 | 25.0 | |
| 2-Methylnaphthalene | 0.696 | 0.648 | 0.400 | 6.9 | 25.0 | |
| Hexachlorocyclopentadiene | 0.485 | 0.213 | 0.010 | 56.1 | | |
| 2,4,6-Trichlorophenol | 0.459 | 0.389 | 0.200 | 15.2 | 25.0 | |
| 2,4,5-Trichlorophenol | 0.478 | 0.512 | 0.200 | -7.1 | 25.0 | |
| 2-Chloronaphthalene | 1.266 | 1.284 | 0.800 | -1.4 | 25.0 | |
| 2-Nitroaniline | 0.533 | 0.611 | 0.010 | -14.6 | | |
| Dimethylphthalate | 1.583 | 1.454 | 0.010 | 8.1 | | |
| Acenaphthylene | 0.242 | 0.215 | 1.300 | 11.2 | 25.0 | |
| 2,6-Dinitrotoluene | 0.383 | 0.379 | 0.200 | 1.0 | 25.0 | |
| 3-Nitroaniline | 0.474 | 0.542 | 0.010 | -14.4 | | |
| Acenaphthene | 1.243 | 1.144 | 0.800 | 8.0 | 25.0 | |
| 2,4-Dinitrophenol | 0.140 ~~0.202~~ | 0.166 | 0.010 | 8.2 ~~17.8~~ | | |
| 4-Nitrophenol | 0.142 ~~0.151~~ | 0.150 | 0.010 | 5.6 ~~0.7~~ | | |
| Dibenzofuran | 1.724 | 1.692 | 0.800 | 1.9 | 25.0 | |
| 2,4-Dinitrotoluene | 0.476 | 0.522 | 0.200 | -9.7 | 25.0 | |

(1) Cannot be separated from Diphenylamine
All other compounds must meet a minimum RRF of 0.010.

RRFs 70.05, no positives in affected spls.

7B

# SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SM0002 SAS No.: 7453C01 SDG No.: CGG72

Instrument ID: HPBNA Calibration date: 08/27/92 Time: 1617

Lab File ID: B8236 Init. Calib. Date(s): 05/08/92 05/08/92

Init. Calib. Times: 1446 1810

Lab had incorrect RRF Because of incomplete initial calib. Form for certain cpds.

| COMPOUND | $\overline{RRF}$ | RRF50 | MIN RRF | %D | MAX %D | |
|---|---|---|---|---|---|---|
| Phenol | 1.928 | 2.356 | 0.800 | -22.2 | 25.0 | CGG72 |
| bis(2-Chloroethyl)Ether | 1.690 | 1.952 | 0.700 | -15.5 | 25.0 | |
| 2-Chlorophenol | 1.428 | 1.530 | 0.800 | -7.1 | 25.0 | CGG73 |
| 1,3-Dichlorobenzene | 1.606 | 1.551 | 0.600 | 3.4 | 25.0 | |
| 1,4-Dichlorobenzene | 1.631 | 1.536 | 0.500 | 5.8 | 25.0 | CGG81 |
| 1,2-Dichlorobenzene | 1.426 | 1.294 | 0.400 | 9.3 | 25.0 | |
| 2-Methylphenol | 1.251 | 1.384 | 0.700 | -10.6 | 25.0 | |
| 2,2'-oxybis(1-Chloropropane) | 2.617 | 4.407 | 0.010 | -68.4 | | |
| 4-Methylphenol | 1.258 | 1.517 | 0.600 | -20.6 | 25.0 | |
| N-Nitroso-Di-n-Propylamine | 1.126 | 1.561 | 0.500 | -38.6 | 25.0 | |
| Hexachloroethane | 0.718 | 0.756 | 0.300 | -5.3 | 25.0 | |
| Nitrobenzene | 0.519 | 0.577 | 0.200 | -11.2 | 25.0 | |
| Isophorone | 1.012 | 1.086 | 0.400 | -7.3 | 25.0 | |
| 2-Nitrophenol | 0.226 | 0.245 | 0.100 | -8.4 | 25.0 | |
| 2,4-Dimethylphenol | 0.404 | 0.375 | 0.200 | 7.2 | 25.0 | |
| bis(2-Chloroethoxy)Methane | 0.599 | 0.637 | 0.300 | -6.3 | 25.0 | |
| 2,4-Dichlorophenol | 0.322 | 0.308 | 0.200 | 4.3 | 25.0 | |
| 1,2,4-Trichlorobenzene | 0.382 | 0.308 | 0.200 | 19.4 | 25.0 | |
| Naphthalene | 1.128 | 1.053 | 0.700 | 6.6 | 25.0 | |
| 4-Chloroaniline | 0.305 | 0.408 | 0.010 | -33.8 | | |
| Hexachlorobutadiene | 0.221 | 0.159 | 0.010 | 28.0 | | |
| 4-Chloro-3-Methylphenol | 0.390 | 0.410 | 0.200 | -5.1 | 25.0 | |
| 2-Methylnaphthalene | 0.696 | 0.622 | 0.400 | 10.6 | 25.0 | |
| Hexachlorocyclopentadiene | 0.485 | 0.346 | 0.010 | 28.7 | | |
| 2,4,6-Trichlorophenol | 0.459 | 0.425 | 0.200 | 7.4 | 25.0 | |
| 2,4,5-Trichlorophenol | 0.478 | 0.459 | 0.200 | 4.0 | 25.0 | |
| 2-Chloronaphthalene | 1.266 | 1.273 | 0.800 | -0.6 | 25.0 | |
| 2-Nitroaniline | 0.533 | 0.806 | 0.010 | -51.2 | | |
| Dimethylphthalate | 1.583 | 1.540 | 0.010 | 2.7 | | |
| Acenaphthylene | 0.242 | 0.268 | 1.300 | -10.7 | 25.0 | |
| 2,6-Dinitrotoluene | 0.383 | 0.413 | 0.200 | -7.8 | 25.0 | |
| 3-Nitroaniline | 0.474 | 0.608 | 0.010 | -28.3 | | |
| Acenaphthene | 1.243 | 1.212 | 0.800 | 2.5 | 25.0 | |
| 2,4-Dinitrophenol 0.181 | ~~0.202~~ | 0.239 | 0.010 | ~~-18.3~~ | 32% | |
| 4-Nitrophenol 0.142 | ~~0.151~~ | 0.130 | 0.010 | ~~13.9~~ | 9.4% | |
| Dibenzofuran | 1.724 | 1.802 | 0.800 | -4.5 | 25.0 | |
| 2,4-Dinitrotoluene | 0.476 | 0.608 | 0.200 | -27.7 | 25.0 | |

All other compounds must meet a minimum RRF of 0.010.

All RRFs > 0.05, no positive results in affected samples.

| HALLIBURTON NUS Environmental Corporation and Subsidiaries | ref. 25 | STANDARD CALCULATION SHEET |
|---|---|---|

| CLIENT: | FILE NO.: | BY: | PAGE OF |
|---|---|---|---|
| SUBJECT: Field duplicates worksheet | | CHECKED BY: | DATE: |

Samples CGG79, CGG80, Pesticide Fraction

| Analyte | Concentration (ug/kg) CGG79 | CGG80 | Relative Percent Difference (RPD) |
|---|---|---|---|
| 4,4'-DDE | 0.11 | ND | IN |
| 4,4'-DDD | 0.59 | ND | IN |
| alpha chlordane | 0.14 | ND | IN |
| gamma chlordane | 0.17 | ND | IN |
| aroclor 1260 | ND | 13 | IN |

ND = not detected

IN = Indeterminate

ref.26

Relative Standard Deviation Worksheet

| Compound | Unspiked Sample | MS | MSD | Mean | Std Deviation | RSD |
|---|---|---|---|---|---|---|
| | CGG81RE | CGG81RE | CGG81REMSD | | | |
| CARBON DISULFIDE | 1 | 2 | 2 | 1.666667 | 0.57735 | 0.34641 |

ref. 26

Relative Standard Deviation Worksheet

| Compound | Unspiked Sample CGG81 | MS CGG81MS | MSD CGG81MSD | Mean | Std Deviation | RSD | |
|---|---|---|---|---|---|---|---|
| Napthalene | 420 | 1000 | 2200 | 1206.667 | 907.8179 | 0.752335 | |
| 2-Methylnaphthalene | 52 | 240 | ND | 97.33333 | 126.259 | ~~1.297181~~ | INDETERMINATE |
| Dibenzofuran | 38 | 110 | 140 | 96 | 52.42137 | 0.546056 | |
| Fluorene | 58 | 130 | 200 | 129.3333 | 71.00235 | 0.548987 | |
| Phenanthrene | 650 | 1500 | 1700 | 1283.333 | 557.5243 | 0.434435 | |
| Anthracene | 190 | 390 | 470 | 350 | 144.2221 | 0.412063 | |
| Carbazole | 99 | 270 | 230 | 199.6667 | 89.44458 | 0.44797 | |
| Fluoranthene | 1300 | 2300 | 2500 | 2033.333 | 642.9101 | 0.316185 | |
| Pyrene | 1100 | ND | ND | 366.6667 | 635.0853 | ~~1.732051~~ | INDETERMINATE |
| Benz[a]anthracene | 270 | 1600 | 1600 | 1156.667 | 767.8759 | 0.66387 | |
| Chrysene | 650 | 850 | 1100 | 866.6667 | 225.4625 | 0.260149 | |
| Benzo[b]fluoranthene | 290 | 800 | 1700 | 930 | 713.9328 | 0.76767 | |
| Benzo[k]fluoranthene | 970 | 1400 | 520 | 963.3333 | 440.0379 | 0.456787 | |
| Benzo[a]pyrene | 470 | 950 | 1100 | 840 | 329.0897 | 0.391773 | |
| deno[1,2,3-c,d]pyrene | 350 | 680 | 760 | 596.6667 | 217.3323 | 0.364244 | |
| Dibenz[a,h]anthracene | 94 | 160 | 160 | 138 | 38.10512 | 0.276124 | |
| Benzo[g,h,i]perylene | 260 | 490 | 600 | 450 | 173.4935 | 0.385541 | |

ND = NOT DETECTED

ref. 26

Relative Standard Deviation Worksheet

| Compound | Unspiked Sample CGG81RE | MS CGG81MS | MSD CGG81MSDRE | Mean | Std Deviation | RSD | |
|---|---|---|---|---|---|---|---|
| Naphthalene | 550 | 930 | 370 | 616.6667 | 285.8904 | 0.463606 | |
| 2-Methylnaphthalene | 47 | 160 | 87 | 98 | 57.29747 | 0.584668 | |
| Dibenzofuran | 55 | 160 | 76 | 97 | 55.56078 | 0.572792 | |
| Fluorene | 100 | 290 | 120 | 170 | 104.4031 | 0.614136 | |
| Phenanthrene | 850 | 1700 | 920 | 1156.667 | 471.8404 | 0.407931 | |
| Anthracene | 270 | 590 | 260 | 373.3333 | 187.7054 | 0.502782 | |
| Carbazole | 580 | 1200 | 400 | 726.6667 | 419.6824 | 0.577545 | |
| Fluoranthene | 1100 | 2200 | 1300 | 1533.333 | 585.9465 | 0.382139 | |
| Pyrene | 1300 | ND | ND | 433.3333 | 750.5553 | ~~1.732051~~ | INDETERMINATE |
| Benz[a]anthracene | 900 | 1800 | 1000 | 1233.333 | 493.2883 | 0.399963 | |
| Chrysene | 560 | 1100 | 580 | 746.6667 | 306.159 | 0.410034 | |
| Benzo[b]fluoranthene | 1400 | 2400 | 1200 | 1666.667 | 642.9101 | 0.385746 | |
| Benzo[k]fluoranthene | 340 | 590 | 530 | 486.6667 | 130.5118 | 0.268175 | |
| Benzo[a]pyrene | 780 | 1400 | 490 | 890 | 464.8656 | 0.522321 | |
| Indeno[1,2,3-c,d]pyrene | 370 | 620 | 260 | 416.6667 | 184.4813 | 0.442755 | |
| Benzo[g,h,i]perylene | 360 | 610 | 220 | 396.6667 | 197.5686 | 0.498072 | |
| Butylbenzyl phthalate | 610 | ND | 310 | 306.6667 | 305.0137 | ~~0.99461~~ | INDETERMINE |
| Diethyl phthalate | ND | 37 | ND | 12.33333 | 21.36196 | ~~1.732051~~ | INDETERMINATE |

ND = NOT DETECTED

000011

EPA SAMPLE NO.

CGG73

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SMO002 SAS No.: 7453C01 SDG No.: CGG72

Matrix: (soil/water) SOIL Lab Sample ID: 9208251-3

Sample wt/vol: 5.39 (g/mL) G Lab File ID: A8178

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: not dec. 7 Date Analyzed: 08/26/92

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | 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 | 10 | B |
| 67-64-1 | Acetone | 2 | BJ |
| 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 | 10 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 10 | U |
| 56-23-5 | Carbon Tetrachloride | 10 | 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 | 10 | U |
| 591-78-6 | 2-Hexanone | 10 | 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 | Xylene (total) | 10 | U |

EPA SAMPLE NO.

CGG73

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SMO002 SAS No.: 7453C01 SDG No.: CGG72

Matrix: (soil/water) SOIL Lab Sample ID: 9208251-3

Sample wt/vol: 5.39 (g/mL) G Lab File ID: A8178

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: not dec. 7 Date Analyzed: 08/26/92

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

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

EPA SAMPLE NO.

CGG74

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: _____ SDG No.: CGG70

Matrix: (soil/water) WATER Lab Sample ID: 9207958

Sample wt/vol: 1000 (g/mL) ML Lab File ID: E2959

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 08/24/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/27/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.0

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

| CAS NO. | COMPOUND | | 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 |
| 95-50-1 | 1,2-Dichlorobenzene | 10 | U |
| 95-48-7 | 2-Methylphenol | 10 | U |
| 108-60-1 | 2,2'-oxybis(1-Chloropropane) | 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 |
| 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 | 25 | U |
| 91-58-7 | 2-Chloronaphthalene | 10 | U |
| 88-74-4 | 2-Nitroaniline | 25 | U |
| 131-11-3 | Dimethylphthalate | 10 | U |
| 208-96-8 | Acenaphthylene | 10 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 10 | U |
| 99-09-2 | 3-Nitroaniline | 25 | U |
| 83-32-9 | Acenaphthene | 10 | U |

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CGG74

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: _____ SDG No.: CGG70

Matrix: (soil/water) WATER Lab Sample ID: 9207958

Sample wt/vol: 1000 (g/mL) ML Lab File ID: E2959

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 08/24/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/27/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.0

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

| CAS NO. | COMPOUND | | Q |
|---|---|---|---|
| 51-28-5 | 2,4-Dinitrophenol | 25 | U |
| 100-02-7 | 4-Nitrophenol | 25 | 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-phenylether | 10 | U |
| 86-73-7 | Fluorene | 10 | U |
| 100-01-6 | 4-Nitroaniline | 25 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 25 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 10 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 10 | U |
| 118-74-1 | Hexachlorobenzene | 10 | U |
| 87-86-5 | Pentachlorophenol | 25 | U |
| 85-01-8 | Phenanthrene | 10 | U |
| 120-12-7 | Anthracene | 10 | U |
| 86-74-8 | Carbazole | 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 | 10 | U |
| 56-55-3 | Benzo(a)anthracene | 10 | U |
| 218-01-9 | Chrysene | 10 | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 1 | J |
| 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

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CGG74

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: SDG No.: CGG70

Matrix: (soil/water) WATER Lab Sample ID: 9207958

Sample wt/vol: 1010 (g/mL) ML Lab File ID:

% Moisture: decanted: (Y/N) Date Received: 08/20/92

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/24/92

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 09/02/92

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 6.0 Sulfur Cleanup: (Y/N) N

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | 0.050 | U |
| 319-85-7 | beta-BHC | 0.050 | U |
| 319-86-8 | delta-BHC | 0.050 | U |
| 58-89-9 | gamma-BHC (Lindane) | 0.050 | U |
| 76-44-8 | Heptachlor | 0.050 | U |
| 309-00-2 | Aldrin | 0.050 | U |
| 1024-57-3 | Heptachlor epoxide | 0.050 | U |
| 959-98-8 | Endosulfan I | 0.050 | U |
| 60-57-1 | Dieldrin | 0.099 | U |
| 72-55-9 | 4,4'-DDE | 0.099 | U |
| 72-20-8 | Endrin | 0.099 | U |
| 33213-65-9 | Endosulfan II | 0.099 | U |
| 72-54-8 | 4,4'-DDD | 0.099 | U |
| 1031-07-8 | Endosulfan sulfate | 0.099 | U |
| 50-29-3 | 4,4'-DDT | 0.099 | U |
| 72-43-5 | Methoxychlor | 0.50 | U |
| 53494-70-5 | Endrin ketone | 0.099 | U |
| 7421-36-3 | Endrin aldehyde | 0.099 | U |
| 5103-71-9 | alpha-Chlordane | 0.050 | U |
| 5103-74-2 | gamma-Chlordane | 0.050 | U |
| 8001-35-2 | Toxaphene | 5.0 | U |
| 12674-11-2 | Aroclor-1016 | 0.99 | U |
| 11104-28-2 | Aroclor-1221 | 2.0 | U |
| 11141-16-5 | Aroclor-1232 | 0.99 | U |
| 53469-21-9 | Aroclor-1242 | 0.99 | U |
| 12672-29-6 | Aroclor-1248 | 0.99 | U |
| 11097-69-1 | Aroclor-1254 | 0.99 | U |
| 11096-82-5 | Aroclor-1260 | 0.99 | U |

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CGG75

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: SDG No.: CGG70

Matrix: (soil/water) WATER Lab Sample ID: 9207959

Sample wt/vol: 1020 (g/mL) ML Lab File ID:

% Moisture: decanted: (Y/N) Date Received: 08/20/92

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/24/92

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 09/02/92

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 6.0 Sulfur Cleanup: (Y/N) N

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | 0.049 | U |
| 319-85-7 | beta-BHC | 0.049 | U |
| 319-86-8 | delta-BHC | 0.049 | U |
| 58-89-9 | gamma-BHC (Lindane) | 0.049 | U |
| 76-44-8 | Heptachlor | 0.049 | U |
| 309-00-2 | Aldrin | 0.049 | U |
| 1024-57-3 | Heptachlor epoxide | 0.049 | U |
| 959-98-8 | Endosulfan I | 0.049 | U |
| 60-57-1 | Dieldrin | 0.098 | U |
| 72-55-9 | 4,4'-DDE | 0.098 | U |
| 72-20-8 | Endrin | 0.098 | U |
| 33213-65-9 | Endosulfan II | 0.098 | U |
| 72-54-8 | 4,4'-DDD | 0.098 | U |
| 1031-07-8 | Endosulfan sulfate | 0.098 | U |
| 50-29-3 | 4,4'-DDT | 0.098 | U |
| 72-43-5 | Methoxychlor | 0.49 | U |
| 53494-70-5 | Endrin ketone | 0.098 | U |
| 7421-36-3 | Endrin aldehyde | 0.098 | U |
| 5103-71-9 | alpha-Chlordane | 0.049 | U |
| 5103-74-2 | gamma-Chlordane | 0.049 | U |
| 8001-35-2 | Toxaphene | 4.9 | U |
| 12674-11-2 | Aroclor-1016 | 0.98 | U |
| 11104-28-2 | Aroclor-1221 | 2.0 | U |
| 11141-16-5 | Aroclor-1232 | 0.98 | U |
| 53469-21-9 | Aroclor-1242 | 0.98 | U |
| 12672-29-6 | Aroclor-1248 | 0.98 | U |
| 11097-69-1 | Aroclor-1254 | 0.98 | U |
| 11096-82-5 | Aroclor-1260 | 0.98 | U |

1F

# SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

CGG74

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18822 SAS No.: _____ SDG No.: CGG70

Matrix: (soil/water) WATER Lab Sample ID: 9207958

Sample wt/vol: 1000 (g/mL) ML Lab File ID: E2959

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 08/24/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/27/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.0

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | UNKNOWN | 5.74 | 4 | JN |
| 2. 123422 | 2-Pentanone, 4-hydroxy-4-met | 8.30 | 60 | JNA |
| 3. | UNKNOWN | 6.72 | 3 | JNB |

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CGG75

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: _____ SDG No.: CGG70

Matrix: (soil/water) WATER Lab Sample ID: 9207959

Sample wt/vol: 1000 (g/mL) ML Lab File ID: E2960

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 08/24/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/27/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.0

| 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 |
| 95-50-1 | 1,2-Dichlorobenzene | 10 | U |
| 95-48-7 | 2-Methylphenol | 10 | U |
| 108-60-1 | 2,2'-oxybis(1-Chloropropane) | 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 |
| 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 | 25 | U |
| 91-58-7 | 2-Chloronaphthalene | 10 | U |
| 88-74-4 | 2-Nitroaniline | 25 | U |
| 131-11-3 | Dimethylphthalate | 10 | U |
| 208-96-8 | Acenaphthylene | 10 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 10 | U |
| 99-09-2 | 3-Nitroaniline | 25 | U |
| 83-32-9 | Acenaphthene | 10 | U |

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CGG75

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: _____ SDG No.: CGG70

Matrix: (soil/water) WATER Lab Sample ID: 9207959

Sample wt/vol: 1000 (g/mL) ML Lab File ID: E2960

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 08/24/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/27/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 51-28-5 | 2,4-Dinitrophenol | 25 | U |
| 100-02-7 | 4-Nitrophenol | 25 | 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-phenylether | 10 | U |
| 86-73-7 | Fluorene | 10 | U |
| 100-01-6 | 4-Nitroaniline | 25 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 25 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 10 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 10 | U |
| 118-74-1 | Hexachlorobenzene | 10 | U |
| 87-86-5 | Pentachlorophenol | 25 | U |
| 85-01-8 | Phenanthrene | 10 | U |
| 120-12-7 | Anthracene | 10 | U |
| 86-74-8 | Carbazole | 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 | 10 | 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

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

CGG75

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: _____ SDG No.: CGG70

Matrix: (soil/water) WATER Lab Sample ID: 9207959

Sample wt/vol: 1000 (g/mL) ML Lab File ID: E2960

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 08/24/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/27/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.0

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | UNKNOWN | 5.75 | 3 | JN |
| 2. 123422 | 2-Pentanone, 4-hydroxy-4-met | 6.30 | 48 | JNA |
| 3. | UNKNOWN | 6.72 | 4 | JNB |

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CGG76

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: _____ SDG No.: CGG70

Matrix: (soil/water) WATER Lab Sample ID: 9207960

Sample wt/vol: 1000 (g/mL) ML Lab File ID: E2961

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 08/24/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/27/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.0

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

| CAS NO. | COMPOUND | | 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 |
| 95-50-1 | 1,2-Dichlorobenzene | 10 | U |
| 95-48-7 | 2-Methylphenol | 10 | U |
| 108-60-1 | 2,2'-oxybis(1-Chloropropane) | 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 |
| 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 | 25 | U |
| 91-58-7 | 2-Chloronaphthalene | 10 | U |
| 88-74-4 | 2-Nitroaniline | 25 | U |
| 131-11-3 | Dimethylphthalate | 10 | U |
| 208-96-8 | Acenaphthylene | 10 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 10 | U |
| 99-09-2 | 3-Nitroaniline | 25 | U |
| 83-32-9 | Acenaphthene | 10 | U |

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CGG76

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: _____ SDG No.: CGG70

Matrix: (soil/water) WATER Lab Sample ID: 9207960

Sample wt/vol: 1000 (g/mL) ML Lab File ID: E2961

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 08/24/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/27/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 51-28-5 | 2,4-Dinitrophenol | 25 | U |
| 100-02-7 | 4-Nitrophenol | 25 | 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-phenylether | 10 | U |
| 86-73-7 | Fluorene | 10 | U |
| 100-01-6 | 4-Nitroaniline | 25 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 25 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 10 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 10 | U |
| 118-74-1 | Hexachlorobenzene | 10 | U |
| 87-86-5 | Pentachlorophenol | 25 | U |
| 85-01-8 | Phenanthrene | 10 | U |
| 120-12-7 | Anthracene | 10 | U |
| 86-74-8 | Carbazole | 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 | 10 | U |
| 56-55-3 | Benzo(a)anthracene | 10 | U |
| 218-01-9 | Chrysene | 10 | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 1 | J |
| 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

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CGG70

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: SDG No.: CGG70

Matrix: (soil/water) WATER Lab Sample ID: 9207956

Sample wt/vol: 1000 (g/mL) ML Lab File ID:

% Moisture: decanted: (Y/N) Date Received: 08/20/92

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/24/92

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 09/02/92

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 6.0 Sulfur Cleanup: (Y/N) N

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | 0.050 | U |
| 319-85-7 | beta-BHC | 0.050 | U |
| 319-86-8 | delta-BHC | 0.050 | U |
| 58-89-9 | gamma-BHC (Lindane) | 0.050 | U |
| 76-44-8 | Heptachlor | 0.050 | U |
| 309-00-2 | Aldrin | 0.050 | U |
| 1024-57-3 | Heptachlor epoxide | 0.050 | U |
| 959-98-8 | Endosulfan I | 0.050 | 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 |
| 7421-36-3 | Endrin aldehyde | 0.10 | U |
| 5103-71-9 | alpha-Chlordane | 0.050 | U |
| 5103-74-2 | gamma-Chlordane | 0.050 | U |
| 8001-35-2 | Toxaphene | 5.0 | U |
| 12674-11-2 | Aroclor-1016 | 1.0 | U |
| 11104-28-2 | Aroclor-1221 | 2.0 | U |
| 11141-16-5 | Aroclor-1232 | 1.0 | U |
| 53469-21-9 | Aroclor-1242 | 1.0 | U |
| 12672-29-6 | Aroclor-1248 | 1.0 | U |
| 11097-69-1 | Aroclor-1254 | 1.0 | U |
| 11096-82-5 | Aroclor-1260 | 1.0 | U |

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CGG71

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: SDG No.: CGG70

Matrix: (soil/water) WATER Lab Sample ID: 9207957

Sample wt/vol: 1020 (g/mL) ML Lab File ID:

% Moisture: decanted: (Y/N) Date Received: 08/20/92

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/24/92

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 09/02/92

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 6.0 Sulfur Cleanup: (Y/N) N

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | 0.049 | U |
| 319-85-7 | beta-BHC | 0.049 | U |
| 319-86-8 | delta-BHC | 0.049 | U |
| 58-89-9 | gamma-BHC (Lindane) | 0.049 | U |
| 76-44-8 | Heptachlor | 0.049 | U |
| 309-00-2 | Aldrin | 0.049 | U |
| 1024-57-3 | Heptachlor epoxide | 0.049 | U |
| 959-98-8 | Endosulfan I | 0.049 | U |
| 60-57-1 | Dieldrin | 0.098 | U |
| 72-55-9 | 4,4'-DDE | 0.098 | U |
| 72-20-8 | Endrin | 0.098 | U |
| 33213-65-9 | Endosulfan II | 0.098 | U |
| 72-54-8 | 4,4'-DDD | 0.098 | U |
| 1031-07-8 | Endosulfan sulfate | 0.098 | U |
| 50-29-3 | 4,4'-DDT | 0.098 | U |
| 72-43-5 | Methoxychlor | 0.49 | U |
| 53494-70-5 | Endrin ketone | 0.098 | U |
| 7421-36-3 | Endrin aldehyde | 0.098 | U |
| 5103-71-9 | alpha-Chlordane | 0.049 | U |
| 5103-74-2 | gamma-Chlordane | 0.049 | U |
| 8001-35-2 | Toxaphene | 4.9 | U |
| 12674-11-2 | Aroclor-1016 | 0.98 | U |
| 11104-28-2 | Aroclor-1221 | 2.0 | U |
| 11141-16-5 | Aroclor-1232 | 0.98 | U |
| 53469-21-9 | Aroclor-1242 | 0.98 | U |
| 12672-29-6 | Aroclor-1248 | 0.98 | U |
| 11097-69-1 | Aroclor-1254 | 0.98 | U |
| 11096-82-5 | Aroclor-1260 | 0.98 | U |

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CGG76

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: SDG No.: CGG70

Matrix: (soil/water) WATER Lab Sample ID: 9207960

Sample wt/vol: 1020 (g/mL) ML Lab File ID:

% Moisture: decanted: (Y/N) Date Received: 08/20/92

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/24/92

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 09/02/92

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 6.0 Sulfur Cleanup: (Y/N) N

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | 0.049 | U |
| 319-85-7 | beta-BHC | 0.049 | U |
| 319-86-8 | delta-BHC | 0.049 | U |
| 58-89-9 | gamma-BHC (Lindane) | 0.049 | U |
| 76-44-8 | Heptachlor | 0.049 | U |
| 309-00-2 | Aldrin | 0.049 | U |
| 1024-57-3 | Heptachlor epoxide | 0.049 | U |
| 959-98-8 | Endosulfan I | 0.049 | U |
| 60-57-1 | Dieldrin | 0.098 | U |
| 72-55-9 | 4,4'-DDE | 0.098 | U |
| 72-20-8 | Endrin | 0.098 | U |
| 33213-65-9 | Endosulfan II | 0.098 | U |
| 72-54-8 | 4,4'-DDD | 0.098 | U |
| 1031-07-8 | Endosulfan sulfate | 0.098 | U |
| 50-29-3 | 4,4'-DDT | 0.098 | U |
| 72-43-5 | Methoxychlor | 0.49 | U |
| 53494-70-5 | Endrin ketone | 0.098 | U |
| 7421-36-3 | Endrin aldehyde | 0.098 | U |
| 5103-71-9 | alpha-Chlordane | 0.049 | U |
| 5103-74-2 | gamma-Chlordane | 0.049 | U |
| 8001-35-2 | Toxaphene | 4.9 | U |
| 12674-11-2 | Aroclor-1016 | 0.98 | U |
| 11104-28-2 | Aroclor-1221 | 2.0 | U |
| 11141-16-5 | Aroclor-1232 | 0.98 | U |
| 53469-21-9 | Aroclor-1242 | 0.98 | U |
| 12672-29-6 | Aroclor-1248 | 0.98 | U |
| 11097-69-1 | Aroclor-1254 | 0.98 | U |
| 11096-82-5 | Aroclor-1260 | 0.98 | U |

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CGG77

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: SDG No.: CGG70

Matrix: (soil/water) WATER Lab Sample ID: 9207961

Sample wt/vol: 1010 (g/mL) ML Lab File ID:

% Moisture: decanted: (Y/N) Date Received: 08/20/92

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/24/92

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 09/02/92

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 6.5 Sulfur Cleanup: (Y/N) N

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | 0.050 | U |
| 319-85-7 | beta-BHC | 0.050 | U |
| 319-86-8 | delta-BHC | 0.050 | U |
| 58-89-9 | gamma-BHC (Lindane) | 0.050 | U |
| 76-44-8 | Heptachlor | 0.050 | U |
| 309-00-2 | Aldrin | 0.016 | JP |
| 1024-57-3 | Heptachlor epoxide | 0.050 | U |
| 959-98-8 | Endosulfan I | 0.050 | U |
| 60-57-1 | Dieldrin | 0.099 | U |
| 72-55-9 | 4,4'-DDE | 0.099 | U |
| 72-20-8 | Endrin | 0.099 | U |
| 33213-65-9 | Endosulfan II | 0.099 | U |
| 72-54-8 | 4,4'-DDD | 0.099 | U |
| 1031-07-8 | Endosulfan sulfate | 0.099 | U |
| 50-29-3 | 4,4'-DDT | 0.099 | U |
| 72-43-5 | Methoxychlor | 0.50 | U |
| 53494-70-5 | Endrin ketone | 0.099 | U |
| 7421-36-3 | Endrin aldehyde | 0.099 | U |
| 5103-71-9 | alpha-Chlordane | 0.050 | U |
| 5103-74-2 | gamma-Chlordane | 0.050 | U |
| 8001-35-2 | Toxaphene | 5.0 | U |
| 12674-11-2 | Aroclor-1016 | 0.99 | U |
| 11104-28-2 | Aroclor-1221 | 2.0 | U |
| 11141-16-5 | Aroclor-1232 | 0.99 | U |
| 53469-21-9 | Aroclor-1242 | 0.99 | U |
| 12672-29-6 | Aroclor-1248 | 0.99 | U |
| 11097-69-1 | Aroclor-1254 | 0.99 | U |
| 11096-82-5 | Aroclor-1260 | 0.99 | U |

Ref. 9

Pesticide SUPPORT Data – Random Interference Eval.

Col. 1 = 1701 Col. 2 = RTX-50

| SAMPLE NUMBER | MATRIX OF SAMPLE | NAME OF PESTICIDE DETECTED | Concentration Detected's % Difference Between Cols | unusual match RTW comparison: (Peak ±0.01 of Edge) Col. 1 | Col. 2 | Probability of "Random" Match ≈ UNITS of Peak Densities Expressed in Peaks per RTW window Peak Densities (Approximate No. >25% Target win ±1min ÷ #RTWs ±1min) Col. 1 | Col. 2 |
|---|---|---|---|---|---|---|---|
| CGG77 | AQ. | Aldrin | 62.5% | OK | edge | 0.25 | 0.35 |
| CGG78 | SED | methoxychlor | 38.1% | OK | OK | 0 | 0 |
| | | α-chlordane | 26.1% | OK | OK | 0.56 | 0.42 |
| CGG84 | AQ | dieldrin | 32.5% | OK | OK | 0.21 | 0.14 |
| CGG85 | AQ | Endosulfan II | 26.7% | edge | OK | 0.35 | 0.35 |
| | | 44'-DDD | 1,610% | OK | OK | 0.42 | 0 |
| CGG86 | SED | hept. epoxide | 300% | OK | edge | 0.30 | 0.56 |
| | | α-chlordane | 48% | OK | OK | 0.35 | 0.49 |
| | | γ-chlordane | 38% | OK | OK | 0.49 | 0.56 |
| | | aldrin | 35% | edge | OK | 0.30 | 0.35 |
| | | DDD | 85% | edge | OK | 0.42 | 0.35 |
| | | DDT | 200% | OK | OK | 0.49 | 0.49 |
| | | endosulfan SO4 | 2700% | OK | edge | 0.14 | 0.42 |
| CGG87 | SED | Aldrin | 13% | OK | OK | 0.25 | 0.15 |
| | | dieldrin | 31% | OK | OK | 0.56 | 0.35 |
| | | DDD | 37% | edge | OK | 0.49 | 0.42 |
| | | heptachlor epoxide | 129% | OK | OK | 0.35 | 0.35 |
| | | α-chlordane | 31% | OK | OK | 0.56 | 0.42 |
| | | γ-chlordane | 21% | OK | OK | 0.42 | 0.42 |
| CGG88 | SOIL | hept. epoxide | 212% | edge | OK | 0.35 | 0.42 |
| | | DDE | 207% | OK | OK | 0.49 | 0.07 |
| | | DDD | 442% | edge | OK | 0.21 | 0.35 |
| | | DDT | 362% | OK | OK | 0.28 | 0.42 |

**LAST COLUMN OF NUMBERS SHOWS THERE IS A 30% to 50% Chance than any target in that zone could be a FALSE positive**

>> Exemplary Data showing Possibilities of Interferences

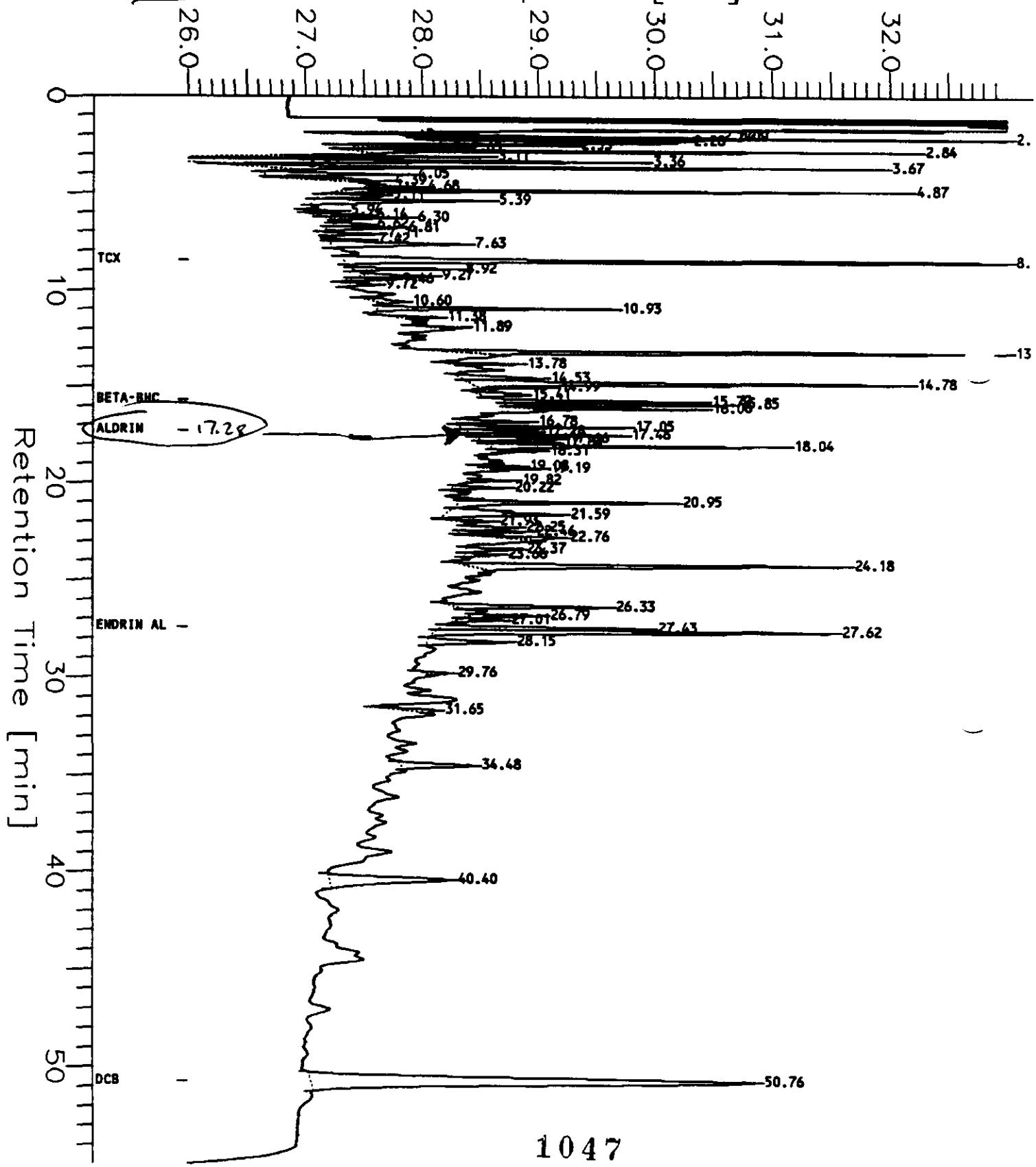
- % Diff > Factor of 3 CIRCLED as unusual.
- RT within 0.01 of edge of window unusual.
- ≥25% of nearby regions have peaks of similar size: { (# Pks in ± 1min from Target) / (# of RTW intervals possible ±1min) }

HPECD DB-608 WB CAP. 1.0uL INJ Ref.9

Sample Name : 9207961
FileName : j:\data\D245031.raw
Method : hpec3.ins
Start Time : 0.00 min End Time : 55.00 min
Scale Factor: 0 Plot Offset: 26 mV

Sample #: CGG77 Page 1 of 1
Date : 9/4/92 1:11 PM
Time of Injection: 9/2/92 ~~11:34 PM~~ 23:34 BC 9/10/92
Low Point : 26.00 mV High Point : 33.00 mV
Plot Scale: 7 mV

CGG 77 → POSSIBLE FALSE POSITIVES—MANY INTERFERENCES



1F

# SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

CGG76

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: _____ SDG No.: CGG70

Matrix: (soil/water) WATER Lab Sample ID: 9207960

Sample wt/vol: 1000 (g/mL) ML Lab File ID: E2961

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 08/24/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/27/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.0

Number TICs found: 15

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. 2094975 | 1,3-Oxathiolane | 5.41 | 8 | JN |
| 2. | UNKNOWN | 6.72 | 5 | JNB |
| 3. | UNKNOWN | 8.15 | 3 | JN |
| 4. | UNKNOWN | 11.13 | 4 | JN |
| 5. 598027 | Phosphoric acid, diethyl est | 13.30 | 2 | JN |
| 6. | UNKNOWN | 13.45 | 2 | JN |
| 7. 56554531 | Hexanoic acid, 3,5,5-trimeth | 13.65 | 3 | JN |
| 8. | dimethylphenol isomer | 14.38 | 3 | JN |
| 9. | UNKNOWN | 18.08 | 2 | JN |
| 10. | UNKNOWN | 22.80 | 2 | JN |
| 11. | UNKNOWN | 23.28 | 2 | JN |
| 12. 80397 | Benzenesulfonamide, N-ethyl- | 24.21 | 3 | JN |
| 13. 298000 | Methyl parathion | 26.68 | 4 | JN |
| 14. | UNKNOWN | 29.06 | 6 | JN |
| 15. | UNKNOWN | 32.54 | 10 | JN |

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CGG77

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: _____ SDG No.: CGG70

Matrix: (soil/water) WATER Lab Sample ID: 9207961

Sample wt/vol: 1000 (g/mL) ML Lab File ID: E2962

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 08/24/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/27/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.0

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

| CAS NO. | COMPOUND | | 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 |
| 95-50-1 | 1,2-Dichlorobenzene | 10 | U |
| 95-48-7 | 2-Methylphenol | 10 | U |
| 108-60-1 | 2,2'-oxybis(1-Chloropropane) | 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 |
| 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 | 25 | U |
| 91-58-7 | 2-Chloronaphthalene | 10 | U |
| 88-74-4 | 2-Nitroaniline | 25 | U |
| 131-11-3 | Dimethylphthalate | 10 | U |
| 208-96-8 | Acenaphthylene | 10 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 10 | U |
| 99-09-2 | 3-Nitroaniline | 25 | U |
| 83-32-9 | Acenaphthene | 10 | U |

1C

# SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CGG77

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: _____ SDG No.: CGG70

Matrix: (soil/water) WATER Lab Sample ID: 9207961

Sample wt/vol: 1000 (g/mL) ML Lab File ID: E2962

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 08/24/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/27/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 51-28-5 | 2,4-Dinitrophenol | 25 | U |
| 100-02-7 | 4-Nitrophenol | 25 | 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-phenylether | 10 | U |
| 86-73-7 | Fluorene | 10 | U |
| 100-01-6 | 4-Nitroaniline | 25 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 25 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 10 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 10 | U |
| 118-74-1 | Hexachlorobenzene | 10 | U |
| 87-86-5 | Pentachlorophenol | 25 | U |
| 85-01-8 | Phenanthrene | 10 | U |
| 120-12-7 | Anthracene | 10 | U |
| 86-74-8 | Carbazole | 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 | 10 | U |
| 56-55-3 | Benzo(a)anthracene | 10 | U |
| 218-01-9 | Chrysene | 10 | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 1 | J |
| 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

# SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

CGG77

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: _____ SDG No.: CGG70

Matrix: (soil/water) WATER Lab Sample ID: 9207961

Sample wt/vol: 1000 (g/mL) ML Lab File ID: E2962

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 08/24/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/27/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.0

Number TICs found: 13

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. 2094975 | 1,3-Oxathiolane | 5.40 | 8 | JN |
| 2. | UNKNOWN | 6.71 | 3 | JNB |
| 3. | UNKNOWN | 8.15 | 3 | JN |
| 4. | UNKNOWN | 11.12 | 4 | JN |
| 5. 598027 | Phosphoric acid, diethyl est | 13.31 | 2 | JN |
| 6. | UNKNOWN | 13.45 | 2 | JN |
| 7. 56554531 | Hexanoic acid, 3,5,5-trimeth | 13.65 | 4 | JN |
| 8. | Dimethyl phenol isomer | 14.37 | 2 | JN |
| 9. | UNKNOWN | 16.85 | 2 | JN |
| 10. | UNKNOWN | 19.07 | 2 | JN |
| 11. 80397 | Benzenesulfonamide, N-ethyl- | 24.22 | 6 | JN |
| 12. 57103 | Hexadecanoic acid | 27.45 | 2 | JN |
| 13. | UNKNOWN | 32.54 | 10 | JN |

ref.9 000099

8A

# VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: PRECISION A L  Contract: _____

Lab Code: PRECIS  Case No.: SMO002  SAS No.: 7453C01  SDG No.: CGG72

Lab File ID (Standard): A8172  Date Analyzed: 08/26/92

Instrument ID: HPVOA  Time Analyzed: 1425

GC Column: DB-624  ID: 0.530(mm)  Heated Purge: (Y/N) Y

| | | IS1(BCM) AREA # | RT # | IS2(DFB) AREA # | RT # | IS3(CBZ) AREA # | RT # |
|---|---|---|---|---|---|---|---|
| | 12 HOUR STD | 31925 | 9.03 | 70581 | 11.47 | 69805 | 17.31 |
| | UPPER LIMIT | 63850 | 9.53 | 141162 | 11.97 | 139610 | 17.81 |
| | LOWER LIMIT | 15962 | 8.53 | 35290 | 10.97 | 34902 | 16.81 |
| | EPA SAMPLE NO. | | | | | | |
| 01 | CGG72 | 40% 12798 * | 9.05 | 49417 | 11.50 | 47% 33069 * | 17.32 |
| 02 | CGG73 | 36% 11346 * | 9.07 | 47438 | 11.50 | 41% 28944 * | 17.32 |
| 03 | CGG81 | 21542 | 9.06 | 52907 | 11.51 | 48% 33422 * | 17.32 |
| 04 | CGG81MS | 18902 | 9.08 | 47511 | 11.51 | 42% 29183 * | 17.34 |
| 05 | CGG81MSD | 39% 12363 * | 9.08 | 50859 | 11.51 | 49% 34354 * | 17.33 |
| 06 | VBLK10 | 25522 | 9.06 | 58098 | 11.49 | 46986 | 17.32 |

IS1 (BCM) = Bromochloromethane
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = + 100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = +0.50 minutes of internal standard RT.
RT LOWER LIMIT = -0.50 minutes of internal standard RT.

# Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

| HALLIBURTON NUS Environmental Corporation and Subsidiaries | ref. 9 | STANDARD CALCULATION SHEET |
|---|---|---|

| CLIENT: | FILE NO.: | BY: | PAGE OF |
|---|---|---|---|
| SUBJECT: | | CHECKED BY: | DATE: |

Peak at RT 25.93 (butylbenzyl phthalate) in sample CGG73RE exactly matches that in SBLK02.

$$\text{Effective } 1L_{Blank} = 1L_{sample} \times \frac{Ht_{Blank}\,BBP}{Ht_{Blank}\,IS} \times \frac{Ht_{sample}\,IS}{Ht_{sample}\,BBP}$$

$$= 1.67\text{ ng} \times \frac{0.75\text{ units}}{16.75\text{ units}} \times \frac{15.5\text{ units}}{3\text{ units}}$$

$$= 0.386\text{ ng}$$

10A
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

Ref. 10

EPA SAMPLE NO.

CGG77

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: SDG No.: CGG70

Lab Sample ID : 9207961 Dates(s) Analyzed: 09/02/92 09/02/92

Instrument ID (1): HPECC Instrument ID (2): HPECD

GC Column(1): RTX-1701 ID: 0.53(mm) GC Column(2): RTX-50 ID: 0.53(mm)

| ANALYTE | COL | RT | RT WINDOW FROM | RT WINDOW TO | CONCENTRATION | %D |
|---|---|---|---|---|---|---|
| Aldrin | 1 | 15.58 | 15.51 | 15.61 | 0.026 | |
| | 2 | 17.28 | 17.28 | 17.38 | 0.016 | 62.5 |

near edge of window



FORM X PEST-1 3/90

10A

PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

Ref. 10

EPA SAMPLE NO.

CGG78

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: SDG No.: CGG70

Lab Sample ID : 9207962 Dates(s) Analyzed: 09/03/92 09/03/92

Instrument ID (1): HPECC Instrument ID (2): HPECD

GC Column(1): RTX-1701 ID: 0.53(mm) GC Column(2): RTX-50 ID: 0.53(mm)

| ANALYTE | COL | RT | RT WINDOW FROM | RT WINDOW TO | CONCENTRATION | %D |
|---|---|---|---|---|---|---|
| Methoxychlor | 1 | 27.79 | 27.71 | 27.85 | 29 | |
| | 2 | 33.12 | 33.03 | 33.17 | 21 | 38.1 |
| alpha-Chlordane | 1 | 20.30 | 20.22 | 20.36 | 0.58 | |
| | 2 | 21.36 | 21.30 | 21.44 | 0.46 | 26.1 |

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CGG78

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: SDG No.: CGG70

Matrix: (soil/water) SOIL Lab Sample ID: 9207962

Sample wt/vol: 29.8 (g/mL) G Lab File ID:

% Moisture: 22 decanted: (Y/N) N Date Received: 08/20/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 08/24/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 09/03/92

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 7.8 Sulfur Cleanup: (Y/N) N

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | 2.2 | U |
| 319-85-7 | beta-BHC | 2.2 | U |
| 319-86-8 | delta-BHC | 2.2 | U |
| 58-89-9 | gamma-BHC (Lindane) | 2.2 | U |
| 76-44-8 | Heptachlor | 2.2 | U |
| 309-00-2 | Aldrin | 2.2 | U |
| 1024-57-3 | Heptachlor epoxide | 2.2 | U |
| 959-98-8 | Endosulfan I | 2.2 | U |
| 60-57-1 | Dieldrin | 4.3 | U |
| 72-55-9 | 4,4'-DDE | 4.3 | U |
| 72-20-8 | Endrin | 4.3 | U |
| 33213-65-9 | Endosulfan II | 4.3 | U |
| 72-54-8 | 4,4'-DDD | 4.3 | U |
| 1031-07-8 | Endosulfan sulfate | 4.3 | U |
| 50-29-3 | 4,4'-DDT | 4.3 | U |
| 72-43-5 | Methoxychlor | 21 | JP |
| 53494-70-5 | Endrin ketone | 4.3 | U |
| 7421-36-3 | Endrin aldehyde | 4.3 | U |
| 5103-71-9 | alpha-Chlordane | 0.46 | JP |
| 5103-74-2 | gamma-Chlordane | 2.2 | U |
| 8001-35-2 | Toxaphene | 220 | U |
| 12674-11-2 | Aroclor-1016 | 43 | U |
| 11104-28-2 | Aroclor-1221 | 87 | U |
| 11141-16-5 | Aroclor-1232 | 43 | U |
| 53469-21-9 | Aroclor-1242 | 43 | U |
| 12672-29-6 | Aroclor-1248 | 43 | U |
| 11097-69-1 | Aroclor-1254 | 43 | U |
| 11096-82-5 | Aroclor-1260 | 43 | U |

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CGG82

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: SDG No.: CGG70

Matrix: (soil/water) WATER Lab Sample ID: 9207965

Sample wt/vol: 1040 (g/mL) ML Lab File ID:

% Moisture: decanted: (Y/N) Date Received: 08/20/92

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/24/92

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 09/03/92

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 6.5 Sulfur Cleanup: (Y/N) N

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | 0.048 | U |
| 319-85-7 | beta-BHC | 0.048 | U |
| 319-86-8 | delta-BHC | 0.048 | U |
| 58-89-9 | gamma-BHC (Lindane) | 0.048 | U |
| 76-44-8 | Heptachlor | 0.048 | U |
| 309-00-2 | Aldrin | 0.048 | U |
| 1024-57-3 | Heptachlor epoxide | 0.048 | U |
| 959-98-8 | Endosulfan I | 0.048 | U |
| 60-57-1 | Dieldrin | 0.097 | U |
| 72-55-9 | 4,4'-DDE | 0.097 | U |
| 72-20-8 | Endrin | 0.097 | U |
| 33213-65-9 | Endosulfan II | 0.097 | U |
| 72-54-8 | 4,4'-DDD | 0.097 | U |
| 1031-07-8 | Endosulfan sulfate | 0.097 | U |
| 50-29-3 | 4,4'-DDT | 0.097 | U |
| 72-43-5 | Methoxychlor | 0.48 | U |
| 53494-70-5 | Endrin ketone | 0.097 | U |
| 7421-36-3 | Endrin aldehyde | 0.097 | U |
| 5103-71-9 | alpha-Chlordane | 0.048 | U |
| 5103-74-2 | gamma-Chlordane | 0.048 | U |
| 8001-35-2 | Toxaphene | 4.8 | U |
| 12674-11-2 | Aroclor-1016 | 0.97 | U |
| 11104-28-2 | Aroclor-1221 | 1.9 | U |
| 11141-16-5 | Aroclor-1232 | 0.97 | U |
| 53469-21-9 | Aroclor-1242 | 0.97 | U |
| 12672-29-6 | Aroclor-1248 | 0.97 | U |
| 11097-69-1 | Aroclor-1254 | 0.97 | U |
| 11096-82-5 | Aroclor-1260 | 0.97 | U |

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

ref.3

(LAB DID NOT REPORT Pesticides)

EPA SAMPLE NO.

CGG79

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SM0002 SAS No.: 7453C0 SDG No.: CGG72

Matrix: (soil/water) SOIL Lab Sample ID: 8303-1

Sample wt/vol: 30.0 (g/mL) G Lab File ID: _____

% Moisture: 15 decanted: (Y/N) N Date Received: 08/19/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 08/28/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 09/03/92

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 8.4 Sulfur Cleanup: (Y/N) N

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | 0.40 | U |
| 319-85-7 | beta-BHC | 0.40 | U |
| 319-86-8 | delta-BHC | 0.40 | U |
| 58-89-9 | gamma-BHC (Lindane) | 0.40 | U |
| 76-44-8 | Heptachlor | 0.40 | U |
| 309-00-2 | Aldrin | 0.40 | U |
| 1024-57-3 | Heptachlor epoxide | 0.40 | U |
| 959-98-8 | Endosulfan I | 0.40 | U |
| 60-57-1 | Dieldrin | 0.78 | U |
| 72-55-9 | 4,4'-DDE | 0.78 | U |
| 72-20-8 | Endrin | 0.78 | U |
| 33213-65-9 | Endosulfan II | 0.78 | U |
| 72-54-8 | 4,4'-DDD | 0.78 | U |
| 1031-07-8 | Endosulfan sulfate | 0.78 | U |
| 50-29-3 | 4,4'-DDT | 0.78 | U |
| 72-43-5 | Methoxychlor | 4.0 | U |
| 53494-70-5 | Endrin ketone | 0.78 | U |
| 7421-36-3 | Endrin aldehyde | 0.78 | U |
| 5103-71-9 | alpha-Chlordane | 0.40 | U |
| 5103-74-2 | gamma-Chlordane | 0.40 | U |
| 8001-35-2 | Toxaphene | 40 | U |
| 12674-11-2 | Aroclor-1016 | 7.8 | U |
| 11104-28-2 | Aroclor-1221 | 16 | U |
| 11141-16-5 | Aroclor-1232 | 7.8 | U |
| 53469-21-9 | Aroclor-1242 | 7.8 | U |
| 12672-29-6 | Aroclor-1248 | 7.8 | U |
| 11097-69-1 | Aroclor-1254 | 7.8 | U |
| 11096-82-5 | Aroclor-1260 | 7.8 | U |

ref. 3

6E

# PESTICIDE INITIAL CALIBRATION OF SINGLE COMPONENT ANALYTES

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SM0002 SAS No.: 7453C01 SDG No.: CGG72

Instrument ID: H5890B Level (x low): low 1.0 mid 4.0 high 16.0

GC Column: DB-1701 ID: 0.53(mm) Date(s) Analyzed: 09/02/92 09/02/92

Calib. Support Data for Compounds added by reviewer

| COMPOUND | CALIBRATION FACTORS LOW | MID | HIGH | MEAN | %RSD |
|---|---|---|---|---|---|
| alpha-BHC | 8590000 | 10900000 | 16900000 | 12100000 | 35.4 |
| beta-BHC | 9290000 | 9910000 | 11000000 | 10100000 | 8.6 |
| delta-BHC | 7740000 | 8860000 | 14200000 | 10300000 | 33.6 |
| gamma-BHC (Lindane) | 9530000 | 12300000 | 17100000 | 13000000 | 29.5 |
| Heptachlor | 11700000 | 12100000 | 13500000 | 12400000 | 7.6 |
| Aldrin | 10800000 | 11700000 | 16500000 | 13000000 | 23.6 |
| Heptachlor epoxide | 12200000 | 12400000 | 15500000 | 13400000 | 13.8 |
| Endosulfan I | 9920000 | 10900000 | 13100000 | 11300000 | 14.4 |
| Dieldrin | 9680000 | 11600000 | 14300000 | 11900000 | 19.6 |
| 4,4'-DDE | 10200000 | 12100000 | 15800000 | 12700000 | 22.4 |
| Endrin | 7420000 | 7860000 | 10100000 | 8460000 | 17.0 |
| Endosulfan II | 10900000 | 11300000 | 13600000 | 11900000 | 12.2 |
| 4,4'-DDD | 7270000 | 8630000 | 10700000 | 8870000 | 19.5 |
| Endosulfan sulfate | 7860000 | 8170000 | 10400000 | 8810000 | 15.7 |
| 4,4'-DDT | 4550000 | 5110000 | 7430000 | 5700000 | 26.8 |
| Methoxychlor | 3640000 | 3760000 | 4090000 | 3830000 | 6.1 |
| Endrin ketone | 6780000 | 7400000 | 9960000 | 8050000 | 21.0 |
| Endrin aldehyde | 2960000 | 2580000 | 3390000 | 2980000 | 13.6 |
| alpha Chlordane | 14300000 | 14700000 | 17400000 | 15500000 | 10.9 |
| gamma Chlordane | 14100000 | 13900000 | 17000000 | 15000000 | 11.6 |
| Tetrachloro-m-xylene | 14400000 | 15200000 | 15800000 | 15100000 | 4.6 |
| Decachlorobiphenyl | 17500000 | 15700000 | 15100000 | 16100000 | 7.8 |

* Surrogate calibration factors are measured from Standard Mix A analyses

%RSD must be less than or equal 20.0% for all compounds except the surrogates, where %RSD must be less than or equal to 30.0%. Up to two target compounds, but not surrogates, may have %RSD greater than 20.0% but less than or equal to 30.0%.

# APPENDIX F

# SUPPORT DOCUMENTATION

# BLANK ANALYSIS RESULTS FOR TARGET COMPOUNDS

| FRACTION | TYPE | CONC | MATRIX | SAMPLE # | SOURCE OF $H_2O$ | CONTAMINANTS (CONCENTRATION / DETECTION LIM |
|---|---|---|---|---|---|---|
| VOA | HOLDING BLANK Lab Low Soil | | | VBLK26 | LAB | Methylene chloride (1) (1.14 ug/kg) |
| VOA | Lab Low Soil | | | VBLK27 | LAB | Acetone (1) (2.08 ug/kg) |
| BNA | Lab Low water | | | SBLK24 | LAB | Bis(2-ethylhexyl) phthalate (2) (0.4 |
| BNA | Field Low Aq | | | CGG83 | HNUS | Bis(2-ethylhexyl) phthalate (2) (4.6 ug |
| VOA | Field Low Aq | | | CGG83 | HNUS | ND |
| VOA | Field Trip Blk | | | CGG91 | HNUS | methylene chloride (3 ug/L) (2) |
| VOA | Lab Low Aq | | | VBLK24 | Lab | |
| VOA | Lab Low Aq | | | VBLK25 | Lab | |
| BNA | Lab Low Solid | | | SBLK25 | Lab | |

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

COMMENTS:

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

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

NOTE: Post. Fraction Blanks - Not Detected
Fieldblank CGG83, PBLK27, PIBLK01, -02, -04, and -05.

Positive results for Pesticides Blanks are as follows:
PIBLK03 (Low AQ): Endosulfan I : 0.0056 ug/L

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CGG78

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: _____ SDG No.: CGG70

Matrix: (soil/water) SOIL Lab Sample ID: 9207962

Sample wt/vol: 30.6 (g/mL) G Lab File ID: E2969

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: 22 decanted: (Y/N) N Date Extracted: 08/25/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 08/28/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.8

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 410 | U |
| 111-44-4 | bis(2-Chloroethyl)ether | 410 | U |
| 95-57-8 | 2-Chlorophenol | 410 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 410 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 410 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 410 | U |
| 95-48-7 | 2-Methylphenol | 410 | U |
| 108-60-1 | 2,2'-oxybis(1-Chloropropane) | 410 | U |
| 106-44-5 | 4-Methylphenol | 410 | U |
| 621-64-7 | N-Nitroso-di-n-propylamine | 410 | U |
| 67-72-1 | Hexachloroethane | 410 | U |
| 98-95-3 | Nitrobenzene | 410 | U |
| 78-59-1 | Isophorone | 410 | U |
| 88-75-5 | 2-Nitrophenol | 410 | U |
| 105-67-9 | 2,4-Dimethylphenol | 410 | U |
| 111-91-1 | bis(2-Chloroethoxy)methane | 410 | U |
| 120-83-2 | 2,4-Dichlorophenol | 410 | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 410 | U |
| 91-20-3 | Naphthalene | 410 | U |
| 106-47-8 | 4-Chloroaniline | 410 | U |
| 87-68-3 | Hexachlorobutadiene | 410 | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 410 | U |
| 91-57-6 | 2-Methylnaphthalene | 410 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 410 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 410 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 1000 | U |
| 91-58-7 | 2-Chloronaphthalene | 410 | U |
| 88-74-4 | 2-Nitroaniline | 1000 | U |
| 131-11-3 | Dimethylphthalate | 410 | U |
| 208-96-8 | Acenaphthylene | 410 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 410 | U |
| 99-09-2 | 3-Nitroaniline | 1000 | U |
| 83-32-9 | Acenaphthene | 410 | U |

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CGG78

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: _____ SDG No.: CGG70

Matrix: (soil/water) SOIL Lab Sample ID: 9207962

Sample wt/vol: 30.6 (g/mL) G Lab File ID: E2969

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: 22 decanted: (Y/N) N Date Extracted: 08/25/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 08/28/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.8

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 51-28-5 | 2,4-Dinitrophenol | 1000 | U |
| 100-02-7 | 4-Nitrophenol | 1000 | U |
| 132-64-9 | Dibenzofuran | 410 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 410 | U |
| 84-66-2 | Diethylphthalate | 410 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 410 | U |
| 86-73-7 | Fluorene | 410 | U |
| 100-01-6 | 4-Nitroaniline | 1000 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 1000 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 410 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 410 | U |
| 118-74-1 | Hexachlorobenzene | 410 | U |
| 87-86-5 | Pentachlorophenol | 1000 | U |
| 85-01-8 | Phenanthrene | 410 | U |
| 120-12-7 | Anthracene | 410 | U |
| 86-74-8 | Carbazole | 410 | U |
| 84-74-2 | Di-n-butylphthalate | 410 | U |
| 206-44-0 | Fluoranthene | 410 | U |
| 129-00-0 | Pyrene | 410 | U |
| 85-68-7 | Butylbenzylphthalate | 410 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 410 | U |
| 56-55-3 | Benzo(a)anthracene | 410 | U |
| 218-01-9 | Chrysene | 410 | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 410 | U |
| 117-84-0 | Di-n-octylphthalate | 410 | U |
| 205-99-2 | Benzo(b)fluoranthene | 410 | U |
| 207-08-9 | Benzo(k)fluoranthene | 410 | U |
| 50-32-8 | Benzo(a)pyrene | 410 | U |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 410 | U |
| 53-70-3 | Dibenz(a,h)anthracene | 410 | U |
| 191-24-2 | Benzo(g,h,i)perylene | 410 | U |

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

CGG78

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: _____ SDG No.: CGG70

Matrix: (soil/water) SOIL Lab Sample ID: 9207962

Sample wt/vol: 30.6 (g/mL) G Lab File ID: E2969

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: 22 decanted: (Y/N) N Date Extracted: 08/25/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 08/28/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.8

Number TICs found: 16

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. 141797 | 3-Pentene-2-one, 4-methyl- | 5.33 | 150 | JNBA |
| 2. | UNKNOWN | 5.89 | 4400 | JNB |
| 3. 123422 | 2-Pentanone, 4-hydroxy-4-met | 6.57 | 38000 | JNBA |
| 4. | UNKNOWN | 8.20 | 1200 | JNB |
| 5. | UNKNOWN | 8.58 | 150 | JN |
| 6. 4436753 | 3-Hexene-2,5-dione | 8.95 | 380 | JNB |
| 7. | UNKNOWN | 10.58 | 270 | JNB |
| 8. | UNKNOWN | 11.69 | 590 | JN |
| 9. | UNKNOWN | 16.72 | 100 | JNB |
| 10. | UNKNOWN | 29.03 | 170 | JN |
| 11. 74685339 | 3-Eicosene, (E)- | 33.64 | 190 | JN |
| 12. | UNKNOWN HYDROCARBON | 35.92 | 190 | JN |
| 13. | UNKNOWN HYDROCARBON | 38.80 | 360 | JN |
| 14. | UNKNOWN | 41.56 | 100 | JN |
| 15. | UNKNOWN HYDROCARBON | 42.86 | 230 | JN |
| 16. | UNKNOWN | 42.98 | 150 | JN |

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CGG82

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: _____ SDG No.: CGG70

Matrix: (soil/water) WATER Lab Sample ID: 9207965

Sample wt/vol: 1000 (g/mL) ML Lab File ID: E2963

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 08/24/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/27/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.0

| 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 |
| 95-50-1 | 1,2-Dichlorobenzene | 10 | U |
| 95-48-7 | 2-Methylphenol | 10 | U |
| 108-60-1 | 2,2'-oxybis(1-Chloropropane) | 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 |
| 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 | 25 | U |
| 91-58-7 | 2-Chloronaphthalene | 10 | U |
| 88-74-4 | 2-Nitroaniline | 25 | U |
| 131-11-3 | Dimethylphthalate | 10 | U |
| 208-96-8 | Acenaphthylene | 10 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 10 | U |
| 99-09-2 | 3-Nitroaniline | 25 | U |
| 83-32-9 | Acenaphthene | 10 | U |

001049

ref. 22

10B
PESTICIDE IDENTIFICATION SUMMARY
FOR MULTICOMPONENT ANALYTES

EPA SAMPLE NO.

CGG80

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SM0002 SAS No.: 7453C0 SDG No.: CGG72

Lab Sample ID : 8303-2 Dates(s) Analyzed: 09/24/92 09/24/92

Instrument ID (1): H5890A Instrument ID (2): H5890B

GC Column(1): DB-608 ID: 0.53(mm) GC Column(2): DB-1701 ID: 0.53(mm)

| ANALYTE | PEAK | RT | RT WINDOW FROM | RT WINDOW TO | CONCENTRATION | MEAN CONCENTRATION | %D |
|---|---|---|---|---|---|---|---|
| Aroclor-1260 | 1 | 23.88 | 23.83 | 23.97 | 10.9 | | |
| | 2 | 24.65 | 24.58 | 24.72 | 10.7 | | |
| | 3 | 24.95 | 24.90 | 25.04 | 9.13 | | |
| COLUMN 1 | 4 | 26.48 | 26.45 | 26.59 | 11.7 | | |
| | 5 | 27.05 | 27.00 | 27.14 | 8.31 | 10 | |
| | 1 | 22.67 | 22.58 | 22.72 | 8.82 | | |
| | 2 | 23.52 | 23.45 | 23.59 | 23.8 | | |
| | 3 | 24.20 | 24.13 | 24.27 | 9.68 | | |
| COLUMN 2 | 4 | 24.87 | 24.81 | 24.95 | 16.5 | | |
| | 5 | 26.25 | 26.20 | 26.34 | 6.14 | 13 | 30.0 |

%D > 25%

At least 3 peaks are required for identification of multicomponent analytes

7A

# VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SM0002 SAS No.: 7453C01 SDG No.: CGG72

Instrument ID: HPVOA Calibration date: 09/09/92 Time: 0817

Lab File ID: A9084 Init. Calib. Date(s): 09/08/92 09/08/92

Heated Purge: (Y/N) Y Init. Calib. Times: 1425 1809

GC Column: DB-624 ID: 0.530(mm)

High %D; Clme

| COMPOUND | $\overline{RRF}$ | RRF50 | MIN RRF | %D | MAX %D |
|---|---|---|---|---|---|
| Chloromethane | 1.258 | 2.075 | 0.010 | -64.9 | |
| Bromomethane | 1.183 | 1.426 | 0.100 | -20.5 | 25.0 |
| Vinyl Chloride | 1.380 | 1.730 | 0.100 | -25.4 * | 25.0 |
| Chloroethane | 0.837 | 0.860 | 0.010 | -2.7 | |
| Methylene Chloride | 2.969 | 2.523 | 0.010 | 15.0 | |
| Acetone | 1.520 | 1.936 | 0.010 | -27.4 * | |
| Carbon Disulfide | 4.500 | 4.974 | 0.010 | -10.5 | |
| 1,1-Dichloroethene | 1.632 | 1.702 | 0.100 | -4.3 | 25.0 |
| 1,1-Dichloroethane | 3.621 | 3.752 | 0.200 | -3.6 | 25.0 |
| 1,2-Dichloroethene (total) | 0.896 | 0.912 | 0.010 | -1.8 | |
| Chloroform | 0.458 | 0.454 | 0.200 | 0.9 | 25.0 |
| 1,2-Dichloroethane | 1.877 | 1.798 | 0.100 | 4.2 | 25.0 |
| 2-Butanone | 1.614 | 1.910 | 0.010 | -18.3 | |
| 1,1,1-Trichloroethane | 1.031 | 1.041 | 0.100 | -1.0 | 25.0 |
| Carbon Tetrachloride | 0.937 | 0.906 | 0.100 | 3.3 | 25.0 |
| Bromodichloromethane | 1.823 | 1.897 | 0.200 | -4.1 | 25.0 |
| 1,2-Dichloropropane | 0.445 | 0.437 | 0.010 | 1.8 | |
| cis-1,3-Dichloropropene | 1.263 | 1.312 | 0.200 | -3.9 | 25.0 |
| Trichloroethene | 0.356 | 0.361 | 0.300 | -1.4 | 25.0 |
| Dibromochloromethane | 1.552 | 1.630 | 0.100 | -5.0 | 25.0 |
| 1,1,2-Trichloroethane | 0.728 | 0.744 | 0.100 | -2.2 | 25.0 |
| Benzene | 1.954 | 1.957 | 0.500 | -0.2 | 25.0 |
| trans-1,3-Dichloropropene | 1.121 | 1.175 | 0.100 | -4.8 | 25.0 |
| Bromoform | 1.293 | 1.397 | 0.100 | -8.0 | 25.0 |
| 4-Methyl-2-Pentanone | 0.601 | 0.514 | 0.010 | 14.5 | |
| 2-Hexanone | 0.471 | 0.458 | 0.010 | 2.8 | |
| Tetrachloroethene | 0.506 | 0.489 | 0.200 | 3.4 | 25.0 |
| 1,1,2,2-Tetrachloroethane | 0.723 | 0.667 | 0.500 | 7.7 | 25.0 |
| Toluene | 0.865 | 0.790 | 0.400 | 8.7 | 25.0 |
| Chlorobenzene | 1.080 | 1.026 | 0.500 | 5.0 | 25.0 |
| Ethylbenzene | 0.467 | 0.440 | 0.100 | 5.8 | 25.0 |
| Styrene | 1.040 | 0.966 | 0.300 | 7.1 | 25.0 |
| Xylene (total) | 0.586 | 0.556 | 0.300 | 5.1 | 25.0 |
| Toluene-d8 | 1.454 | 1.382 | 0.010 | 5.0 | |
| Bromofluorobenzene | 0.830 | 0.777 | 0.200 | 6.4 | 25.0 |
| 1,2-Dichloroethane-d4 | 1.603 | 1.531 | 0.010 | 4.5 | |

All other compounds must meet a minimum RRF of 0.010.

* No positive detects not attributable to blank contamination; no action

**HALLIBURTON NUS Environmental Corporation and Subsidiaries** — Ref. 26 — **STANDARD CALCULATION SHEET**

| CLIENT: ARCS III | FILE NO.: | BY: (b) (4) | PAGE 1 OF 1 |
|---|---|---|---|
| SUBJECT: Relative Standard Deviation of Pesticides in CGG81, -81MS, -81MSD | | CHECKED BY: same | DATE: 12/31/92 |

| conc. (ug/kg) in CGG81 | conc. (ug/kg) in CGG 81 MS | conc. (ug/kg) in GGG 81 MSD | Compound | % RSD |
|---|---|---|---|---|
| 0.20 | NA - in m. Spike | NA - in spike | Heptachlor | NA |
| 0.37 | 0.29 | 0.50 | Heptachlor epoxide | 27% |
| 1.8 | 0.97 | 1.4 | γ-chlordane | 30% |
| 2.1 | 1.1 | 1.8 | α-chlordane | 31% |
| 0.20 | 0.37 | 0.52 | 4,4'-DDE | 44% |

Verified Laboratory calculation of concentration for γ-chlordane on both GC columns:

| | Reviewer-calc'd DB608 | Reviewer-calc'd DB1701 | LAB values DB608 | LAB values DB1701 |
|---|---|---|---|---|
| CGG81MS γ-chlordane ug/kg | 1.148 | 1.72 | 1.1 | 1.7 |

| CGG73 Conc. | CGG73MS Conc. | CGG73MSD Conc. | Compound | % RSD |
|---|---|---|---|---|
| — ND — | 2.2 | 2.7 | 4,4'DDE | INDE-terminate |

TPO: [ ] ACTION [X] FYI

Region III

## INORGANIC REGIONAL DATA ASSESSMENT SUMMARY

CASE NO. 18622

LABORATORY Skinner & Sherman

SDG NO. MCHG01

DATA USER Deb Szaro, TPO, EPA Region I

SOW 3/90

REVIEW COMPLETION DATE 1/13/93

NO. OF SAMPLES 10 MATRIX UNFILTERED AQUEOUS

REVIEWER [ ] ESD [ ] ESAT [X] OTHER, CONTRACT/CONTRACTOR ARCS III/Halliburton NUS

| | ICP | AA | Hg | CYANIDE |
|---|---|---|---|---|
| 1. HOLDING TIMES | O | O | O | O |
| 2. INITIAL CALIBRATIONS | O | O | O | O |
| 3. CONTINUING CALIBRATIONS | O | O | O | O |
| 4. FIELD BLANKS ("F" = not applicable) | O | M3 | O | O |
| 5. LABORATORY BLANKS | M4 | O | O | O |
| 6. ICS | O | | | |
| 7. LCS | O | O | | |
| 8. DUPLICATE ANALYSIS | X9 | O | O | O |
| 9. MATRIX SPIKE & GFAA PDS | O | X7 | O | O |
| 10. MSA | | O | | |
| 11. SERIAL DILUTION | O | | | |
| 12. SAMPLE VERIFICATION | O | O | O | O |
| 13. REGIONAL QC ("F" = not applicable) | X6 | O | X6 | O |
| 14. OVERALL ASSESSMENT | O | O | O | O |

O = No problems or minor problems that do not affect data usability.
X = No more than *about* 5% of the data points are qualified as either estimated or unusable.
M = More than *about* 5% of the data points are qualified as estimated.
Z = More than *about* 5% of the data points are qualified as unusable.
A = DPO action requested; use in conjunction with one of the above codes.

TPO ACTION ITEMS:

AREAS OF CONCERN: M3 = See Note 3. M4 = See Note 4.
X6 = See note 6. X7 = See Note 7. X9 = See Note 9.

TPO: [ ] ACTION [X] FYI

Region III

## INORGANIC REGIONAL DATA ASSESSMENT SUMMARY

CASE NO. 18622

LABORATORY Skinner & Sherman

SDG NO. MCHG15

DATA USER Deb Szaro, TPO, EPA Region I

SOW 3/90

REVIEW COMPLETION DATE 1/13/93

NO. OF SAMPLES 4

MATRIX AQUEOUS-FIELD-FILTERED

REVIEWER [ ] ESD [ ] ESAT [X] OTHER, CONTRACT/CONTRACTOR ARCS III/Halliburton NUS

| | ICP | AA | Hg | CYANIDE |
|---|---|---|---|---|
| 1. HOLDING TIMES | O | O | O | O |
| 2. INITIAL CALIBRATIONS | O | O | O | O |
| 3. CONTINUING CALIBRATIONS | O | O | O | O |
| 4. FIELD BLANKS ("F" = not applicable) | M2 | X3 | O | O |
| 5. LABORATORY BLANKS | M4 | O | O | O |
| 6. ICS | O | | | |
| 7. LCS | O | O | | |
| 8. DUPLICATE ANALYSIS | O | O | O | O |
| 9. MATRIX SPIKE & GFAA PDS | O | X7 | O | O |
| 10. MSA | | O | | |
| 11. SERIAL DILUTION | O | | | |
| 12. SAMPLE VERIFICATION | O | O | O | O |
| 13. REGIONAL QC ("F" = not applicable) | O | O | O | O |
| 14. OVERALL ASSESSMENT | O | O | O | O |

O = No problems or minor problems that do not affect data usability.
X = No more than *about* 5% of the data points are qualified as either estimated or unusable.
M = More than *about* 5% of the data points are qualified as estimated.
Z = More than *about* 5% of the data points are qualified as unusable.
A = DPO action requested; use in conjunction with one of the above codes.

TPO ACTION ITEMS:

AREAS OF CONCERN: M2 = See Note 2. X3 = See Note 3. M4 = See Note 4. X7 = See Note 7.

TPO: [ ] ACTION [X] FYI

Region III

## INORGANIC REGIONAL DATA ASSESSMENT SUMMARY

CASE NO. 18622

LABORATORY Skinner & Sherman

SDG NO. MCMG09

DATA USER Deb Szaro, TPO, EPA Region I

SOW 3/90

REVIEW COMPLETION DATE 1/13/93

NO. OF SAMPLES 8 MATRIX SOLID

REVIEWER [ ] ESD [ ] ESAT [X] OTHER, CONTRACT/CONTRACTOR ARCS III/Halliburton NUS

| | ICP | AA | Hg | CYANIDE |
|---|---|---|---|---|
| 1. HOLDING TIMES | O | O | O | O |
| 2. INITIAL CALIBRATIONS | O | O | O | O |
| 3. CONTINUING CALIBRATIONS | O | O | O | O |
| 4. FIELD BLANKS ("F" = not applicable) | O | O | O | O |
| 5. LABORATORY BLANKS | M4 | M5 | O | O |
| 6. ICS | O | | | |
| 7. LCS | O | O | | |
| 8. DUPLICATE ANALYSIS | O | O | O | O |
| 9. MATRIX SPIKE & GFAA PDS | X7 | X7 | O | O |
| 10. MSA | | X8 | | |
| 11. SERIAL DILUTION | O | | | |
| 12. SAMPLE VERIFICATION | O | O | O | O |
| 13. REGIONAL QC ("F" = not applicable) | X6 | O | O | O |
| 14. OVERALL ASSESSMENT | O | X1 | O | O |

O = No problems or minor problems that do not affect data usability.
X = No more than *about* 5% of the data points are qualified as either estimated or unusable.
M = More than *about* 5% of the data points are qualified as estimated.
Z = More than *about* 5% of the data points are qualified as unusable.
A = DPO action requested; use in conjunction with one of the above codes.

TPO ACTION ITEMS:

AREAS OF CONCERN: X1 = See Note 1. M4 = See Note 4. M5 = See Note 5. X6 = See Note 6. X7 = See Note 7. X8 = See Note 8.

000745

EPA SAMPLE NO.

CGG81

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

ref. 3

(LAB DTL not Report Pestrol)

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SMO002 SAS No.: 745300 SDG No.: CGG72

Matrix: (soil/water) SOIL Lab Sample ID: 8251-1

Sample wt/vol: 30.4 (g/mL) G Lab File ID: _____

% Moisture: 8 decanted: (Y/N) N Date Received: 08/19/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 08/26/92

Concentrated Extract Volume: 500 (uL) Date Analyzed: 09/03/92

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 8.0 Sulfur Cleanup: (Y/N) N

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | 0.36 | U |
| 319-85-7 | beta-BHC | 0.36 | U |
| 319-86-8 | delta-BHC | 0.36 | U |
| 58-89-9 | gamma-BHC (Lindane) | 0.36 | U |
| 76-44-8 | Heptachlor | 0.36 | U |
| 309-00-2 | Aldrin | 0.36 | U |
| 1024-57-3 | Heptachlor epoxide | 0.36 | U |
| 959-98-8 | Endosulfan I | 0.36 | U |
| 60-57-1 | Dieldrin | 0.71 | U |
| 72-55-9 | 4,4'-DDE | 0.71 | U |
| 72-20-8 | Endrin | 0.71 | U |
| 33213-65-9 | Endosulfan II | 0.71 | U |
| 72-54-8 | 4,4'-DDD | 0.71 | U |
| 1031-07-8 | Endosulfan sulfate | 0.71 | U |
| 50-29-3 | 4,4'-DDT | 0.71 | U |
| 72-43-5 | Methoxychlor | 3.6 | U |
| 53494-70-5 | Endrin ketone | 0.71 | U |
| 7421-36-3 | Endrin aldehyde | 0.71 | U |
| 5103-71-9 | alpha-Chlordane | 0.36 | U |
| 5103-74-2 | gamma-Chlordane | 0.36 | U |
| 8001-35-2 | Toxaphene | 36 | U |
| 12674-11-2 | Aroclor-1016 | 7.1 | U |
| 11104-28-2 | Aroclor-1221 | 14 | U |
| 11141-16-5 | Aroclor-1232 | 7.1 | U |
| 53469-21-9 | Aroclor-1242 | 7.1 | U |
| 12672-29-6 | Aroclor-1248 | 7.1 | U |
| 11097-69-1 | Aroclor-1254 | 7.1 | U |
| 11096-82-5 | Aroclor-1260 | 7.1 | U |

ref. 3

CGF79 Compounds ADDED

000726

| | | | | | | |
|---|---|---|---|---|---|---|
| 26 | ENDRIN | 0.007!! | 0.007!! | 0.000 | 4181 | 23.083 |
| 27 | | | | | 61193 | 23.333 |
| 28 | 4,4'-DDD | 0.012!! | 0.012!! | 0.000 | 65199 | 24.683 |
| 29 | | | | | 14549 | 26.050 |
| 30 | | | | | 25392 | 26.700 |
| 31 | | | | | 11021 | 27.717 |
| 32 | | | | | 50786 | 28.433 |
| 33 | | | | | 221967 | 28.850 |
| 34 | DCB | 0.057 | 0.057 | 0.000 | 879709 | 36.033 |
| 35 | | | | | 360584 | 38.983 |
| 36 | | | | | 36063 | 40.100 |
| 37 | | | | | 101808 | 41.083 |
| 38 | | | | | 60068 | 42.900 |
| 39 | | | | | 45170 | 44.267 |
| TOTAL | | 0.118!! | 0.118!! | | 5094566 | |

!! Result calculation based on peak response more than 10% outside of calibration range.

ref.3

000750

CGG81 – Compounds added

| | | | | | | |
|---|---|---|---|---|---|---|
| 20 | GAMMA-BHC | 0.005!! | 0.005!! | 0.000 | 16648 | 15.200 |
| 21 | | | | | 45853 | 15.400 |
| 22 | HEPTACHLOR | 0.004!! | 0.004!! | 0.000 | 34190 | 16.000 |
| 23 | | | | | 36042 | 16.583 |
| 24 | | | | | 63949 | 16.850 |
| 25 | | | | | 20976 | 17.350 |
| 26 | | | | | 4649 | 17.583 |
| 27 | | | | | 115316 | 17.900 |
| 28 | BETA-BHC | 0.011 | 0.011 | 0.000 | 106546 | 18.083 |
| 29 | | | | | 124345 | 18.433 |
| 30 | | | | | 28194 | 18.950 |
| 31 | | | | | 33324 | 19.217 |
| 32 | | | | | 75948 | 19.467 |
| 33 | HEPT. EPOXIDE | 0.008 | 0.008 | 0.000 | 86111 | 19.850 |
| 34 | | | | | 94342 | 20.183 |
| 35 | | | | | 74143 | 20.500 |
| 36 | | | | | 59340 | 20.733 |
| 37 | G. CHLORDANE | 0.023 | 0.023 | 0.000 | 351423 | 21.100 |
| 38 | A. CHLORDANE | 0.038 | 0.038 | 0.000 | 639665 | 21.317 |
| 39 | 4,4'-DDE | 0.011!! | 0.011!! | 0.000 | 60130 | 21.633 |
| 40 | | | | | 125651 | 21.917 |
| 41 | | | | | 75048 | 22.117 |
| 42 | | | | | 98115 | 22.467 |
| 43 | | | | | 30956 | 22.833 |
| 44 | ENDRIN | 0.009!! | 0.009!! | 0.000 | 26437 | 23.083 |
| 45 | | | | | 123833 | 23.333 |
| 46 | | | | | 102375 | 23.767 |
| 47 | | | | | 45846 | 24.033 |
| 48 | | | | | 147279 | 24.267 |
| 49 | | | | | 484572 | 24.783 |
| 50 | | | | | 129864 | 26.033 |
| 51 | | | | | 97529 | 26.250 |
| 52 | | | | | 133086 | 26.717 |
| 53 | | | | | 287374 | 27.283 |
| 54 | | | | | 198352 | 29.050 |
| 55 | DCB | 0.008!! | 0.008!! | 0.000 | 153148 | 36.033 |
| 56 | | | | | 103120 | 38.983 |
| TOTAL | | 0.121!! | 0.121!! | | 11885344 | |

!! Result calculation based on peak response more than 10% outside of calibration range.

ORIGINAL
(Red)

ref.3

000748

MAXIMA (c)1990 Dynamic Solutions, Division of Millipore

# MAXIMA 820 CUSTOM REPORT

Printed: 28-SEP-1992 16:11:09

CGG81 - Compounds ADDED BY Reviewer

SAMPLE: 8251-1
#27 in Method: PESTICIDES 8080
Acquired: 3-SEP-1992 16:00
Rate: 1.0 points/sec
Duration: 47.000 minutes
Operator: JJB

Type: UNKN
Instrument: HP5890P
Filename: 209EC038
Index: Disk
Injection Volume: 1.0

DETECTOR: DB-608

| PK# | Component Name | Solution Conc (ng/ul ) | Original Conc (ug/kg ) | Response Factor | Peak Area | Retention Time (minutes) |
|---|---|---|---|---|---|---|
| 1 | | | | | 7880876 | 1.567 |
| 2 | | | | | 282657 | 2.100 |
| 3 | | | | | 96965 | 2.383 |
| 4 | | | | | 114937 | 6.217 |
| 5 | | | | | 111064 | 6.617 |
| 6 | | | | | 540646 | 7.367 |
| 7 | | | | | 189858 | 8.133 |
| 8 | TCX | 0.004!! | 0.004!! | 0.000 | 72593 | 10.350 |
| 9 | | | | | 10439 | 12.467 |
| 10 | | | | | 57884 | 12.650 |
| 11 | | | | | 71226 | 13.000 |
| 12 | | | | | 74072 | 15.917 |
| 13 | | | | | 26428 | 16.200 |
| 14 | HEPTACHLOR | 0.004!! | 0.004!! | 0.000 | 59314 | 16.617 |
| 15 | DELTA-BHC | 0.005!! | 0.005!! | 0.000 | 20774 | 17.100 |
| 16 | | | | | 30810 | 17.267 |
| 17 | | | | | 90028 | 17.850 |
| 18 | | | | | 70437 | 18.717 |
| 19 | | | | | 213568 | 18.883 |
| 20 | | | | | 67875 | 19.250 |
| 21 | | | | | 18137 | 19.767 |
| 22 | | | | | 109961 | 20.233 |
| 23 | HEPT. EPOXIDE | 0.006! | 0.006! | 0.000 | 79367 | 20.417 |
| 24 | | | | | 32758 | 20.583 |
| 25 | | | | | 145017 | 20.833 |
| 26 | B. CHLORDANE | 0.043 | 0.043 | 0.000 | 791195 | 21.133 |
| 27 | | | | | 92945 | 21.467 |
| 28 | A. CHLORDANE | 0.027 | 0.027 | 0.000 | 507816 | 21.800 |
| 29 | | | | | 63324 | 22.267 |
| 30 | | | | | 38417 | 22.500 |
| 31 | 4,4'-DDE | 0.007!! | 0.007!! | 0.000 | 42306 | 22.783 |
| 32 | | | | | 23284 | 23.033 |
| 33 | DIELDRIN | 0.005!! | 0.005!! | 0.000 | 21134 | 23.233 |
| 34 | | | | | 61740 | 23.450 |

6D ref.3

# PESTICIDE INITIAL CALIBRATION OF SINGLE COMPONENT ANALYTES

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SM0002 SAS No.: 7453C01 SDG No.: CGG72

Instrument ID: H5890A Level (x low): low 1.0 mid 4.0 high 16.0

GC Column: DB-608 ID: 0.53(mm) Date(s) Analyzed: 09/02/92 09/02/92

RT Support data for Pest. cpds. added by Reviewer

| COMPOUND | RT OF STANDARDS LOW | MID | HIGH | MEAN RT | RT WINDOW FROM | TO |
|---|---|---|---|---|---|---|
| alpha-BHC | 13.42 | 13.43 | 13.42 | 13.42 | 13.37 | 13.47 |
| beta-BHC | 15.45 | 15.45 | 15.45 | 15.45 | 15.40 | 15.50 |
| delta-BHC | 17.07 | 17.07 | 17.08 | 17.07 | 17.02 | 17.12 |
| gamma-BHC (Lindane) | 15.17 | 15.17 | 15.17 | 15.17 | 15.12 | 15.22 |
| Heptachlor | 16.60 | 16.60 | 16.60 | 16.60 | 16.55 | 16.65 |
| Aldrin | 18.05 | 18.05 | 18.05 | 18.05 | 18.00 | 18.10 |
| Heptachlor epoxide | 20.43 | 20.42 | 20.43 | 20.43 | 20.36 | 20.50 |
| Endosulfan I | 21.93 | 21.93 | 21.95 | 21.94 | 21.87 | 22.01 |
| Dieldrin | 23.22 | 23.22 | 23.22 | 23.22 | 23.15 | 23.29 |
| 4,4'-DDE | 22.77 | 22.75 | 22.77 | 22.76 | 22.69 | 22.83 |
| Endrin | 24.77 | 24.75 | 24.77 | 24.76 | 24.69 | 24.83 |
| Endosulfan II | 25.48 | 25.47 | 25.48 | 25.48 | 25.41 | 25.55 |
| 4,4'-DDD | 25.05 | 25.05 | 25.05 | 25.05 | 24.98 | 25.12 |
| Endosulfan sulfate | 27.57 | 27.55 | 27.57 | 27.56 | 27.49 | 27.63 |
| 4,4'-DDT | 26.38 | 26.37 | 26.38 | 26.38 | 26.31 | 26.45 |
| Methoxychlor | 31.28 | 31.28 | 31.28 | 31.28 | 31.21 | 31.35 |
| Endrin ketone | 32.43 | 32.40 | 32.43 | 32.42 | 32.35 | 32.49 |
| Endrin aldehyde | 26.98 | 26.95 | 26.97 | 26.97 | 26.90 | 27.04 |
| alpha-Chlordane | 21.78 | 21.77 | 21.78 | 21.78 | 21.71 | 21.85 |
| gamma Chlordane | 21.12 | 21.10 | 21.12 | 21.11 | 21.04 | 21.18 |
| Tetrachloro-m-xylene | 10.35 | 10.35 | 10.33 | 10.34 | 10.29 | 10.39 |
| Decachlorobiphenyl | 43.52 | 43.52 | 43.50 | 43.51 | 43.41 | 43.61 |

* Surrogate retention times are measured from Standard Mix A analyses

Retention time windows are +/- 0.05 minutes for all compounds that elut before Heptachlor epoxide, +/- 0.07 minutes for all other compounds, except +/- 0.10 minutes for Decachlorobiphenyl.

**HALLIBURTON NUS Environmental Corporation and Subsidiaries**

**STANDARD CALCULATION SHEET**

ref. 3

| CLIENT: ARCS III | FILE NO.: 3738.06 | BY: (b) (4) [redacted] | PAGE 2 OF 2 |
|---|---|---|---|
| SUBJECT: Pesticides not Reported by Lab BACKUP CALCULATIONS. | | CHECKED BY: (b) (4) [redacted] | DATE: 12/31/92 |

Formula: $\frac{\text{AREA CPD}}{\text{CAL. FCTR.}} \times \frac{\text{Extract Vol.}}{\text{vol. Injected}} \times \frac{\text{GPC init. vol.}}{\text{GPC processed vol.}} \times \frac{1}{\text{SPL. wt.}} \times \frac{100}{(\text{Dry wt \%})} = \boxed{\text{Conc.}}$

$\text{ng} \times \frac{\text{ul}}{\text{ul}} \times \frac{\text{ml}}{\text{ml}} \times \frac{1}{\text{grams}_{\text{wet}}} \times \frac{\text{g dry}}{\text{g wet}} = \boxed{\text{ug/kg}}$

(* Verified calculation valid with matrix spike CGG81 - matched lab result)

(CALCULATIONS SHOWN ONLY FOR EXTRACTS CHOSEN FOR REPORTING DATA)

| SAMPLE NO. | Compound | column used & anal. date | CONC. (ug/kg) = AREA / CAL. FCTR × Ext. vol / vol. inj. × GPC init. / GPC used × 1/SPL. wt × 100/% SOLID | CALC SQL |
|---|---|---|---|---|
| CGG79 | γ-chlordane | DB608 9/3 | 0.22 = 47812 / 16,700,000 × 1000ul / 1 ul × 50 / 2.5 × 1 / 30.03 × 100 / 85 | 0.4 |
| | | DB1701 9/3 | 0.17 = 29,620 / 13,900,000 × 1000 / 1 × 5 / 2.5 × 1 / 30.03 × 100 / 85 | Pz on cal |
| | α-chlordane | DB608 9/3 | 0.14 = 30,998 / 17,700,000 " " " " | 0.40 |
| | | DB1701 9/3 | 0.20 = 37214 / 14,700,000 | |
| | 4,4'-DDE | DB608 9/3 | 0.11 = 20,066 / 14,800,000 " " " " | 0.78 |
| | | DB1701 9/3 | 0.20 = 30,915 / 12,100,000 | |
| | 4,4'-DDD | DB608 9/3 | 0.85 = 111,630 / 10,300,000 " " " " | 0.78 |
| | | DB1701 9/3 | 0.59 = 65,199 / 8,630,000 | |
| CGG81 | Heptachlor | DB608 9/3 | 0.26 = 59314 / 16,400,000 × 500 ul / 1 ul × 10 / 2.5 × 1 / 30.41 × 100 / 92 | 0.36 |
| | | DB1701 9/3 | 0.20 = 34190 / 12,100,000 " " " " | |
| | Heptachlor epoxide | DB608 9/3 | 0.37 = 79367 / 15,200,000 " " " " | 0.36 |
| | | DB1701 9/3 | 0.50 = 86111 / 12,400,000 | |
| | γ-chlordane | DB608 9/3 | 3.39 = 791,195 / 16,700,000 " " " " | 0.36 |
| | | DB1701 9/3 | 1.81 = 351,423 / 13,900,000 | |
| | α-chlordane | DB608 9/3 | 2.05 = 507816 / 17,700,000 " " " " | 0.36 |
| | | DB1701 9/3 | 3.11 = 639665 / 14,700,000 | |
| | 4,4'DDE | DB608 9/3 | 0.20 = 42,306 / 14,800,000 " " " " | 0.71 |
| | | DB1701 9/3 | 0.36 = 60,130 / 12,100,000 | |

# PESTICIDE INITIAL CALIBRATION OF SINGLE COMPONENT ANALYTES

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SM0002 SAS No.: 7453C01 SDG No.: CGG72

Instrument ID: H5890A Level (x low): low 1.0 mid 4.0 high 16.0

GC Column: DB-608 ID: 0.53(mm) Date(s) Analyzed: 09/21/92 09/22/92

SUPPORT DATA for Deletion of DDD, CGG80

| COMPOUND | RT OF STANDARDS LOW | MID | HIGH | MEAN RT | RT WINDOW FROM | TO |
|---|---|---|---|---|---|---|
| alpha-BHC | 13.73 | 13.73 | 13.73 | 13.73 | 13.68 | 13.78 |
| beta-BHC | 15.80 | 15.80 | 15.80 | 15.80 | 15.75 | 15.85 |
| delta-BHC | 17.43 | 17.45 | 17.45 | 17.44 | 17.39 | 17.49 |
| gamma-BHC (Lindane) | 15.52 | 15.52 | 15.52 | 15.52 | 15.47 | 15.57 |
| Heptachlor | 16.97 | 16.97 | 16.97 | 16.97 | 16.92 | 17.02 |
| Aldrin | 18.43 | 18.43 | 18.43 | 18.43 | 18.38 | 18.48 |
| Heptachlor epoxide | 20.85 | 20.85 | 20.87 | 20.86 | 20.79 | 20.93 |
| Endosulfan I | 22.38 | 22.38 | 22.38 | 22.38 | 22.31 | 22.45 |
| Dieldrin | 23.68 | 23.68 | 23.68 | 23.68 | 23.61 | 23.75 |
| 4,4'-DDE | 23.22 | 23.22 | 23.22 | 23.22 | 23.15 | 23.29 |
| Endrin | 25.23 | 25.25 | 25.25 | 25.24 | 25.17 | 25.31 |
| Endosulfan II | 26.00 | 26.00 | 26.00 | 26.00 | 25.93 | 26.07 |
| 4,4'-DDD | 25.53 | 25.55 | 25.55 | 25.54 | 25.47 | 25.61 ☆ |
| Endosulfan sulfate | 28.20 | 28.20 | 28.20 | 28.20 | 28.13 | 28.27 |
| 4,4'-DDT | 26.93 | 26.93 | 26.95 | 26.94 | 26.87 | 27.01 |
| Methoxychlor | 32.12 | 32.13 | 32.13 | 32.13 | 32.06 | 32.20 |
| Endrin ketone | 33.33 | 33.32 | 33.33 | 33.33 | 33.26 | 33.40 |
| Endrin aldehyde | 27.57 | 27.57 | 27.57 | 27.57 | 27.50 | 27.64 |
| alpha Chlordane | 22.22 | 22.22 | 22.23 | 22.22 | 22.15 | 22.29 |
| gamma Chlordane | 21.53 | 21.53 | 21.55 | 21.54 | 21.47 | 21.61 |
| Tetrachloro-m-xylene | 10.58 | 10.58 | 10.58 | 10.58 | 10.53 | 10.63 |
| Decachlorobiphenyl | 45.12 | 45.12 | 45.12 | 45.12 | 45.02 | 45.22 |

* Surrogate retention times are measured from Standard Mix A analyses

Retention time windows are +/- 0.05 minutes for all compounds that elu
before Heptachlor epoxide, +/- 0.07 minutes for all other compounds,
except +/- 0.10 minutes for Decachlorobiphenyl.

RT window for DDD on DB608 shown

p. 2 of 3

001048

10A
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

ref.4

EPA SAMPLE NO.

CGG80

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SM0002 SAS No.: 7453C0 SDG No.: CGG72

Lab Sample ID : 8303-2 Dates(s) Analyzed: 09/24/92 09/24/92

Instrument ID (1): H5890A Instrument ID (2): H5890B

GC Column(1): DB-608 ID: 0.53(mm) GC Column(2): DB-1701 ID: 0.53(mm)

| ANALYTE | COL | RT | RT WINDOW FROM | RT WINDOW TO | CONCENTRATION | %D |
|---|---|---|---|---|---|---|
| 4,4'-DDD | 1 | 25.85 | 25.47 | 25.61 * | 2.1 | |
| | 2 | 24.87 | 24.80 | 24.94 | 2.8 | 33.3 |

* Outside RT window

Lab reported DDD when Outside RT window on DB608 and surrogates OK (in window)

Should be reported ND

p. 1 of 3



FORM X PEST-1 3/90

000027
EPA SAMPLE NO.

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CGG72

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SM0002 SAS No.: 7453C01 SDG No.: CGG72

Matrix: (soil/water) SOIL Lab Sample ID: 9208251-2

Sample wt/vol: 30.80 (g/mL) G Lab File ID: B8238

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: 54 decanted: (Y/N) N Date Extracted: 08/26/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/27/92

Injection Volume: 2.0 (uL) Dilution Factor: 0.5

GPC Cleanup: (Y/N) Y pH: 8.1

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 1400 | U |
| 111-44-4 | bis(2-Chloroethyl)Ether | 1400 | U |
| 95-57-8 | 2-Chlorophenol | 1400 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 1400 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 1400 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 1400 | U |
| 95-48-7 | 2-Methylphenol | 1400 | U |
| 108-60-1 | 2,2'-oxybis(1-Chloropropane) | 1400 | U |
| 106-44-5 | 4-Methylphenol | 1400 | U |
| 621-64-7 | N-Nitroso-Di-n-Propylamine | 1400 | U |
| 67-72-1 | Hexachloroethane | 1400 | U |
| 98-95-3 | Nitrobenzene | 1400 | U |
| 78-59-1 | Isophorone | 1400 | U |
| 88-75-5 | 2-Nitrophenol | 1400 | U |
| 105-67-9 | 2,4-Dimethylphenol | 1400 | U |
| 111-91-1 | bis(2-Chloroethoxy)Methane | 1400 | U |
| 120-83-2 | 2,4-Dichlorophenol | 1400 | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 1400 | U |
| 91-20-3 | Naphthalene | 1400 | U |
| 106-47-8 | 4-Chloroaniline | 1400 | U |
| 87-68-3 | Hexachlorobutadiene | 1400 | U |
| 59-50-7 | 4-Chloro-3-Methylphenol | 1400 | U |
| 91-57-6 | 2-Methylnaphthalene | 1400 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 1400 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 1400 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 3400 | U |
| 91-58-7 | 2-Chloronaphthalene | 1400 | U |
| 88-74-4 | 2-Nitroaniline | 3400 | U |
| 131-11-3 | Dimethylphthalate | 1400 | U |
| 208-96-8 | Acenaphthylene | 1400 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 1400 | U |
| 99-09-2 | 3-Nitroaniline | 3400 | U |
| 83-32-9 | Acenaphthene | 1400 | U |

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CGG72

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SM0002 SAS No.: 7453C01 SDG No.: CGG72

Matrix: (soil/water) SOIL Lab Sample ID: 9208251-2

Sample wt/vol: 30.80 (g/mL) G Lab File ID: B8238

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: 54 decanted: (Y/N) N Date Extracted: 08/26/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/27/92

Injection Volume: 2.0 (uL) Dilution Factor: 0.5

GPC Cleanup: (Y/N) Y pH: 8.1

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 51-28-5 | 2,4-Dinitrophenol | 3400 | U |
| 100-02-7 | 4-Nitrophenol | 3400 | U |
| 132-64-9 | Dibenzofuran | 1400 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 1400 | U |
| 84-66-2 | Diethylphthalate | 1400 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 1400 | U |
| 86-73-7 | Fluorene | 1400 | U |
| 100-01-6 | 4-Nitroaniline | 3400 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 3400 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 1400 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 1400 | U |
| 118-74-1 | Hexachlorobenzene | 1400 | U |
| 87-86-5 | Pentachlorophenol | 3400 | U |
| 85-01-8 | Phenanthrene | 1400 | U |
| 120-12-7 | Anthracene | 1400 | U |
| 86-74-8 | Carbazole | 1400 | U |
| 84-74-2 | Di-n-Butylphthalate | 130 | BJ |
| 206-44-0 | Fluoranthene | 1400 | U |
| 129-00-0 | Pyrene | 1400 | U |
| 85-68-7 | Butylbenzylphthalate | 1400 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 1400 | U |
| 56-55-3 | Benzo(a)Anthracene | 1400 | U |
| 218-01-9 | Chrysene | 1400 | U |
| 117-81-7 | bis(2-Ethylhexyl)Phthalate | 1400 | U |
| 117-84-0 | Di-n-Octyl Phthalate | 1400 | U |
| 205-99-2 | Benzo(b)Fluoranthene | 1400 | U |
| 207-08-9 | Benzo(k)Fluoranthene | 1400 | U |
| 50-32-8 | Benzo(a)Pyrene | 1400 | U |
| 193-39-5 | Indeno(1,2,3-cd)Pyrene | 1400 | U |
| 53-70-3 | Dibenz(a,h)Anthracene | 1400 | U |
| 191-24-2 | Benzo(g,h,i)Perylene | 1400 | U |

(1) - Cannot be separated from Diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CGG72

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SM0002 SAS No.: 7453C01 SDG No.: CGG72

Matrix: (soil/water) SOIL Lab Sample ID: 9208251-2

Sample wt/vol: 30.80 (g/mL) G Lab File ID: B8238

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: 54 decanted: (Y/N) N Date Extracted: 08/26/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/27/92

Injection Volume: 2.0 (uL) Dilution Factor: 0.5

GPC Cleanup: (Y/N) Y pH: 8.1

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. 547648 | Propanoic acid, 2-hydroxy-, | 4.15 | 1500 | BJN |
| 2. 762630 | 2-Pentene, 4,4-dimethyl-, (Z | 4.95 | 280 | JN |
| 3. | UNKNOWN | 5.30 | 490 | J |
| 4. | UNKNOWN | 5.72 | 18000 | J |
| 5. 18476578 | 2,6-Octadiene, 4,5-dimethyl- | 29.61 | 850 | BJN |

000030

EPA SAMPLE NO.

CGG73

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SM0002 SAS No.: 7453C01 SDG No.: CGG72

Matrix: (soil/water) SOIL Lab Sample ID: 9208251-3

Sample wt/vol: 30.70 (g/mL) G Lab File ID: B8239

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: 7 decanted: (Y/N) N Date Extracted: 08/26/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/27/92

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.9

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 690 | U |
| 111-44-4 | bis(2-Chloroethyl)Ether | 690 | U |
| 95-57-8 | 2-Chlorophenol | 690 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 690 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 690 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 690 | U |
| 95-48-7 | 2-Methylphenol | 690 | U |
| 108-60-1 | 2,2'-oxybis(1-Chloropropane) | 690 | U |
| 106-44-5 | 4-Methylphenol | 690 | U |
| 621-64-7 | N-Nitroso-Di-n-Propylamine | 690 | U |
| 67-72-1 | Hexachloroethane | 690 | U |
| 98-95-3 | Nitrobenzene | 690 | U |
| 78-59-1 | Isophorone | 690 | U |
| 88-75-5 | 2-Nitrophenol | 690 | U |
| 105-67-9 | 2,4-Dimethylphenol | 690 | U |
| 111-91-1 | bis(2-Chloroethoxy)Methane | 690 | U |
| 120-83-2 | 2,4-Dichlorophenol | 690 | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 690 | U |
| 91-20-3 | Naphthalene | 690 | U |
| 106-47-8 | 4-Chloroaniline | 690 | U |
| 87-68-3 | Hexachlorobutadiene | 690 | U |
| 59-50-7 | 4-Chloro-3-Methylphenol | 690 | U |
| 91-57-6 | 2-Methylnaphthalene | 690 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 690 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 690 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 1700 | U |
| 91-58-7 | 2-Chloronaphthalene | 690 | U |
| 88-74-4 | 2-Nitroaniline | 1700 | U |
| 131-11-3 | Dimethylphthalate | 690 | U |
| 208-96-8 | Acenaphthylene | 690 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 690 | U |
| 99-09-2 | 3-Nitroaniline | 1700 | U |
| 83-32-9 | Acenaphthene | 690 | U |

000031

EPA SAMPLE NO.

CGG73

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SM0002 SAS No.: 7453C01 SDG No.: CGG72

Matrix: (soil/water) SOIL Lab Sample ID: 9208251-3

Sample wt/vol: 30.70 (g/mL) G Lab File ID: B8239

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: 7 decanted: (Y/N) N Date Extracted: 08/26/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/27/92

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.9

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 51-28-5 | 2,4-Dinitrophenol | 1700 | U |
| 100-02-7 | 4-Nitrophenol | 1700 | U |
| 132-64-9 | Dibenzofuran | 690 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 690 | U |
| 84-66-2 | Diethylphthalate | 690 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 690 | U |
| 86-73-7 | Fluorene | 690 | U |
| 100-01-6 | 4-Nitroaniline | 1700 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 1700 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 690 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 690 | U |
| 118-74-1 | Hexachlorobenzene | 690 | U |
| 87-86-5 | Pentachlorophenol | 1700 | U |
| 85-01-8 | Phenanthrene | 690 | U |
| 120-12-7 | Anthracene | 690 | U |
| 86-74-8 | Carbazole | 690 | U |
| 84-74-2 | Di-n-Butylphthalate | 39 | BJ |
| 206-44-0 | Fluoranthene | 690 | U |
| 129-00-0 | Pyrene | 690 | U |
| 85-68-7 | Butylbenzylphthalate | 690 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 690 | U |
| 56-55-3 | Benzo(a)Anthracene | 690 | U |
| 218-01-9 | Chrysene | 690 | U |
| 117-81-7 | bis(2-Ethylhexyl)Phthalate | 690 | U |
| 117-84-0 | Di-n-Octyl Phthalate | 690 | U |
| 205-99-2 | Benzo(b)Fluoranthene | 690 | U |
| 207-08-9 | Benzo(k)Fluoranthene | 690 | U |
| 50-32-8 | Benzo(a)Pyrene | 690 | U |
| 193-39-5 | Indeno(1,2,3-cd)Pyrene | 690 | U |
| 53-70-3 | Dibenz(a,h)Anthracene | 690 | U |
| 191-24-2 | Benzo(g,h,i)Perylene | 690 | U |

(1) - Cannot be separated from Diphenylamine

EPA SAMPLE NO.

CGG73

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SMO002 SAS No.: 7453C01 SDG No.: CGG72

Matrix: (soil/water) SOIL Lab Sample ID: 9208251-3

Sample wt/vol: 30.70 (g/mL) G Lab File ID: B8239

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: 7 decanted: (Y/N) N Date Extracted: 08/26/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/27/92

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.9

Number TICs found: 9

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. 127004 | 2-Propanol, 1-chloro- | 4.20 | 950 | JN |
| 2. 141797 | 3-Penten-2-one, 4-methyl- | 4.95 | 210 | BJN |
| 3. | UNKNOWN | 5.33 | 350 | J |
| 4. 123422 | 2-Pentanone, 4-hydroxy-4-met | 5.75 | 12000 | JN |
| 5. 75163972 | Octadecane, 2,6-dimethyl- | 18.92 | 210 | JN |
| 6. 55333998 | Eicosane, 7-hexyl- | 25.10 | 180 | JN |
| 7. | UNKNOWN | 26.20 | 320 | J |
| 8. 19047859 | Phosphonic acid, dioctadecyl | 26.81 | .250 | JN |
| 9. 18476578 | 2,6-Octadiene, 4,5-dimethyl- | 29.60 | 210 | BJN |

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CGG73RE

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SM0002 SAS No.: 7453C01 SDG No.: CGG72

Matrix: (soil/water) SOIL Lab Sample ID: 908251-3RE

Sample wt/vol: 30.40 (g/mL) G Lab File ID: B9008

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: 7 decanted: (Y/N) N Date Extracted: 08/28/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 09/02/92

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.9

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 350 | U |
| 111-44-4 | bis(2-Chloroethyl)Ether | 350 | U |
| 95-57-8 | 2-Chlorophenol | 350 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 350 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 350 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 350 | U |
| 95-48-7 | 2-Methylphenol | 350 | U |
| 108-60-1 | 2,2'-oxybis(1-Chloropropane) | 350 | U |
| 106-44-5 | 4-Methylphenol | 350 | U |
| 621-64-7 | N-Nitroso-Di-n-Propylamine | 350 | U |
| 67-72-1 | Hexachloroethane | 350 | U |
| 98-95-3 | Nitrobenzene | 350 | U |
| 78-59-1 | Isophorone | 350 | U |
| 88-75-5 | 2-Nitrophenol | 350 | U |
| 105-67-9 | 2,4-Dimethylphenol | 350 | U |
| 111-91-1 | bis(2-Chloroethoxy)Methane | 350 | U |
| 120-83-2 | 2,4-Dichlorophenol | 350 | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 350 | U |
| 91-20-3 | Naphthalene | 350 | U |
| 106-47-8 | 4-Chloroaniline | 350 | U |
| 87-68-3 | Hexachlorobutadiene | 350 | U |
| 59-50-7 | 4-Chloro-3-Methylphenol | 350 | U |
| 91-57-6 | 2-Methylnaphthalene | 350 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 350 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 350 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 850 | U |
| 91-58-7 | 2-Chloronaphthalene | 350 | U |
| 88-74-4 | 2-Nitroaniline | 850 | U |
| 131-11-3 | Dimethylphthalate | 350 | U |
| 208-96-8 | Acenaphthylene | 350 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 350 | U |
| 99-09-2 | 3-Nitroaniline | 850 | U |
| 83-32-9 | Acenaphthene | 350 | U |

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CGG73RE

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SM0002 SAS No.: 7453C01 SDG No.: CGG72

Matrix: (soil/water) SOIL Lab Sample ID: 908251-3RE

Sample wt/vol: 30.40 (g/mL) G Lab File ID: B9008

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: 7 decanted: (Y/N) N Date Extracted: 08/28/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 09/02/92

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.9

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 51-28-5 | 2,4-Dinitrophenol | 850 | U |
| 100-02-7 | 4-Nitrophenol | 850 | U |
| 132-64-9 | Dibenzofuran | 350 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 350 | U |
| 84-66-2 | Diethylphthalate | 350 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 350 | U |
| 86-73-7 | Fluorene | 350 | U |
| 100-01-6 | 4-Nitroaniline | 850 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 850 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 350 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 350 | U |
| 118-74-1 | Hexachlorobenzene | 350 | U |
| 87-86-5 | Pentachlorophenol | 850 | U |
| 85-01-8 | Phenanthrene | 19 | J |
| 120-12-7 | Anthracene | 350 | U |
| 86-74-8 | Carbazole | 350 | U |
| 84-74-2 | Di-n-Butylphthalate | 1600 | BE |
| 206-44-0 | Fluoranthene | 350 | U |
| 129-00-0 | Pyrene | 350 | U |
| 85-68-7 | Butylbenzylphthalate | 30 | J |
| 91-94-1 | 3,3'-Dichlorobenzidine | 350 | U |
| 56-55-3 | Benzo(a)Anthracene | 350 | U |
| 218-01-9 | Chrysene | 350 | U |
| 117-81-7 | bis(2-Ethylhexyl)Phthalate | 920 | B |
| 117-84-0 | Di-n-Octyl Phthalate | 350 | U |
| 205-99-2 | Benzo(b)Fluoranthene | 350 | U |
| 207-08-9 | Benzo(k)Fluoranthene | 350 | U |
| 50-32-8 | Benzo(a)Pyrene | 350 | U |
| 193-39-5 | Indeno(1,2,3-cd)Pyrene | 350 | U |
| 53-70-3 | Dibenz(a,h)Anthracene | 350 | U |
| 191-24-2 | Benzo(g,h,i)Perylene | 350 | U |

(1) - Cannot be separated from Diphenylamine

EPA SAMPLE NO.

CGG73RE

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SM0002 SAS No.: 7453C01 SDG No.: CGG72

Matrix: (soil/water) SOIL Lab Sample ID: 908251-3RE

Sample wt/vol: 30.40 (g/mL) G Lab File ID: B9008

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: 7 decanted: (Y/N) N Date Extracted: 08/28/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 09/02/92

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.9

Number TICs found: 7

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. 547648 | Propanoic acid, 2-hydroxy-, | 4.20 | 1400 | JN |
| 2. 79345 | Ethane, 1,1,2,2-tetrachloro- | 7.25 | 120 | JN |
| 3. | UNKNOWN | 12.21 | 180 | J |
| 4. 55045119 | Tridecane, 5-propyl- | 19.18 | 110 | JN |
| 5. 54833486 | Heptadecane, 2,6,10,15-tetra | 25.38 | 71 | JN |
| 6. 74764117 | Iron, tricarbonyl[N-(phenyl- | 27.11 | 110 | JN |
| 7. 111024 | 2,6,10,14,18,22-Tetracosahex | 29.97 | 210 | BJN |

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CGG79

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SM0002 SAS No.: 7453C01 SDG No.: CGG72

Matrix: (soil/water) SOIL Lab Sample ID: 9208303-1

Sample wt/vol: 32.80 (g/mL) G Lab File ID: B9013

Level: (low/med) LOW Date Received: 08/27/92

% Moisture: 15 decanted: (Y/N) N Date Extracted: 08/27/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 09/02/92

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.4

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 360 | U |
| 111-44-4 | bis(2-Chloroethyl)Ether | 360 | U |
| 95-57-8 | 2-Chlorophenol | 360 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 360 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 360 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 360 | U |
| 95-48-7 | 2-Methylphenol | 360 | U |
| 108-60-1 | 2,2'-oxybis(1-Chloropropane) | 360 | U |
| 106-44-5 | 4-Methylphenol | 360 | U |
| 621-64-7 | N-Nitroso-Di-n-Propylamine | 360 | U |
| 67-72-1 | Hexachloroethane | 360 | U |
| 98-95-3 | Nitrobenzene | 360 | U |
| 78-59-1 | Isophorone | 360 | U |
| 88-75-5 | 2-Nitrophenol | 360 | U |
| 105-67-9 | 2,4-Dimethylphenol | 360 | U |
| 111-91-1 | bis(2-Chloroethoxy)Methane | 360 | U |
| 120-83-2 | 2,4-Dichlorophenol | 360 | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 360 | U |
| 91-20-3 | Naphthalene | 360 | U |
| 106-47-8 | 4-Chloroaniline | 360 | U |
| 87-68-3 | Hexachlorobutadiene | 360 | U |
| 59-50-7 | 4-Chloro-3-Methylphenol | 360 | U |
| 91-57-6 | 2-Methylnaphthalene | 360 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 360 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 360 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 860 | U |
| 91-58-7 | 2-Chloronaphthalene | 360 | U |
| 88-74-4 | 2-Nitroaniline | 860 | U |
| 131-11-3 | Dimethylphthalate | 360 | U |
| 208-96-8 | Acenaphthylene | 100 | J |
| 606-20-2 | 2,6-Dinitrotoluene | 360 | U |
| 99-09-2 | 3-Nitroaniline | 860 | U |
| 83-32-9 | Acenaphthene | 360 | U |

000037

EPA SAMPLE NO.

CGG79

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SMO002 SAS No.: 7453C01 SDG No.: CGG72

Matrix: (soil/water) SOIL Lab Sample ID: 9208303-1

Sample wt/vol: 32.80 (g/mL) G Lab File ID: B9013

Level: (low/med) LOW Date Received: 08/27/92

% Moisture: 15 decanted: (Y/N) N Date Extracted: 08/27/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 09/02/92

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.4

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 51-28-5 | 2,4-Dinitrophenol | 860 | U |
| 100-02-7 | 4-Nitrophenol | 860 | U |
| 132-64-9 | Dibenzofuran | 360 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 360 | U |
| 84-66-2 | Diethylphthalate | 360 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 360 | U |
| 86-73-7 | Fluorene | 360 | U |
| 100-01-6 | 4-Nitroaniline | 860 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 860 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 360 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 360 | U |
| 118-74-1 | Hexachlorobenzene | 360 | U |
| 87-86-5 | Pentachlorophenol | 860 | U |
| 85-01-8 | Phenanthrene | 190 | J |
| 120-12-7 | Anthracene | 84 | J |
| 86-74-8 | Carbazole | 43 | J |
| 84-74-2 | Di-n-Butylphthalate | 110 | J |
| 206-44-0 | Fluoranthene | 720 | |
| 129-00-0 | Pyrene | 790 | |
| 85-68-7 | Butylbenzylphthalate | 360 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 360 | U |
| 56-55-3 | Benzo(a)Anthracene | 480 | |
| 218-01-9 | Chrysene | 360 | U |
| 117-81-7 | bis(2-Ethylhexyl)Phthalate | 1300 | B |
| 117-84-0 | Di-n-Octyl Phthalate | 39 | J |
| 205-99-2 | Benzo(b)Fluoranthene | 600 | |
| 207-08-9 | Benzo(k)Fluoranthene | 280 | J |
| 50-32-8 | Benzo(a)Pyrene | 410 | |
| 193-39-5 | Indeno(1,2,3-cd)Pyrene | 180 | J |
| 53-70-3 | Dibenz(a,h)Anthracene | 360 | U |
| 191-24-2 | Benzo(g,h,i)Perylene | 160 | J |

(1) - Cannot be separated from Diphenylamine

EPA SAMPLE NO.

CGG79

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SMO002 SAS No.: 7453C01 SDG No.: CGG72

Matrix: (soil/water) SOIL Lab Sample ID: 9208303-1

Sample wt/vol: 32.80 (g/mL) G Lab File ID: B9013

Level: (low/med) LOW Date Received: 08/27/92

% Moisture: 15 decanted: (Y/N) N Date Extracted: 08/27/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 09/02/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.4

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. 547648 | Propanoic acid, 2-hydroxy-, | 4.13 | 160 | JN |

ref.13 000058

2D
SOIL SEMIVOLATILE SURROGATE RECOVERY

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS ~~Case No.: SMO002 SAS No.: 7453C01 SDG No.:~~ CGG72

Level: (low/med) LOW CORRECTED/RESUBMITTED % R's

| | EPA SAMPLE NO. | S1 (NBZ) # | S2 (FBP) # | S3 (TPH) # | S4 (PHL) # | S5 (2FP) # | S6 (TBP) # | S7 (2CP) # | S8 (DCB) # | TOT OUT |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 100ppm | 100ppm | 100ppm | 150ppm | 150ppm | 150ppm | 150ppm | 100ppm | |
| 01 | CGG72 | 53 | 62 | 68 | 43 | 43 | 52 | 47 | 60 * | 0 |
| 02 | CGG73 | 68 | 68 | 68 | 59 | 53 | 65 | 57 * | 70 * | 0 |
| 03 | CGG73RE | 49 | 45 | 40 | 27 | 30 | 38 | 33 * | 50 * | 0 |
| 04 | CGG79 | 37 | 57 | 122 | 38 | 39 | 99 | 23 * | 28 * | 0 |
| 05 | CGG80 | 49 | 65 | 40 | 39 | 37 | 31 | 43 * | 61 * | 0 |
| 06 | CGG81 | 71 | 70 | 74 | 71 | 60 | 71 | 66 * | 69 * | 0 |
| 07 | CGG81RE | 31 | 45 | 68 | 27 | 23 * | 54 | 29 * | 36 * | 1 |
| 08 | CGG81MS | 62 | 69 | 69 | 53 | 52 | 66 | 52 * | 64 * | 0 |
| 09 | CGG81MSD | 66 | 66 | 66 | 54 | 53 | 71 | 52 * | 65 * | 0 |
| 10 | CGG81MSDRE | 29 | 37 | 46 | 15 * | 20 * | 25 | 24 * | 29 * | 2 |
| 11 | CGG81MSRE | 43 | 51 | 64 | 40 | 38 | 51 | 42 * | 57 * | 0 |
| | SBLK27 | 67 | 63 | 61 | 60 | 51 | 58 | 54 * | 66 * | 0 |
| 13 | SBLK01 | 74 | 48 | 74 | 51 | 56 | 67 | 15 * | 21 * | 1 |
| 14 | SBLK02 | 55 | 40 | 60 | 42 | 47 | 36 | 12 * | 17 * | 2 |
| 15 | SBLK03 | 80 | 68 | 47 | 49 | 47 | 57 | 50 * | 68 * | 0 |

| | | QC LIMITS | |
|---|---|---|---|
| S1 (NBZ) | = Nitrobenzene-d5 | ( 23-120) | |
| S2 (FBP) | = 2-Fluorobiphenyl | ( 30-115) | |
| S3 (TPH) | = Terphenyl-d14 | ( 18-137) | |
| S4 (PHL) | = Phenol-d5 | ( 24-113) | |
| S5 (2FP) | = 2-Fluorophenol | ( 25-121) | |
| S6 (TBP) | = 2,4,6-Tribromophenol | ( 19-122) | |
| S7 (2CP) | = 2-Chlorophenol-d4 | ( 20-130) | (advisory) |
| S8 (DCB) | = 1,2-Dichlorobenzene-d4 | ( 20-130) | (advisory) |

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

S7 + S8 calculated from quant lists

No qualifiers on QC samples, no qualifiers on CGG81Re since only 1 surrogate out.



FORM II SV-2 3/90

PAL

ref.13

NOV 1992 RECEIVED

November 23, 1992

R. Richard Thacker
Viar & Co.
300 North Lee Street
Alexandria, VA 22314

Dear Mr. Thacker,

Per the request of one of your employees (b)(4) [redacted]; we have corrected the mistakes in SAS bid #7453-C-01. Most of the errors were clerical in nature and are described below:

1. The Form I's had the incorrect date of receipt
2. The Form I's (VOA and SVOA) were not updated for the CRQL for OLM01.8
3. The enhanced ion chromatogram for SBLK27 was not previously submitted
4. On page 542 the date and time is missing from the DFTPP chromatogram
5. The RRF is missing for 3,3'Dichlorobenzidine

All of these points have been addressed. Points 4 and 5 are are not resubmitted and explained in the SVOA narrative.

In addition, there was an error of 2X for the SVOA results. The samples per the contract went through GPC cleanup. However, the software overcompensated for the factor of two. The results have been corrected and resubmitted.

I believe that this addresses the concerns expressed to me (b)(4) [redacted] If there are any other questions concerning this data package please do not hesitate to contact me.

Sincerely,

H. Mitchell Rubenstein

H. Mitchell Rubenstein, Ph.D.
Laboratory Director

mistake not caught Before 2 samples + QC were re-extracted & reanalyzed.

PRECISION ANALYTICAL LABORATORY INC
205 West Galena
Milwaukee, Wisconsin 53212
Phone (414) 272-5222 • (414) 272-5237

ref. 13

D00313

2D

# SOIL SEMIVOLATILE SURROGATE RECOVERY

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SM0002 SAS No.: 7453C01 SDG No.: CGG72

Level: (low/med) LOW

ALL SURROGATES EXCEPT SBLK01/02 ARE 2X - TOO HIGH

| | EPA SAMPLE NO. | S1 (NBZ)# | S2 (FBP)# | S3 (TPH)# | S4 (PHL)# | S5 (2FP)# | S6 (TBP)# | S7 (2CP)# | S8 (DCB)# | TOT OUT |
|---|---|---|---|---|---|---|---|---|---|---|
| 01 | CGG72 | 106 | 125 * | 135 | 86 | 87 | 105 | 0 * | 0 * | 3 |
| 02 | CGG73 | 137 * | 137 * | 137 | 118 * | 105 | 130 * | 0 * | 0 * | 6 |
| 03 | CGG73RE | 99 | 90 | 80 | 55 | 59 | 76 | 0 * | 0 * | 2 |
| 04 | CGG79 | 37 | 57 | 122 | 38 | 39 | 99 | 0 * | 0 * | 2 |
| 05 | CGG80 | 98 | 129 * | 81 | 79 | 73 | 61 | 0 * | 0 * | 3 |
| 06 | CGG81 | 143 * | 141 * | 149 * | 141 * | 119 | 143 * | 0 * | 0 * | 7 |
| 07 | CGG81RE | 63 | 90 | 136 | 54 | 47 | 109 | 0 * | 0 * | 2 |
| 08 | CGG81MS | 124 * | 137 * | 137 | 107 | 104 | 131 * | 0 * | 0 * | 5 |
| 09 | CGG81MSD | 132 * | 132 * | 131 | 108 | 107 | 141 * | 0 * | 0 * | 5 |
| 10 | CGG81MSDRE | 58 | 74 | 92 | 29 | 40 | 51 | 0 * | 0 * | 2 |
| 11 | CGG81MSRE | 86 | 103 | 128 | 80 | 76 | 103 | 0 * | 0 * | 2 |
| 12 | SBLK27 | 135 * | 125 * | 121 | 119 * | 102 | 116 | 0 * | 0 * | 5 |
| 13 | SBLK01 | 74 | 48 | 74 | 51 | 56 | 67 | 0 D | 0 D | 0 |
| 14 | SBLK02 | 55 | 40 | 60 | 42 | 47 | 36 | 0 D | 0 D | 0 |
| 15 | SBLK03 | 160 * | 137 * | 94 | 97 | 94 | 115 | 0 * | 0 * | 4 |

CALC. WRONG %R

| | | QC LIMITS | |
|---|---|---|---|
| S1 (NBZ) | = Nitrobenzene-d5 | ( 23-120) | |
| S2 (FBP) | = 2-Fluorobiphenyl | ( 30-115) | |
| S3 (TPH) | = Terphenyl-d14 | ( 18-137) | |
| S4 (PHL) | = Phenol-d5 | ( 24-113) | |
| S5 (2FP) | = 2-Fluorophenol | ( 25-121) | |
| S6 (TBP) | = 2,4,6-Tribromophenol | ( 19-122) | |
| S7 (2CP) | = 2-Chlorophenol-d4 | ( 20-130) | (advisory) |
| S8 (DCB) | = 1,2-Dichlorobenzene-d4 | ( 20-130) | (advisory) |

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

This was Initially Submitted Form.

Lab calculated 2X too high for all BNA surrogates, which caused them to re-extract CGG73 and CGG81 plus QC. (See note about software error & revised surr. Form)

5.) EPA Sample No. "SBLK27" had surrogates out of control. The entire sample extraction group was reextracted and analyzed. This extraction lot was taken to a final extract volume of 1ml rather than 0.5ml after GPC cleanup. The second and third extraction lots were taken to 0.5ml final volume as per the SOW.

6.) The data package submitted was collated in accordance with the CLP SOW OLM01.8, pages B-7 to B-17.

"I certify that this data package is in compliance with the terms and conditio of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his designee, as verified by the following signature."

Signature: H Mitchell Rubenstein 11-23-92 Name: H. Mitchell Rubenstein, Ph.D.

Date: October 5, 1992 Title: Laboratory Director

7.) The following pages have been resubmitted to bring the semivolatile data package into conformance with OLM01.8: pp. 27-47; 58; 76-78; 80-82; 84-86; 88-90; 313; 328-330; 343-345; 362-364; 382-384; 406-408; 427-429; 463-465; 543-545; 547A; 547B; 557-559;570-572; and 582-584.

8.) The Form I's were corrected for: incorrect DATE RECEIVED; CRQL's; and a factor of two that was incorrectly programmed into the software to account for GPC cleanup.

9.)The TIC for SBLK27 (Di-n-Butyl Phthalate has been introduced into the packet as page 547B. The previous page 547 is now 547A.

10.) Page 496 (FORM 6C) cannot be corrected electronically to insert the RRF20 value for 3,3'-Dichlorobenzidine. The Value can be observed in the raw data. As a consequence the Average RRF is not corrected. The quality of the data is not affected and the Finnigan Institute has been notified to address this problem for future deliverables.

11.) Page 542 is not date stamped for DFTPP. The date can be observed on Form 5B (page 322). This is the presentation provided by Hewlett Packard and cannot be altered.

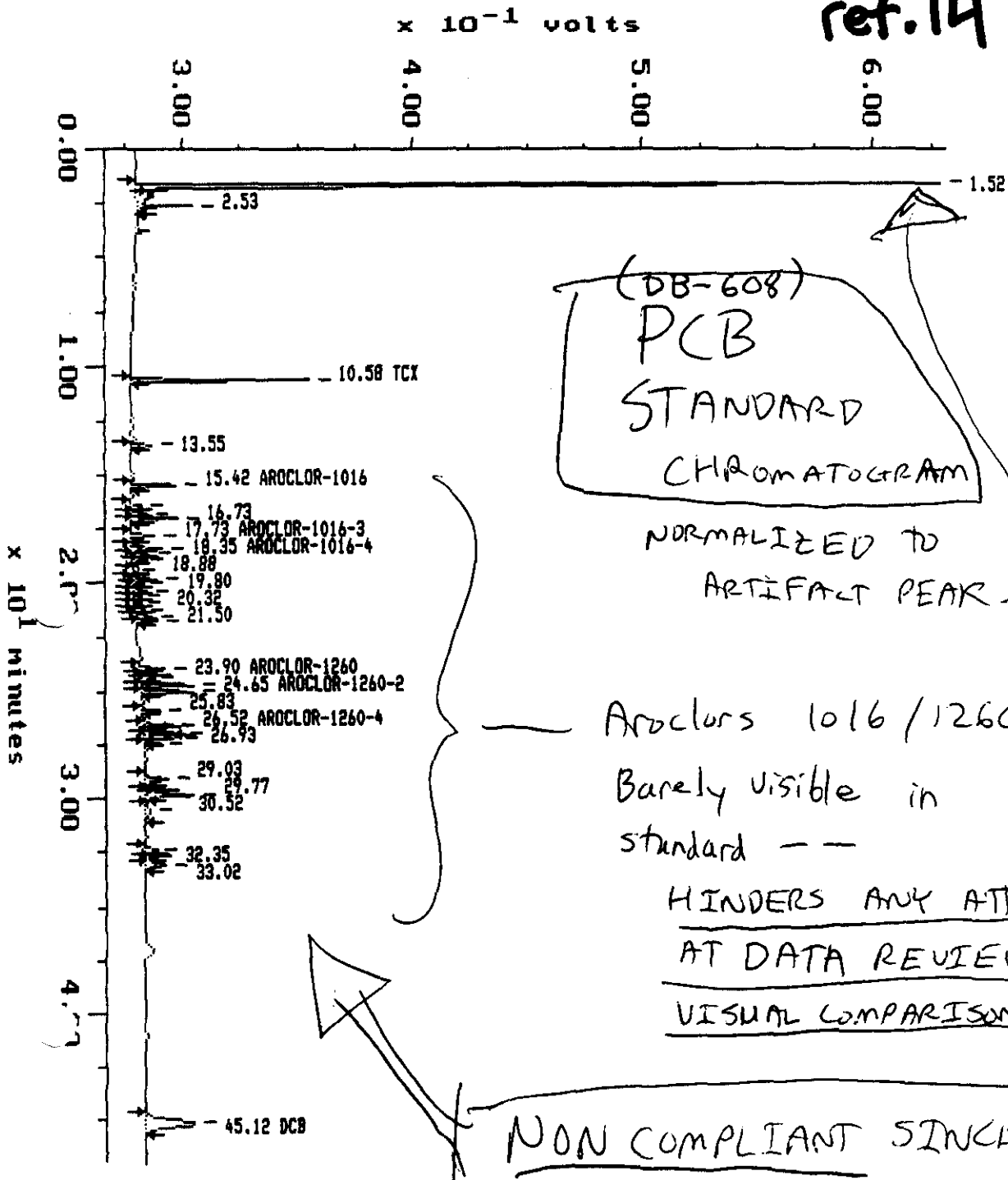
END 11-23-92

HMR 11-23-92

Sample: AR166006 Channel: DB-608 Filename: 209EC231
Acquired: 21-SEP-92 16:18 Method: D:\MAX\PEST\SEP92\092192 Operator: JJB
Inj Vol: 1.00

000904

ref. 14




(DB-608)
PCB
STANDARD
CHROMATOGRAM

NORMALIZED TO
ARTIFACT PEAK

Aroclors 1016 / 1260
Barely visible in
standard --

HINDERS ANY ATTEMPT
AT DATA REVIEW
VISUAL COMPARISON

NON COMPLIANT SINCE
Peaks used for QUANT.
ARE < 25 % FULL SCALE
(SOW 3/90, Ex. D, 11.3)

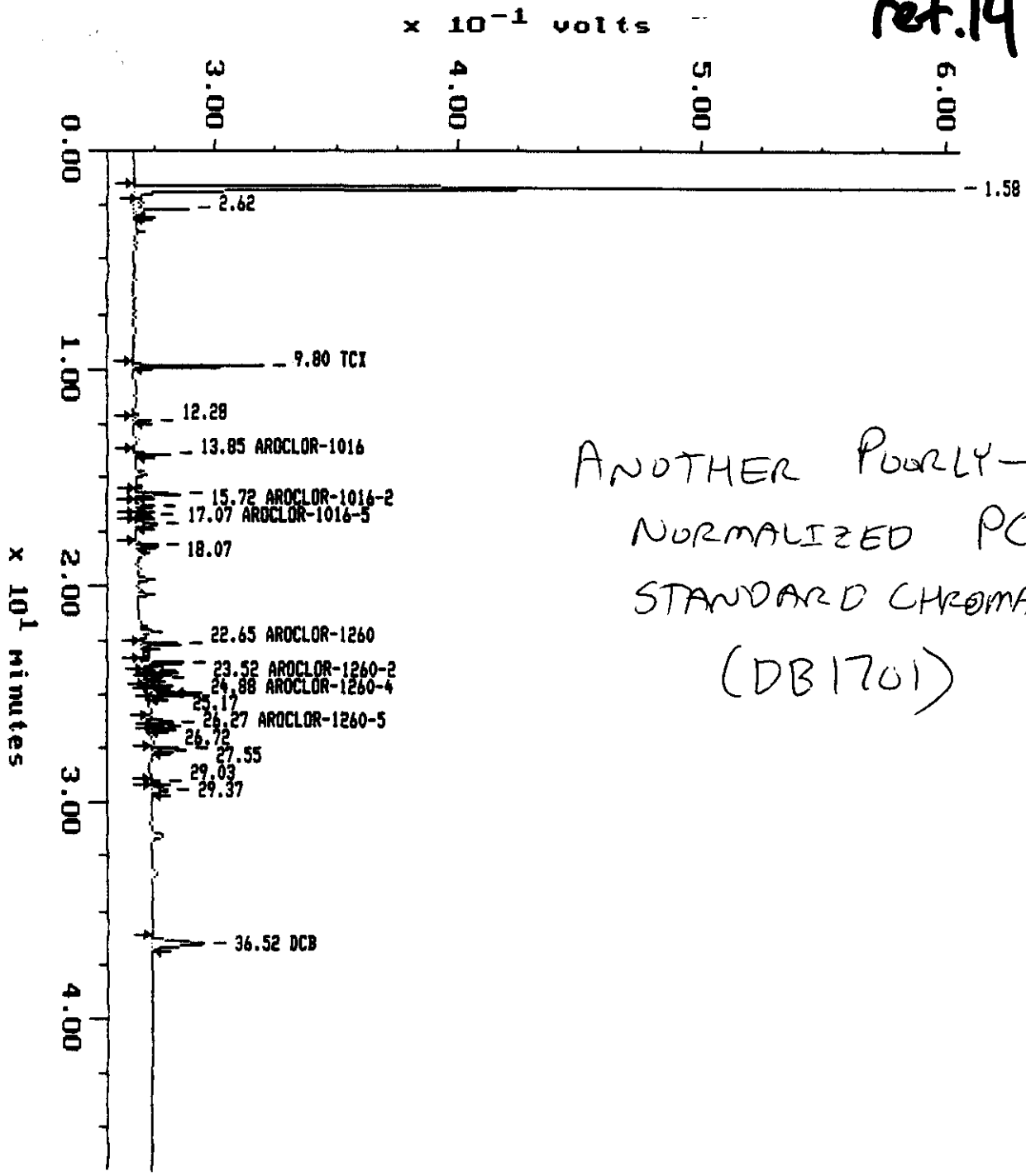
Sample: AR166006
Acquired: 21-SEP-92 16:18
Inj Vol: 1.00

Channel: DB-1701
Method: D:\MAX\PEST\SEP92\092192

Filename: 209EC231
Operator: JJB

000905

ref.14

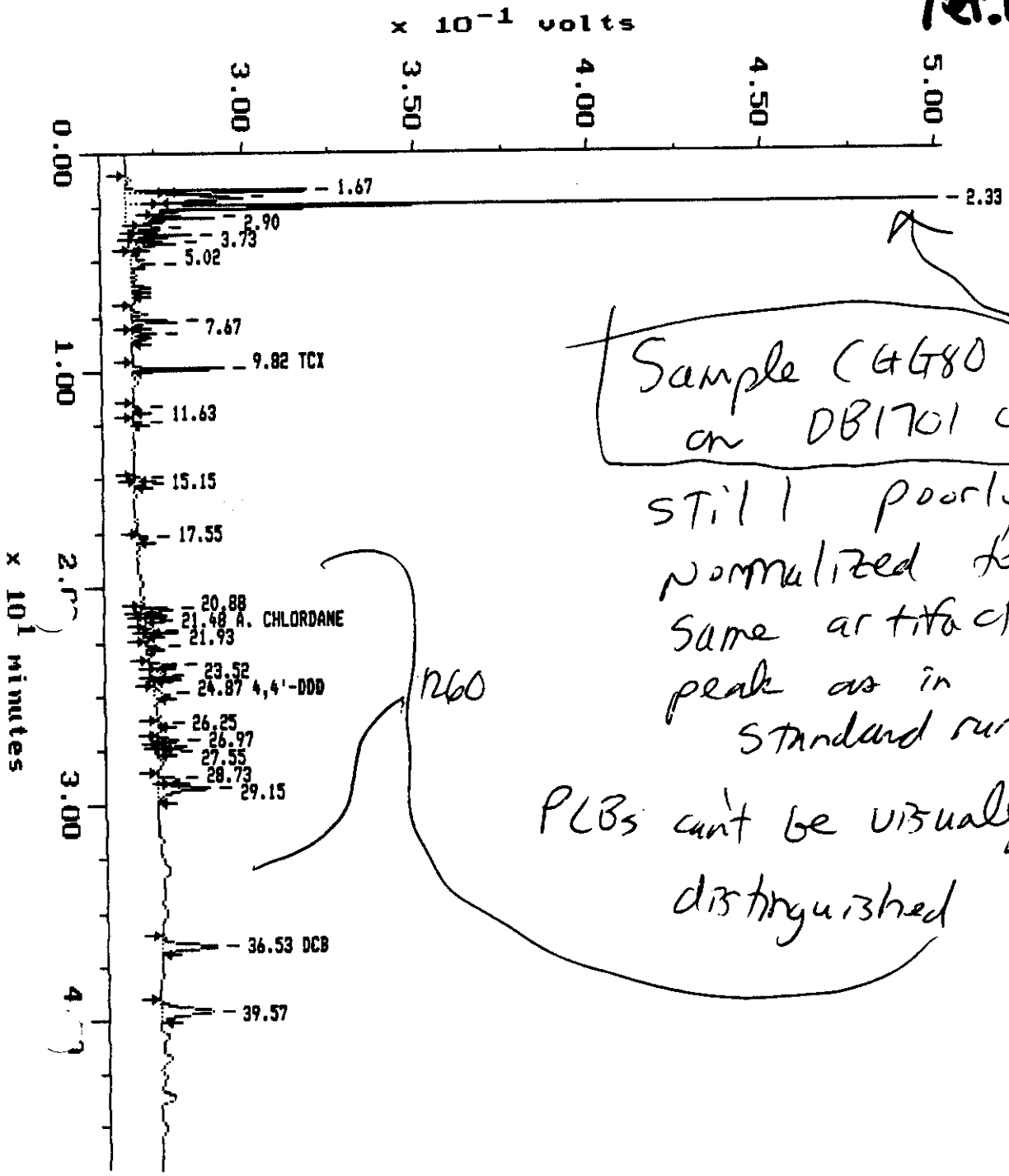



ANOTHER POORLY-NORMALIZED PCB STANDARD CHROMATOGRAM (DB1701)

Sample: 8303-03 Channel: DB-1701
Acquired: 24-SEP-92 16:59 Method: D:\MAX\PEST\SEP92\092192E
Inj Vol: 1.00

Filename: 209EC283
Operator: JJB

ref.14 000741




Sample C4G80 on DB1701 col.

still poorly normalized to same artifact peak as in standard runs

1260

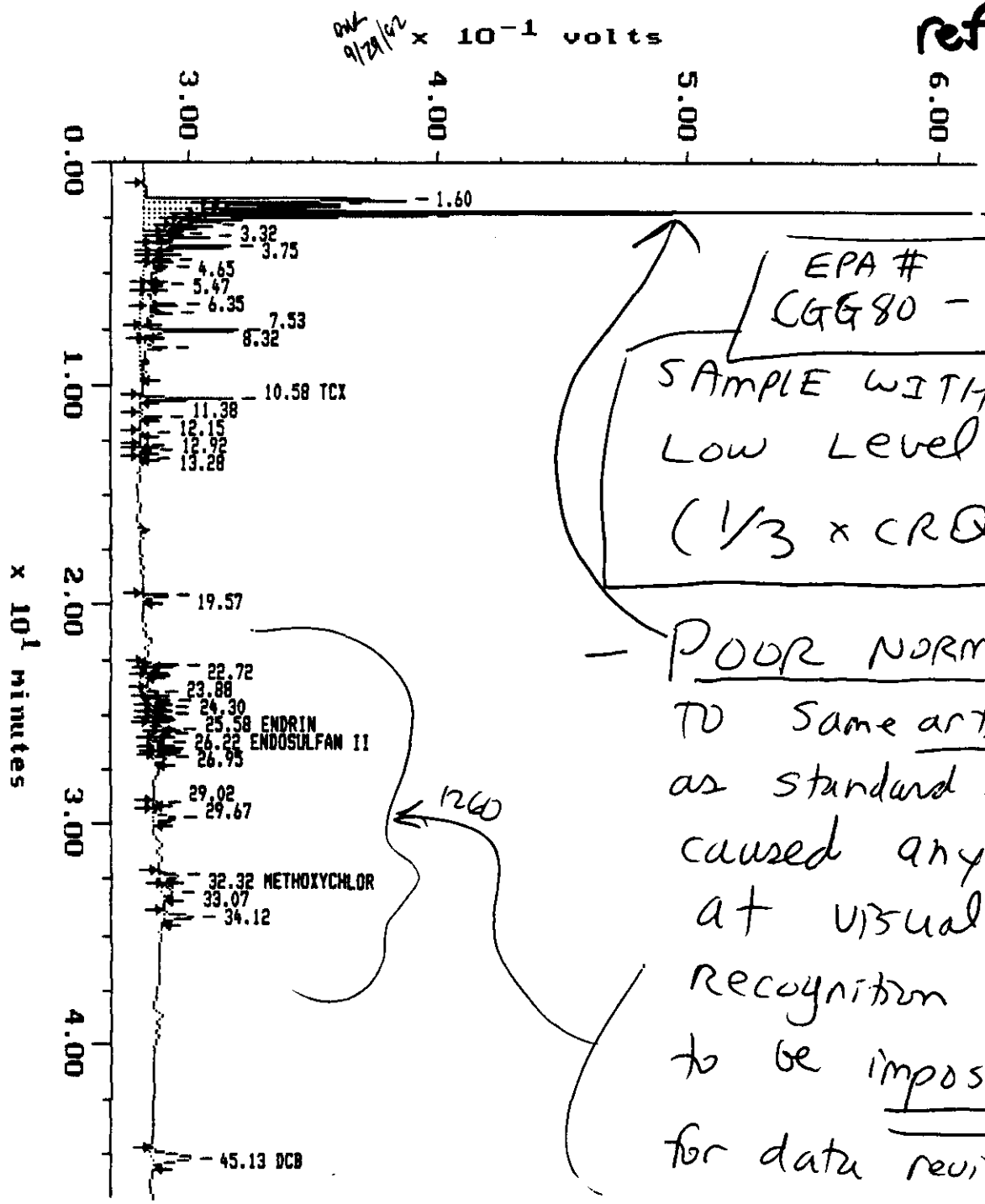
PCBs can't be visually distinguished

Sample: 8303-02 02
Acquired: 24-SEP-92 16:59
Inj Vol: 1.00

Channel: DB-608
Method: D:\MAX\PEST\SEP92\092192E

Filename: 209EC203
Operator: JJB

ref.14 000740




EPA # CGG80 - LabID 830302

SAMPLE WITH LOW LEVEL PCBs (1/3 x CRQL)

- POOR NORMALIZATION TO Same artifact peak as standard run -- caused any attempt at visual pattern recognition of 1260 to be impossible for data reviewer!

(DB 608 Column)

Ref. 14

# EVALUATION OF CONFIRMATIONS OF GC ANALYSES

| SAMPLE NO | COMPOUND | GC COLUMN # 1 (~~Primary~~ Quant. col.) | | | | | | GC COLUMN # 2 | | | | | | COMMENTS: | TYPE OF CONFIRMATION (2 COL / GC/MS) | REVIEWER CONFIDENT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | COLUMN: DB608<br>CONDITIONS:<br>DETECTOR: ECD<br>OTHER:<br>DATA FROM COLUMN # 1:<br>☒ RET. OR ☐ REL. RET. TIMES IN: min | | | RELATIVE PEAK AREA RATIOS | | | COLUMN: DB1701<br>CONDITIONS:<br>DETECTOR: ECD<br>OTHER:<br>DATA FROM COLUMN # 2:<br>☒ RET. OR ☐ REL. RET. TIMES IN: min | | | RELATIVE PEAK AREA RATIOS | | | | | |
| | | Sample | Standard | Difference | Sample | Standard | RATIO | Sample | Standard | Difference | Sample | Standard | RATIO | | | |
| CGG80 (8303-02) | TCX | 10.583 | 10.583 | 0.000 | | | | 9.917 | 9.900 | +.017 | | | | SURR | | |
| | Aroclor 1260 | ND | 21.50 | ND | ND | 53 | | | | | | | | SAMPLE CGG80 MATCH QUALITY BE TABULATED TO | | |
| | | ND | 21.717 | ND | ND | 64 | | | | | | | | | | |
| | | 23.883 | 23.900 | -0.017 | 29 | 92 | 0.32 | | | | | | | | | |
| | | ND | 24.183 | ND | ND | 36 | | | | | | | | | | |
| | | 24.300 | 24.367 | -.067 | 90 | 42 | 2.14 | 22.667 | 22.650 | +.017 | 27 | 108 | 0.25 | | | |
| | | 24.650 | 24.650 | 0.00 | 51 | 167 | 0.31 | 23.517 | 23.517 | 0.000 | 77 | 113 | 0.68 | | | |
| | | 24.950 | 24.967 | -.017 | 44 | 171 | 0.26 | 24.033 | 24.033 | 0.000 | 56 | 33 | 1.70 | | | |
| | | 25.850 | 25.833 | +.017 | 64 | 56 | 1.14 | 24.200 | 24.200 | 0.000 | 13 | 47 | 0.28 | | | |
| | | 26.483 | 26.517 | -0.034 | 33 | 100 | 0.33 | 24.867 | 24.883 | -0.017 | 53 | 113 | 0.47 | | | |
| | | 26.683 | 26.650 | +.033 | 16 | 56 | 0.29 | ND | 24.983 | ND | ND | 75 | | | | |
| | | 26.950 | 26.933 | +.017 | 64 | 137 | 0.47 | ND | 25.167 | ND | ND | 38 | | | | |
| | | ND | 27.067 | ND | ND | 102 | | 26.250 | 26.267 | -.017 | 12 | 71 | 0.17 | | | |
| | | 29.017 | 29.033 | -0.017 | 16 | 141 | 0.11 | ND | 26.517 | ND | ND | 30 | | | | |
| | | 29.667 | 29.767 | -0.10 | 136 | 249 | 0.54 | 27.550 | 27.550 | 0.00 | 33 | 131 | 0.25 | | | |
| | DCB | 45.133 | 45.117 | 0.016 | | | | 36.533 | 36.517 | +.017 | | | | SURR | | |
| | | ND | 29.567 | ND | ND | 66 | | | | | | | | PCB HAD TO VERIFY | | |

Ref. 14

COMMENTS: DB608 - The absolute largest peaks match, but all others poor.
DB1701
CANT verify interferences present to account for missing peaks or poor integration for any bad area ratios, ALL BECAUSE SAMPLE AND STANDARD CHROMATOGRAMS NORMALIZED < 10% FULL SCALE PCB PKS.

9B
PESTICIDE GPC CALIBRATION

ref.15

001036

Lab Name: PRECISION A L  Contract: _____

Lab Code: PRECIS  Case No.: SM0002  SAS No.: 7453C01  SDG No.: CGG72

GPC Column: M2183001  Calibration Date: _____

GC Column(1): _____ ID: ____(mm)  GC Column(2): _____ ID: ____(mm)

| COMPOUND | SPIKE ADDED (ng) | SPIKE RECOVERED (ng) | % REC # | QC LIMITS |
|---|---|---|---|---|
| gamma-BHC (Lindane) | 0.100 | ERR-No CF | 999.9* | 80-110 |
| Heptachlor | 0.100 | ERR-No CF | 999.9* | 80-110 |
| Aldrin | 0.100 | ERR-No CF | 999.9* | 80-110 |
| Dieldrin | 0.100 | ERR-No CF | 999.9* | 80-110 |
| Endrin | 0.100 | ERR-No CF | 999.9* | 80-110 |
| 4,4'-DDT | 0.100 | ERR-No CF | 999.9* | 80-110 |

# Column to be used to flag recovery with an asterisk.
* Values outside of QC limits

THIS GPC CALIBRATION APPLIES TO THE FOLLOWING SAMPLES, BLANKS, MS, AND MSD:

| | EPA SAMPLE NO. | LAB SAMPLE ID | DATE ANALYZED 1 | DATE ANALYZED 2 |
|---|---|---|---|---|
| 01 | CGG72 | 8251-2 | 09/03/92 | 09/03/92 |
| 02 | CGG72RE | 8251-2RE | 09/19/92 | 09/19/92 |
| 03 | CGG73 | 8251-3 | 09/03/92 | 09/03/92 |
| 04 | CGG73RE | 8251-3RE | 09/19/92 | 09/19/92 |
| 05 | CGG79 | 8303-1 | 09/03/92 | 09/03/92 |
| 06 | CGG79RE | 8303-1RE | 09/19/92 | 09/19/92 |
| 07 | CGG80 | 8303-2 | 09/24/92 | 09/24/92 |
| 08 | CGG81 | 8251-1 | 09/03/92 | 09/03/92 |
| 09 | CGG81RE | 8251-1RE | 09/19/92 | 09/19/92 |
| 10 | CGG73MSDRE | 8251-3MSDRE | 09/19/92 | 09/19/92 |
| 11 | CGG73MSRE | 8251-3MSRE | 09/19/92 | 09/19/92 |
| 12 | CGG81MS | 8251-1MS | 09/03/92 | 09/03/92 |
| 13 | CGG81MSD | 8251-1MSD | 09/03/92 | 09/03/92 |

Not performed by lab - see case narrative

# CASE NARRATIVE

Lab Name: PRECISION_A_L
Case No.: SMO002
SDG No.: CGG72

Contract:
SAS No: 7453-C-01
Sample Analysis Price:

## PESTICIDE/PCB ORGANIC ANALYSIS

| Sample No. | EPA Sample No. | Lab Sample ID |
|---|---|---|
| CGG72 | CGG72 | 9208251-2 |
| CGG72RE | CGG72RE | 9208251-2RE |
| CGG73 | CGG73 | 9208251-3 |
| CGG73RE | CGG73RE | 9208251-3RE |
| CGG79 | CGG79 | 9208303-1 |
| CGG79RE | CGG79RE | 9208303-1RE |
| CGG80 | CGG80 | 9208303-2 |
| CGG81 | CGG81 | 9208251-1 |
| CGG81RE | CGG81RE | 9208251-1RE |
| CGG81MS | CGG81MS | 9208251-1MS |
| CGG81MSD | CGG81MSD | 9208251-1MSD |
| CGG81MSDRE | CGG73MSDRE | 9208251-3MSDRE |
| CGG81MSRE | CGG73MSRE | 9208251-3MSRE |
| PBLK02 | PBLK02 | PBLK02 |
| PBLK03 | PBLK03 | PBLK03 |
| PBLK06 | PBLK06 | PBLK06 |
| PBLK07 | PBLK07 | PBLK07 |

Lab did not run Pesticide GPC calib.

1.) The instrument ID for Pesticide/PCB Organic Analysis is HP5890P, For the purpose of distinguishing the chromatograms HP5890A refers to the DB-608 column and HP5890B refers to the DB-1701 column.

2.) EPA Sample No.'s "CGG72,CGG73,CGG79,CGG81,CGGMS,CGGMSD" were re-extracted because of poor surrogate recoveries that were beyond the QC limits. All surrogate recoveries for the re-extraction were within QC limits.

3.) EPA Sample No. "CGG80" was extracted and ran out of the proper holding time due to laboratory error.

4.) On the DB-1701 column there were a few problems obtaining linearity with the BHC compounds and Aldrin. None of the samples had positive hits for these compounds. The relatively high %RSD's obtained on the DB-1701 column can be attributed to high %D's found in the PEM's. The carrier gas has been changed over to Helium in an effort to improve linearity.

5.) Normal GPC calibration was performed. Pesticide calibration of the GPC was not performed according to sec. 7.1.4 in the 3/90 SOW. The MS and MSD recoveries associated with these samples were within QC limits.

000054

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

ref. 16

EPA SAMPLE NO.

CGG80

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SM0002 SAS No.: 7453C0 SDG No.: CGG72

Matrix: (soil/water) SOIL Lab Sample ID: 8303-2

Sample wt/vol: 36.1 (g/mL) G Lab File ID: _____

% Moisture: 21 decanted: (Y/N) N Date Received: 08/~~19~~ 20/92 11/20/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 09/24/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 09/24/92

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 8.3 Sulfur Cleanup: (Y/N) N

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | 1.8 | U |
| 319-85-7 | beta-BHC | 1.8 | U |
| 319-86-8 | delta-BHC | 1.8 | U |
| 58-89-9 | gamma-BHC (Lindane) | 1.8 | U |
| 76-44-8 | Heptachlor | 1.8 | U |
| 309-00-2 | Aldrin | 1.8 | U |
| 1024-57-3 | Heptachlor epoxide | 1.8 | U |
| 959-98-8 | Endosulfan I | 1.8 | U |
| 60-57-1 | Dieldrin | 3.5 | U |
| 72-55-9 | 4,4'-DDE | 3.5 | U |
| 72-20-8 | Endrin | 3.5 | U |
| 33213-65-9 | Endosulfan II | 3.5 | U |
| 72-54-8 | 4,4'-DDD | 2.1 | JP |
| 1031-07-8 | Endosulfan sulfate | 3.5 | U |
| 50-29-3 | 4,4'-DDT | 3.5 | U |
| 72-43-5 | Methoxychlor | 18 | U |
| 53494-70-5 | Endrin ketone | 3.5 | U |
| 7421-36-3 | Endrin aldehyde | 3.5 | U |
| 5103-71-9 | alpha-Chlordane | 1.8 | U |
| 5103-74-2 | gamma-Chlordane | 1.8 | U |
| 8001-35-2 | Toxaphene | 180 | U |
| 12674-11-2 | Aroclor-1016 | 35 | U |
| 11104-28-2 | Aroclor-1221 | 70 | U |
| 11141-16-5 | Aroclor-1232 | 35 | U |
| 53469-21-9 | Aroclor-1242 | 35 | U |
| 12672-29-6 | Aroclor-1248 | 35 | U |
| 11097-69-1 | Aroclor-1254 | 35 | U |
| 11096-82-5 | Aroclor-1260 | 13 | JP |

ref.17 000495

6B

# SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: PRECISION A L  Contract: _____

Lab Code: PRECIS  Case No.: SM0002  SAS No.: 7453C01  SDG No.: CGG72

Instrument ID: HPBNA  Calibration Date(s): 05/08/92  05/08/92

Calibration Times: 1446  1810

Lab did not complete form for RRF20 for certain compounds; $\overline{RRF}$ and $\overline{RSD}$ wrong for these. All ok

LAB FILE ID: RRF20 = B5022  RRF50 = B5021
RRF80 = B5023  RRF120= B5024  RRF160= B5025

| COMPOUND | | RRF20 | RRF50 | RRF80 | RRF120 | RRF160 | $\overline{RRF}$ | % RSD |
|---|---|---|---|---|---|---|---|---|
| Phenol | * | 2.078 | 2.014 | 1.921 | 1.864 | 1.762 | 1.928 | 6.4* |
| bis(2-Chloroethyl)Ether | * | 1.833 | 1.760 | 1.692 | 1.635 | 1.530 | 1.690 | 6.9* |
| 2-Chlorophenol | * | 1.556 | 1.485 | 1.451 | 1.367 | 1.281 | 1.428 | 7.5* |
| 1,3-Dichlorobenzene | * | 1.774 | 1.683 | 1.682 | 1.492 | 1.399 | 1.606 | 9.6* |
| 1,4-Dichlorobenzene | * | 1.809 | 1.726 | 1.710 | 1.504 | 1.404 | 1.631 | 10.4* |
| 1,2-Dichlorobenzene | * | 1.625 | 1.525 | 1.513 | 1.300 | 1.166 | 1.426 | 13.1* |
| Methylphenol | * | 1.334 | 1.289 | 1.234 | 1.234 | 1.163 | 1.251 | 5.2* |
| 2,2'-oxybis(1-Chloropropane) | | 2.527 | 2.775 | 2.415 | 2.654 | 2.715 | 2.617 | 5.6 |
| 4-Methylphenol | * | 1.340 | 1.294 | 1.240 | 1.236 | 1.180 | 1.258 | 4.9* |
| N-Nitroso-Di-n-Propylamine | * | 1.197 | 1.110 | 1.027 | 1.152 | 1.144 | 1.126 | 5.6* |
| Hexachloroethane | * | 0.766 | 0.765 | 0.737 | 0.682 | 0.641 | 0.718 | 7.7* |
| Nitrobenzene | * | 0.536 | 0.519 | 0.526 | 0.505 | 0.511 | 0.519 | 2.4* |
| Isophorone | * | 1.024 | 0.982 | 1.016 | 0.996 | 1.040 | 1.012 | 2.3* |
| 2-Nitrophenol | * | 0.218 | 0.227 | 0.225 | 0.227 | 0.231 | 0.226 | 2.1* |
| 2,4-Dimethylphenol | * | 0.433 | 0.406 | 0.415 | 0.385 | 0.380 | 0.404 | 5.4* |
| bis(2-Chloroethoxy)Methane | * | 0.644 | 0.593 | 0.606 | 0.579 | 0.574 | 0.599 | 4.7* |
| 2,4-Dichlorophenol | * | 0.337 | 0.329 | 0.336 | 0.313 | 0.297 | 0.322 | 5.3* |
| 1,2,4-Trichlorobenzene | * | 0.424 | 0.392 | 0.398 | 0.357 | 0.338 | 0.382 | 9.0* |
| Naphthalene | * | 1.264 | 1.162 | 1.176 | 1.046 | 0.990 | 1.128 | 9.7* |
| 4-Chloroaniline | | 0.234 | 0.257 | 0.256 | 0.389 | 0.391 | 0.305 | 25.5 |
| Hexachlorobutadiene | | 0.245 | 0.229 | 0.230 | 0.205 | 0.198 | 0.221 | 8.8 |
| 4-Chloro-3-Methylphenol | * | 0.379 | 0.368 | 0.397 | 0.400 | 0.404 | 0.390 | 4.0* |
| Methylnaphthalene | * | 0.792 | 0.705 | 0.720 | 0.646 | 0.616 | 0.696 | 9.8* |
| Hexachlorocyclopentadiene | | 0.499 | 0.516 | 0.496 | 0.482 | 0.433 | 0.485 | 6.5 |
| 2,4,6-Trichlorophenol | * | 0.448 | 0.468 | 0.469 | 0.469 | 0.442 | 0.459 | 2.9* |
| 2,4,5-Trichlorophenol | * | 0.463 | 0.490 | 0.500 | 0.486 | 0.452 | 0.478 | 4.2* |
| 2-Chloronaphthalene | * | 1.385 | 1.327 | 1.326 | 1.190 | 1.100 | 1.266 | 9.2* |
| 2-Nitroaniline | | 0.414 | 0.497 | 0.538 | 0.609 | 0.609 | 0.533 | 15.4 |
| Dimethylphthalate | | 1.677 | 1.569 | 1.624 | 1.554 | 1.492 | 1.583 | 4.4 |
| Acenaphthylene | * | 0.277 | 0.254 | 0.247 | 0.217 | 0.213 | 0.242 | 11.0* |
| 2,6-Dinitrotoluene | * | 0.355 | 0.378 | 0.389 | 0.400 | 0.395 | 0.383 | 4.7* |
| 3-Nitroaniline | | 0.372 | 0.449 | 0.489 | 0.536 | 0.526 | 0.474 | 14.1 |
| Acenaphthene | * | 1.394 | 1.252 | 1.311 | 1.160 | 1.099 | 1.243 | 9.4* |
| 2,4-Dinitrophenol | ‡ | 0.097 | 0.137 | 0.165 | 0.242 | 0.263 | 0.1~~161~~ | ~~54.8~~ 39% |
| 4-Nitrophenol | ‡ | 0.105 | 0.102 | 0.140 | 0.178 | 0.184 | 0.1~~121~~ | ~~62.1~~ 27% |
| Dibenzofuran | * | 1.976 | 1.794 | 1.820 | 1.564 | 1.464 | 1.724 | 12.0* |
| 2,4-Dinitrotoluene | * | 0.467 | 0.475 | 0.501 | 0.475 | 0.460 | 0.476 | 3.3* |

* Compounds with required minimum RRF and maximum %RSD values.
All other compounds must meet a minimum RRF of 0.010.

‡ Lab did not input data - values calc. by reviewer

FORM VI SV-1  3/90

ref.17 000496

6C

# SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: PRECISION A L  Contract: _____

Lab Code: PRECIS  Case No.: SM0002  SAS No.: 7453C01  SDG No.: CGG72

Instrument ID: HPBNA  Calibration Date(s): 05/08/92  05/08/92

Calibration Times: 1446  1810

Carbazole High RSD – (J)

LAB FILE ID:  RRF20 = B5022  RRF50 = B5021
RRF80 = B5023  RRF120= B5024  RRF160= B5025

| COMPOUND | RRF20 | RRF50 | RRF80 | RRF120 | RRF160 | $\overline{RRF}$ | % RSD |
|---|---|---|---|---|---|---|---|
| Diethylphthalate | 1.738 | 1.562 | 1.678 | 1.565 | 1.525 | 1.614 | 5.6 |
| 4-Chlorophenyl-phenylether * | 0.772 | 0.721 | 0.726 | 0.598 | 0.549 | 0.673 | 14.1* |
| Fluorene * | 1.497 | 1.330 | 1.407 | 1.149 | 1.044 | 1.285 | 14.5* |
| 4-Nitroaniline | 0.175 | 0.162 | 0.173 | 0.213 | 0.232 | 0.191 | 15.7 |
| 4,6-Dinitro-2-methylphenol | 0.115 | 0.146 | 0.153 | 0.191 | 0.197 | 0.160 | 21.2 |
| N-Nitrosodiphenylamine (1) | 0.473 | 0.300 | 0.300 | 0.293 | 0.303 | 0.334 | 23.3 |
| 4-Bromophenyl-phenylether * | 0.290 | 0.286 | 0.275 | 0.256 | 0.251 | 0.272 | 6.4* |
| Hexachlorobenzene * | 0.380 | 0.371 | 0.360 | 0.332 | 0.335 | 0.356 | 0* |
| Pentachlorophenol * | 0.188 | 0.207 | 0.217 | 0.229 | 0.235 | 0.215 | 8.7* |
| Phenanthrene * | 1.286 | 1.225 | 1.238 | 1.060 | 1.014 | 1.165 | 10.3* |
| Anthracene * | 1.225 | 1.184 | 1.199 | 1.056 | 0.996 | 1.132 | 8.8* |
| Carbazole | 0.183 | 0.165 | 0.171 | 0.513 | 0.600 | 0.326 | 65.2 |
| Di-n-Butylphthalate | 1.680 | 1.605 | 1.734 | 1.516 | 1.401 | 1.587 | 8.3 |
| Fluoranthene * | 1.321 | 1.231 | 1.369 | 1.216 | 1.095 | 1.246 | 8.5* |
| Pyrene * | 1.542 | 1.596 | 1.521 | 1.476 | 1.399 | 1.507 | 4.9* |
| Butylbenzylphthalate | 0.738 | 0.782 | 0.797 | 0.820 | 0.783 | 0.784 | 3.8 |
| 3,3'-Dichlorobenzidine | 0.095 | 0.097 | 0.114 | 0.166 | 0.162 | 0.108 | 62.3 |
| Benzo(a)Anthracene * | 1.301 | 1.290 | 1.322 | 1.310 | 1.300 | 1.305 | 0.9* |
| Chrysene * | 1.300 | 1.262 | 1.250 | 1.023 | 0.933 | 1.154 | 14.2* |
| bis(2-Ethylhexyl)Phthalate | 1.093 | 1.078 | 1.082 | 0.855 | 0.765 | 0.975 | 15.8 |
| Di-n-Octyl Phthalate * | 1.650 | 1.714 | 1.760 | 1.611 | 1.512 | 1.649 | 5.8* |
| Benzo(b)Fluoranthene * | 1.207 | 1.261 | 1.300 | 1.288 | 1.205 | 1.252 | 3.6* |
| Benzo(k)Fluoranthene * | 1.166 | 1.083 | 1.153 | 1.080 | 1.060 | 1.108 | 4.3* |
| Benzo(a)Pyrene * | 1.127 | 1.141 | 1.214 | 1.141 | 1.088 | 1.142 | .0* |
| Indeno(1,2,3-cd)Pyrene * | 1.266 | 1.335 | 1.364 | 1.443 | 1.332 | 1.348 | 4.8* |
| Dibenz(a,h)Anthracene * | 1.025 | 1.076 | 1.099 | 1.144 | 1.049 | 1.079 | 4.3* |
| Benzo(g,h,i)Perylene * | 1.172 | 1.181 | 1.213 | 1.284 | 1.202 | 1.210 | 3.7* |
| Nitrobenzene-d5 * | 0.492 | 0.462 | 0.488 | 0.474 | 0.482 | 0.480 | 2.5* |
| 2-Fluorobiphenyl * | 1.522 | 1.436 | 1.412 | 1.259 | 1.139 | 1.354 | 11.3* |
| Terphenyl-d14 * | 1.092 | 1.132 | 1.091 | 1.089 | 1.046 | 1.090 | 2.8* |
| 2-Chlorophenol-d4 * | 1.477 | 1.396 | 1.387 | 1.302 | 1.206 | 1.354 | 7.6* |
| 1,2-Dichlorobenzene-d4 * | 0.995 | 0.911 | 0.891 | 0.734 | 0.671 | 0.840 | 15.9* |
| Phenol-d5 * | 1.901 | 1.812 | 1.758 | 1.756 | 1.676 | 1.781 | 4.7* |
| 2-Fluorophenol * | 1.616 | 1.546 | 1.502 | 1.393 | 1.306 | 1.473 | 8.4* |
| 2,4,6-Tribromophenol | 0.289 | 0.291 | 0.316 | 0.334 | 0.349 | 0.316 | 8.3 |

(1) Cannot be separated from Diphenylamine
* Compounds with required minimum RRF and maximum %RSD values.
All other compounds must meet a minimum RRF of 0.010.

‡ Lab forgot to input data – values calc. by reviewer for low std. 3/DC 03/90
RSD = 27.42

# APPENDIX A

DPO: [ ] ACTION [X] FYI Region III

## ORGANIC REGIONAL DATA ASSESSMENT SUMMARY

CASE NO. 18622 LABORATORY IOWA

SDG NO. CGG70 DATA USER Larry Marchin, TPO, EPA R.VII

SOW 3/90 REVIEW COMPLETION DATE 1/12/93

NO. OF SAMPLES 11 MATRIX AQ

REVIEWER [ ] ESD [ ] ESAT [X] OTHER, CONTRACT/CONTRACTOR ARCS Region III / Halliburton NUS

| | VOA | BNA | PEST | OTHER |
|---|---|---|---|---|
| 1. HOLDING TIMES | O | O | O | |
| 2. GC-MS TUNE/ GC PERFORMANCE | O | O | O | |
| 3. INITIAL CALIBRATIONS | O | O[8] | O | |
| 4. CONTINUING CALIBRATIONS | O[7] | O[9] | O | |
| 5. FIELD BLANKS ("F" = not applicable) | X[2] | X[2] | O | |
| 6. LABORATORY BLANKS | X[1] | O | O | |
| 7. SURROGATES | O | O[3] | M5 | |
| 8. MATRIX SPIKE/DUPLICATES | O | O[4] | O | |
| 9. REGIONAL QC ("F" = not applicable) | O | O | O | |
| 10. INTERNAL STANDARDS | O | O | | |
| 11. COMPOUND IDENTIFICATION | O | O | O | |
| 12. COMPOUND QUANTITATION | O | O | X[11] | |
| 13. SYSTEM PERFORMANCE | O | O | O | |
| 14 OVERALL ASSESSMENT | O | O | X[10] | |

O = No problems or minor problems that do not affect data usability.
X = No more than *about* 5% of the data points are qualified as either estimated or unusable.
M = More than *about* 5% of the data points are qualified as estimated.
Z = More than *about* 5% of the data points are qualified as unusable.
A = DPO action requested; use in conjunction with one of the above codes.

DPO ACTION ITEMS:

AREAS OF CONCERN: X[1] = See Note 1. X[2] = See Note 2. O[3] = See Note 3. O[4] = See Note 4. M5 = See Note 5. O[7] = See Note 7. O[8] = See Note 8. O[9] = See Note 9. X[10] = See Note 10. X[11] = See Note 11.

DPO: [ ] ACTION [X] FYI

Region III

## ORGANIC REGIONAL DATA ASSESSMENT SUMMARY

CASE NO. 18622 LABORATORY IOWA

SDG NO. CGG70 DATA USER Larry Murchin, TPO, EPA R. VII

SOW 3/90 REVIEW COMPLETION DATE 1/12/93

NO. OF SAMPLES 6 MATRIX SOLID

REVIEWER [ ] ESD [ ] ESAT [X] OTHER, CONTRACT/CONTRACTOR ARCS III / Halliburton NUS

| | VOA | BNA | PEST | OTHER |
|---|---|---|---|---|
| 1. HOLDING TIMES | O | O | O | |
| 2. GC-MS TUNE/ GC PERFORMANCE | O | O | O | |
| 3. INITIAL CALIBRATIONS | O | O[8] | O | |
| 4. CONTINUING CALIBRATIONS | O[7] | O[9] | O | |
| 5. FIELD BLANKS ("F" = not applicable) | X[2] | X[2] | O | |
| 6. LABORATORY BLANKS | O[1] | O | O | |
| 7. SURROGATES | O | O | O[5] | |
| 8. MATRIX SPIKE/DUPLICATES | O | O[4] | O | |
| 9. REGIONAL QC ("F" = not applicable) | F | F | F | |
| 10. INTERNAL STANDARDS | O | O | | |
| 11. COMPOUND IDENTIFICATION | O | O | O | |
| 12. COMPOUND QUANTITATION | O | O | X[11] | |
| 13. SYSTEM PERFORMANCE | O | O | O | |
| 14 OVERALL ASSESSMENT | O | O[6] | O[6], Z[10] | |

O = No problems or minor problems that do not affect data usability.
X = No more than *about* 5% of the data points are qualified as either estimated or unusable.
M = More than *about* 5% of the data points are qualified as estimated.
Z = More than *about* 5% of the data points are qualified as unusable.
A = DPO action requested; use in conjunction with one of the above codes.

DPO ACTION ITEMS:

AREAS OF CONCERN: O[1] = See Note 1. X[2] = See Note 2. O[4] = See Note 4. O[5] = See Note 5. O[6] = See Note 6. O[7] = See Note 7. O[8] = See Note O[9] = See Note 9. Z[10] = See Note 10. X[11] = See Note 11.

ORDAS NOTES

1. Positive results were detected (below the CRQL) for acetone in a laboratory blank. Positive sample results for acetone that were less than 10 times the laboratory blank level were qualified (B) due to blank contamination. Positive results were also detected (below the CRQL) in laboratory blanks for methylene chloride and bis(2-ethylhexyl)phthalate, but qualification of samples was based upon field blanks, which contained slightly higher contaminant levels. (See ref.1)

2. Positive results were detected (below the CRQL) for methylene chloride and bis(2-ethylhexyl)phthalate in field blanks. Positive sample results within 10 times the blank were qualified (B). The presence of these two contaminants were inferred from the examination of quantitation lists and chromatograms. (See ref. 1.)

3. Two aqueous samples exhibited one low semivolatile surrogate recovery that was above 10 percent in each case. No qualification of data was required. (See ref. 2.)

4. The aqueous semivolatile MS and MSD each exhibited one low recovery. In addition, one compound exhibited a low recovery in the soil semivolatile matrix spike duplicate. In accordance with Region III EPA policy, no qualification was necessary based upon this information alone. (See ref. 3.)

5. The pesticide surrogate DCB exhibited a low recovery on both columns in one aqueous sample. Non-detected results were qualified estimated (UJ). One pesticide surrogate was outside QC criteria on one column only in several soil and water samples. No qualifications were required, as per Region III EPA policy. (See ref. 4.)

6. The relative standard deviation (RSD) among unspiked compounds in the matrix spike samples, matrix spike duplicates, and unspiked samples were tabulated for the solid semivolatile and pesticide sample data sets, where positive results occured for one or more non-spiked compounds. No qualifications were applied, based upon this information, in accordance with Region III EPA policy. (See ref. 5.)

7. Percent differences exceeded 25 percent for response factors for certain volatile compounds in aqueous and solid volatile continuing calibration standards. No qualifications were required because there were no associated positive sample results. (See ref. 6.)

8. Several semivolatile compounds that were not detected in samples exhibited initial calibration response factor fluctuations that exceeded 30 percent RSD. In the reviewer's professional judgment, associated non-detected results were not considered to be affected by the observed deviations. (See ref. 7.)

9. Several semivolatile compounds that were not detected in samples exhibited continuing calibration response factor fluctuations that exceeded 25 percent difference. In the reviewer's professional judgment, associated non-detected results were not considered to be affected by the observed deviations. (See ref. 8.)

10. Despite the laboratory's adherence to the pesticide requirements in the Statement of Work, there were several aqueous and solid sample chromatograms that exhibited many closely spaced peaks, even after cleanup. Numerous interfering peaks of similar height occurred on either side of the RT windows for most of the reported target pesticides, such that unrelated compounds could have caused any of the RT matches reported as target pesticide compounds. For example, although several components of technical-grade chlordane were reported together, these chlordane peaks were not visible in chromatograms above the "picket fence" pattern of nearby interference peaks. The density of peaks in most cases was approximately 0.3 to 0.5 peaks of similar height per 0.14 minute interval (which represents the width of most RT windows). Positive results were qualified (R), unreliable, to indicate that false positives may be present among any number of the reported pesticide results. (See ref. 9.)

11. Many of the reported pesticide identifications were associated with greater than 25 percent difference between the concentrations detected for the same compound on two different GC columns. Associated results are considered estimated for this reason. In addition, greater than 3-fold discrepancies between two columns were observed for DDT analogs in one surface water and two solid samples, which, as discussed above, suggests that the larger peak in each case could be an artifact (not the pesticide of interest). (See ref. 10.)

ref.18 000063

3D

# SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: PRECISION A L  Contract: _____

Lab Code: PRECIS  Case No.: SM0002  SAS No.: 7453C01  SDG No.: CGG72

Matrix Spike - EPA Sample No.: CGG81RE  Level:(low/med) LOW

| COMPOUND | SPIKE ADDED (ug/Kg) | SAMPLE CONCENTRATION (ug/Kg) | MS CONCENTRATION (ug/Kg) | MS % REC # | QC LIMITS REC. |
|---|---|---|---|---|---|
| Phenol | 7250 | 0 | 2757 | 38 | 26- 90 |
| 2-Chlorophenol | 7250 | 0 | 2724 | 38 | 25-102 |
| 1,4-Dichlorobenzene | 3620 | 0 | 2007 | 55 | 28-104 |
| N-Nitroso-di-n-prop.(1) | 3620 | 0 | 2279 | 63 | 41-126 |
| 1,2,4-Trichlorobenzene | 3620 | 0 | 2101 | 58 | 38-107 |
| 4-Chloro-3-methylphenol | 7250 | 0 | 2895 | 40 | 26-103 |
| Acenaphthene | 3620 | 134.5 | 2420 | 63 | 31-137 |
| 4-Nitrophenol | 7250 | 0 | 0 | 0 * | 11-114 |
| 2,4-Dinitrotoluene | 3620 | 0 | 1522 | 42 | 28- 89 |
| Pentachlorophenol | 7250 | 0 | 2286 | 32 | 17-109 |
| Pyrene | 3620 | 2540 | 4420 | 52 | 35-142 |

| COMPOUND | SPIKE ADDED (ug/Kg) | MSD CONCENTRATION (ug/Kg) | MSD % REC # | % RPD # | QC LIMITS RPD | QC LIMITS REC. |
|---|---|---|---|---|---|---|
| Phenol | 7200 | 1018 | 14 * | 92 * | 35 | 26- 90 |
| 2-Chlorophenol | 7200 | 1533 | 21 * | 58 * | 50 | 25-102 |
| 1,4-Dichlorobenzene | 3600 | 968.1 | 27 * | 68 * | 27 | 28-104 |
| N-Nitroso-di-n-prop.(1) | 3600 | 1598 | 44 | 36 | 38 | 41-126 |
| 1,2,4-Trichlorobenzene | 3600 | 896.1 | 25 * | 80 * | 23 | 38-107 |
| 4-Chloro-3-methylphenol | 7200 | 1036 | 14 * | 96 * | 33 | 26-103 |
| Acenaphthene | 3600 | 1418 | 36 | 55 * | 19 | 31-137 |
| 4-Nitrophenol | 7200 | 0 | 0 * | 0 | 50 | 11-114 |
| 2,4-Dinitrotoluene | 3600 | 1126 | 31 | 30 | 47 | 28- 89 |
| Pentachlorophenol | 7200 | 766.6 | 11 * | 98 * | 47 | 17-109 |
| Pyrene | 3600 | 1979 | -16 * | 378 * | 36 | 35-142 |

(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: 8 out of 11 outside limits
Spike Recovery: 9 out of 22 outside limits

COMMENTS:

correlation of SURROGATES in MS similar to samples — MSD UNUSUALLY LOW — NO QUALIFACTIONS APPLIED

3B

# SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SM0002 SAS No.: 7453C01 SDG No.: CGG72

Matrix Spike - EPA Sample No.: CGG81RE 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 | 56.60 | 0 | 63.77 | 113 | 59-172 |
| Trichloroethene | 56.60 | 0 | 59.46 | 105 | 62-137 |
| Benzene | 56.60 | 0 | 30.47 | 54 * | 66-142 |
| Toluene | 56.60 | 0 | 56.52 | 100 | 59-139 |
| Chlorobenzene | 56.60 | 0 | 54.25 | 96 | 60-133 |

| COMPOUND | SPIKE ADDED (ug/Kg) | MSD CONCENTRATION (ug/Kg) | MSD % REC # | % RPD # | QC LIMITS RPD | QC LIMITS REC. |
|---|---|---|---|---|---|---|
| 1,1-Dichloroethene | 56.60 | 54.25 | 96 | 16 | 22 | 59-172 |
| Trichloroethene | 56.60 | 53.91 | 95 | 10 | 24 | 62-137 |
| Benzene | 56.60 | 52.89 | 93 | 53 * | 21 | 66-142 |
| Toluene | 56.60 | 59.80 | 106 | 6 | 21 | 59-139 |
| Chlorobenzene | 56.60 | 53.23 | 94 | 2 | 21 | 60-133 |

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

* Values outside of QC limits

RPD: 1 out of 5 outside limits
Spike Recovery: 1 out of 10 outside limits

COMMENTS:

# SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SMO002 SAS No.: 7453C01 SDG No.: CGG72

Matrix Spike - EPA Sample No.: CGG81 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 | 51.20 | 0 | 38.38 | 75 | 59-172 |
| Trichloroethene | 51.20 | 0 | 45.85 | 90 | 62-137 |
| Benzene | 51.20 | 0 | 29.07 | 57 * | 66-142 |
| Toluene | 51.20 | 1.637 | 52.91 | 100 | 59-139 |
| Chlorobenzene | 51.20 | 0 | 53.12 | 104 | 60-133 |

| COMPOUND | SPIKE ADDED (ug/Kg) | MSD CONCENTRATION (ug/Kg) | MSD % REC # | % RPD # | QC LIMITS RPD | QC LIMITS REC. |
|---|---|---|---|---|---|---|
| 1,1-Dichloroethene | 49.90 | 45.37 | 91 | 19 | 22 | 59-172 |
| Trichloroethene | 49.90 | 44.57 | 89 | 1 | 24 | 62-137 |
| Benzene | 49.90 | 27.32 | 55 * | 4 | 21 | 66-142 |
| Toluene | 49.90 | 50.86 | 99 | 1 | 21 | 59-139 |
| Chlorobenzene | 49.90 | 52.55 | 105 | 1 | 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: 2 out of 10 outside limits

COMMENTS:

000036

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET ref.19

EPA SAMPLE NO.

CGG79

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SM0002 SAS No.: 7453C01 SDG No.: CGG72

Matrix: (soil/water) SOIL Lab Sample ID: 9208303-1

Sample wt/vol: 32.80 (g/mL) G Lab File ID: B9013

Level: (low/med) LOW Date Received: 08/27/92

% Moisture: 15 decanted: (Y/N) N Date Extracted: 08/27/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 09/02/92

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.4

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 360 | U |
| 111-44-4 | bis(2-Chloroethyl)Ether | 360 | U |
| 95-57-8 | 2-Chlorophenol | 360 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 360 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 360 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 360 | U |
| 95-48-7 | 2-Methylphenol | 360 | U |
| 108-60-1 | 2,2'-oxybis(1-Chloropropane) | 360 | U |
| 106-44-5 | 4-Methylphenol | 360 | U |
| 621-64-7 | N-Nitroso-Di-n-Propylamine | 360 | U |
| 67-72-1 | Hexachloroethane | 360 | U |
| 98-95-3 | Nitrobenzene | 360 | U |
| 78-59-1 | Isophorone | 360 | U |
| 88-75-5 | 2-Nitrophenol | 360 | U |
| 105-67-9 | 2,4-Dimethylphenol | 360 | U |
| 111-91-1 | bis(2-Chloroethoxy)Methane | 360 | U |
| 120-83-2 | 2,4-Dichlorophenol | 360 | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 360 | U |
| 91-20-3 | Naphthalene | 360 | U |
| 106-47-8 | 4-Chloroaniline | 360 | U |
| 87-68-3 | Hexachlorobutadiene | 360 | U |
| 59-50-7 | 4-Chloro-3-Methylphenol | 360 | U |
| 91-57-6 | 2-Methylnaphthalene | 360 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 360 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 360 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 860 | U |
| 91-58-7 | 2-Chloronaphthalene | 360 | U |
| 88-74-4 | 2-Nitroaniline | 860 | U |
| 131-11-3 | Dimethylphthalate | 360 | U |
| 208-96-8 | Acenaphthylene | 100 | J |
| 606-20-2 | 2,6-Dinitrotoluene | 360 | U |
| 99-09-2 | 3-Nitroaniline | 860 | U |
| 83-32-9 | Acenaphthene | 360 | U |

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CGG80

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SM0002 SAS No.: 7453C01 SDG No.: CGG72

Matrix: (soil/water) SOIL Lab Sample ID: 9208303-2

Sample wt/vol: 32.20 (g/mL) G Lab File ID: B9009

Level: (low/med) LOW Date Received: 08/27/92

% Moisture: 21 decanted: (Y/N) N Date Extracted: 08/31/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 09/02/92

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.3

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 390 | U |
| 111-44-4 | bis(2-Chloroethyl)Ether | 390 | U |
| 95-57-8 | 2-Chlorophenol | 390 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 390 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 390 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 390 | U |
| 95-48-7 | 2-Methylphenol | 390 | U |
| 108-60-1 | 2,2'-oxybis(1-Chloropropane) | 390 | U |
| 106-44-5 | 4-Methylphenol | 390 | U |
| 621-64-7 | N-Nitroso-Di-n-Propylamine | 390 | U |
| 67-72-1 | Hexachloroethane | 390 | U |
| 98-95-3 | Nitrobenzene | 390 | U |
| 78-59-1 | Isophorone | 390 | U |
| 88-75-5 | 2-Nitrophenol | 390 | U |
| 105-67-9 | 2,4-Dimethylphenol | 390 | U |
| 111-91-1 | bis(2-Chloroethoxy)Methane | 390 | U |
| 120-83-2 | 2,4-Dichlorophenol | 390 | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 390 | U |
| 91-20-3 | Naphthalene | 390 | U |
| 106-47-8 | 4-Chloroaniline | 390 | U |
| 87-68-3 | Hexachlorobutadiene | 390 | U |
| 59-50-7 | 4-Chloro-3-Methylphenol | 390 | U |
| 91-57-6 | 2-Methylnaphthalene | 390 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 390 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 390 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 940 | U |
| 91-58-7 | 2-Chloronaphthalene | 390 | U |
| 88-74-4 | 2-Nitroaniline | 940 | U |
| 131-11-3 | Dimethylphthalate | 390 | U |
| 208-96-8 | Acenaphthylene | 390 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 390 | U |
| 99-09-2 | 3-Nitroaniline | 940 | U |
| 83-32-9 | Acenaphthene | 390 | U |

000040

EPA SAMPLE NO.

CGG80

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SMO002 SAS No.: 7453C01 SDG No.: CGG72

Matrix: (soil/water) SOIL Lab Sample ID: 9208303-2

Sample wt/vol: 32.20 (g/mL) G Lab File ID: B9009

Level: (low/med) LOW Date Received: 08/27/92

% Moisture: 21 decanted: (Y/N) N Date Extracted: 08/31/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 09/02/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.3

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 51-28-5 | 2,4-Dinitrophenol | 940 | U |
| 100-02-7 | 4-Nitrophenol | 940 | U |
| 132-64-9 | Dibenzofuran | 390 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 390 | U |
| 84-66-2 | Diethylphthalate | 390 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 390 | U |
| 86-73-7 | Fluorene | 390 | U |
| 100-01-6 | 4-Nitroaniline | 940 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 940 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 390 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 390 | U |
| 118-74-1 | Hexachlorobenzene | 390 | U |
| 87-86-5 | Pentachlorophenol | 940 | U |
| 85-01-8 | Phenanthrene | 390 | U |
| 120-12-7 | Anthracene | 390 | U |
| 86-74-8 | Carbazole | 390 | U |
| 84-74-2 | Di-n-Butylphthalate | 46 | J |
| 206-44-0 | Fluoranthene | 34 | J |
| 129-00-0 | Pyrene | 30 | J |
| 85-68-7 | Butylbenzylphthalate | 390 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 390 | U |
| 56-55-3 | Benzo(a)Anthracene | 390 | U |
| 218-01-9 | Chrysene | 390 | U |
| 117-81-7 | bis(2-Ethylhexyl)Phthalate | 390 | U |
| 117-84-0 | Di-n-Octyl Phthalate | 390 | U |
| 205-99-2 | Benzo(b)Fluoranthene | 30 | J |
| 207-08-9 | Benzo(k)Fluoranthene | 390 | U |
| 50-32-8 | Benzo(a)Pyrene | 390 | U |
| 193-39-5 | Indeno(1,2,3-cd)Pyrene | 390 | U |
| 53-70-3 | Dibenz(a,h)Anthracene | 390 | U |
| 191-24-2 | Benzo(g,h,i)Perylene | 390 | U |

(1) - Cannot be separated from Diphenylamine

000039

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET ref.19

EPA SAMPLE NO.

CGG80

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SMO002 SAS No.: 7453C01 SDG No.: CGG72

Matrix: (soil/water) SOIL Lab Sample ID: 9208303-2

Sample wt/vol: 32.20 (g/mL) G Lab File ID: B9009

Level: (low/med) LOW Date Received: 08/27/92

% Moisture: 21 decanted: (Y/N) N Date Extracted: 08/31/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 09/02/92

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.3

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 390 | U |
| 111-44-4 | bis(2-Chloroethyl)Ether | 390 | U |
| 95-57-8 | 2-Chlorophenol | 390 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 390 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 390 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 390 | U |
| 95-48-7 | 2-Methylphenol | 390 | U |
| 108-60-1 | 2,2'-oxybis(1-Chloropropane) | 390 | U |
| 106-44-5 | 4-Methylphenol | 390 | U |
| 621-64-7 | N-Nitroso-Di-n-Propylamine | 390 | U |
| 67-72-1 | Hexachloroethane | 390 | U |
| 98-95-3 | Nitrobenzene | 390 | U |
| 78-59-1 | Isophorone | 390 | U |
| 88-75-5 | 2-Nitrophenol | 390 | U |
| 105-67-9 | 2,4-Dimethylphenol | 390 | U |
| 111-91-1 | bis(2-Chloroethoxy)Methane | 390 | U |
| 120-83-2 | 2,4-Dichlorophenol | 390 | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 390 | U |
| 91-20-3 | Naphthalene | 390 | U |
| 106-47-8 | 4-Chloroaniline | 390 | U |
| 87-68-3 | Hexachlorobutadiene | 390 | U |
| 59-50-7 | 4-Chloro-3-Methylphenol | 390 | U |
| 91-57-6 | 2-Methylnaphthalene | 390 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 390 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 390 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 940 | U |
| 91-58-7 | 2-Chloronaphthalene | 390 | U |
| 88-74-4 | 2-Nitroaniline | 940 | U |
| 131-11-3 | Dimethylphthalate | 390 | U |
| 208-96-8 | Acenaphthylene | 390 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 390 | U |
| 99-09-2 | 3-Nitroaniline | 940 | U |
| 83-32-9 | Acenaphthene | 390 | U |

# BLANK ANALYSIS RESULTS FOR TARGET COMPOUNDS

| FRACTION | TYPE | CONC | MATRIX | SAMPLE # | SOURCE OF $H_2O$ | CONTAMINANTS (CONCENTRATION / DETECTION LIM |
|---|---|---|---|---|---|---|
| VOA | | | | VBLK10 8/26 | 8/26 (LAB $H_2O$) | Methylene chloride - 8 ug/kg (1)<br>Acetone - 5 ug/kg (1) |
| VOA | | | | VBLK02 (9/2) | (1) | MC - 8 ug/kg, Acetone - 7 ug/kg, Toluene 3 ug/kg, 2-Butanone - 2 ug/kg, PCE - 2 ug/ 1,1,2,2-PCA - 1 ug/kg, Ethylbenzene - 1 ug/kg |
| VOA | | | | VBLK05 (9/9) | (1) | MC - 5 ug/kg, Acetone - 5 ug/kg, Toluene - 2 ug/kg, PCE - 1 ug/kg, 1,1,2,2-PCA - 1 ug/kg, Styrene - 1 ug/kg, Xylenes - 3 ug/kg |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

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

COMMENTS:

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

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

P&T Trap Exhibits possible carryover in Runs performed after standards! (VBlk02, -05)

ref.20

# 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 |
|---|---|---|---|---|---|
| VBLK02 | VOA | 0.8 | | unknown (15 ug/kg) | |
| | | | | spec 44, 54, 38, 100, 130, 70, 86, 134 ] sim. | |
| | | | | | |
| VBLK05 | VOA | 0.88 | | unknown | |
| | | | | spec 44, [41, 68, 111, 154, 158] | |
| | | | | | |
| VBLK10 | VOA | | | ND | |

ND = none detected

IS = internal standards

ref.21

8C

# SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: PRECISION A L  Contract: _____

Lab Code: PRECIS  Case No.: SMO002  SAS No.: 7453C01  SDG No.: CGG72

Lab File ID (Standard): B9004  Date Analyzed: 09/02/92

Instrument ID: HPBNA  Time Analyzed: 0926

| | | IS4(PHN) AREA # | RT # | IS5(CRY) AREA # | RT # | IS6(PRY) AREA # | RT # |
|---|---|---|---|---|---|---|---|
| | 12 HOUR STD | 156192 | 20.47 | 130419 | 27.36 | 156866 | 31.61 |
| | UPPER LIMIT | 312384 | 20.97 | 260838 | 27.86 | 313732 | 32.11 |
| | LOWER LIMIT | 78096 | 19.97 | 65210 | 26.86 | 78433 | 31.11 |
| | EPA SAMPLE NO. | | | | | | |
| 01 | CGG73RE | 185230 | 20.47 | 175525 | 27.35 | 181617 | 31.62 |
| 02 | CGG79 | 199266 | 20.50 | 133792 | 27.39 | 90984 | 31.[illegible] |
| 03 | CGG80 | 199486 | 20.49 | 185792 | 27.35 | 189494 | 31.[illegible] |
| 04 | CGG81RE | 156748 | 20.48 | 97240 | 27.38 | 67075 * | 31.65 |
| 05 | CGG81MSDRE | 205814 | 20.50 | 121159 | 27.39 | 78692 | 31.67 |
| 06 | CGG81MSRE | 166675 | 20.49 | 95752 | 27.39 | 68878 * | 31.67 |
| 07 | SBLK01 | 252193 | 20.48 | 246909 | 27.36 | 246105 | 31.62 |
| 08 | SBLK02 | 305325 | 20.50 | 266792 * | 27.35 | 290780 | 31.63 |
| 09 | SBLK03 | 206390 | 20.51 | 188125 | 27.36 | 186223 | 31.63 |

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

AREA UPPER LIMIT = + 100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = +0.50 minutes of internal standard RT.
RT LOWER LIMIT = -0.50 minutes of internal standard RT.

# Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

No qualifiers on QC samples

1F

EPA SAMPLE NO.

CGG80

# SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SM0002 SAS No.: 7453C01 SDG No.: CGG72

Matrix: (soil/water) SOIL Lab Sample ID: 9208303-2

Sample wt/vol: 32.20 (g/mL) G Lab File ID: B9009

Level: (low/med) LOW Date Received: 08/27/92

% Moisture: 21 decanted: (Y/N) N Date Extracted: 08/31/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 09/02/92

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.3

Number TICs found: 8

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. 2807309 | Ethanol, 2-propoxy- | 5.14 | 98 | JN |
| 2. 2213232 | Heptane, 2,4-dimethyl- | 5.38 | 220 | JN |
| 3. 19549872 | 2,4-DIMETHYL-1-HEPTENE | 5.75 | 120 | JN |
| 4. 2216344 | Octane, 4-methyl- | 6.15 | 240 | JN |
| 5. 17301325 | Undecane, 4,7-dimethyl- | 9.72 | 220 | JN |
| 6. 17301325 | Undecane, 4,7-dimethyl- | 9.83 | 79 | JN |
| 7. 62016197 | Octane, 6-ethyl-2-methyl- | 10.73 | 140 | JN |
| 8. 629629 | Pentadecane | 13.37 | 79 | JN |

000042
EPA SAMPLE NO.

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CGG81

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SM0002 SAS No.: 7453C01 SDG No.: CGG72

Matrix: (soil/water) SOIL Lab Sample ID: 9208251-1

Sample wt/vol: 30.10 (g/mL) G Lab File ID: B8240

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: 8 decanted: (Y/N) N Date Extracted: 08/26/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/27/92

Injection Volume: 2.0 (uL) Dilution Factor: 0.5

GPC Cleanup: (Y/N) Y pH: 8.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 710 | U |
| 111-44-4 | bis(2-Chloroethyl)Ether | 710 | U |
| 95-57-8 | 2-Chlorophenol | 710 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 710 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 710 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 710 | U |
| 95-48-7 | 2-Methylphenol | 710 | U |
| 108-60-1 | 2,2'-oxybis(1-Chloropropane) | 710 | U |
| 106-44-5 | 4-Methylphenol | 710 | U |
| 621-64-7 | N-Nitroso-Di-n-Propylamine | 710 | U |
| 67-72-1 | Hexachloroethane | 710 | U |
| 98-95-3 | Nitrobenzene | 710 | U |
| 78-59-1 | Isophorone | 710 | U |
| 88-75-5 | 2-Nitrophenol | 710 | U |
| 105-67-9 | 2,4-Dimethylphenol | 710 | U |
| 111-91-1 | bis(2-Chloroethoxy)Methane | 710 | U |
| 120-83-2 | 2,4-Dichlorophenol | 710 | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 710 | U |
| 91-20-3 | Naphthalene | 420 | J |
| 106-47-8 | 4-Chloroaniline | 710 | U |
| 87-68-3 | Hexachlorobutadiene | 710 | U |
| 59-50-7 | 4-Chloro-3-Methylphenol | 710 | U |
| 91-57-6 | 2-Methylnaphthalene | 52 | J |
| 77-47-4 | Hexachlorocyclopentadiene | 710 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 710 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 1700 | U |
| 91-58-7 | 2-Chloronaphthalene | 710 | U |
| 88-74-4 | 2-Nitroaniline | 1700 | U |
| 131-11-3 | Dimethylphthalate | 710 | U |
| 208-96-8 | Acenaphthylene | 710 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 710 | U |
| 99-09-2 | 3-Nitroaniline | 1700 | U |
| 83-32-9 | Acenaphthene | 710 | U |

000043

EPA SAMPLE NO.

CGG81

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SM0002 SAS No.: 7453C01 SDG No.: CGG72

Matrix: (soil/water) SOIL Lab Sample ID: 9208251-1

Sample wt/vol: 30.10 (g/mL) G Lab File ID: B8240

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: 8 decanted: (Y/N) N Date Extracted: 08/26/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/27/92

Injection Volume: 2.0 (uL) Dilution Factor: 0.5

GPC Cleanup: (Y/N) Y pH: 8.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 51-28-5 | 2,4-Dinitrophenol | 1700 | U |
| 100-02-7 | 4-Nitrophenol | 1700 | U |
| 132-64-9 | Dibenzofuran | 38 | J |
| 121-14-2 | 2,4-Dinitrotoluene | 710 | U |
| 84-66-2 | Diethylphthalate | 710 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 710 | U |
| 86-73-7 | Fluorene | 58 | J |
| 100-01-6 | 4-Nitroaniline | 1700 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 1700 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 710 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 710 | U |
| 118-74-1 | Hexachlorobenzene | 710 | U |
| 87-86-5 | Pentachlorophenol | 1700 | U |
| 85-01-8 | Phenanthrene | 650 | J |
| 120-12-7 | Anthracene | 190 | J |
| 86-74-8 | Carbazole | 99 | J |
| 84-74-2 | Di-n-Butylphthalate | 2900 | BE |
| 206-44-0 | Fluoranthene | 1300 | |
| 129-00-0 | Pyrene | 1100 | |
| 85-68-7 | Butylbenzylphthalate | 710 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 710 | U |
| 56-55-3 | Benzo(a)Anthracene | 270 | J |
| 218-01-9 | Chrysene | 650 | J |
| 117-81-7 | bis(2-Ethylhexyl)Phthalate | 750 | |
| 117-84-0 | Di-n-Octyl Phthalate | 710 | U |
| 205-99-2 | Benzo(b)Fluoranthene | 290 | J |
| 207-08-9 | Benzo(k)Fluoranthene | 970 | |
| 50-32-8 | Benzo(a)Pyrene | 470 | J |
| 193-39-5 | Indeno(1,2,3-cd)Pyrene | 350 | J |
| 53-70-3 | Dibenz(a,h)Anthracene | 94 | J |
| 191-24-2 | Benzo(g,h,i)Perylene | 260 | J |

(1) - Cannot be separated from Diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

CGG81

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SMO002 SAS No.: 7453C01 SDG No.: CGG72

Matrix: (soil/water) SOIL Lab Sample ID: 9208251-1

Sample wt/vol: 30.10 (g/mL) G Lab File ID: B8240

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: 8 decanted: (Y/N) N Date Extracted: 08/26/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/27/92

Injection Volume: 2.0 (uL) Dilution Factor: 0.5

GPC Cleanup: (Y/N) Y pH: 8.0

Number TICs found: 8

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. 547648 | Propanoic acid, 2-hydroxy-, | 4.19 | 1200 | BJN |
| 2. 141797 | 3-Penten-2-one, 4-methyl- | 4.95 | 220 | BJN |
| 3. | UNKNOWN | 5.32 | 470 | J |
| 4. 123422 | 2-Pentanone, 4-hydroxy-4-met | 5.77 | 12000 | JN |
| 5. 55000527 | Hexadecane, 2,6,10-trimethyl | 18.92 | 140 | JN |
| 6. | UNKNOWN | 19.79 | 180 | J |
| 7. 40230248 | 2-AMINO-4,6-DIPHENYLPYRIMIDI | 22.89 | 180 | JN |
| 8. 33285857 | Silylamine, 1,1,1-trimethyl- | 22.98 | 760 | JN |

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CGG81RE

Lab Name: PRECISION A L  Contract: _____

Lab Code: PRECIS  Case No.: SMO002  SAS No.: 7453C01  SDG No.: CGG72

Matrix: (soil/water) SOIL  Lab Sample ID: 9208251-1RE

Sample wt/vol: 29.10 (g/mL) G  Lab File ID: B9010

Level: (low/med) LOW  Date Received: 08/20/92

% Moisture: 8  decanted: (Y/N) N  Date Extracted: 08/28/92

Concentrated Extract Volume: 500.0 (uL)  Date Analyzed: 09/02/92

Injection Volume: 2.0(uL)  Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y  pH: 8.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 370 | U |
| 111-44-4 | bis(2-Chloroethyl)Ether | 370 | U |
| 95-57-8 | 2-Chlorophenol | 370 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 370 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 370 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 370 | U |
| 95-48-7 | 2-Methylphenol | 370 | U |
| 108-60-1 | 2,2'-oxybis(1-Chloropropane) | 370 | U |
| 106-44-5 | 4-Methylphenol | 370 | U |
| 621-64-7 | N-Nitroso-Di-n-Propylamine | 370 | U |
| 67-72-1 | Hexachloroethane | 370 | U |
| 98-95-3 | Nitrobenzene | 370 | U |
| 78-59-1 | Isophorone | 370 | U |
| 88-75-5 | 2-Nitrophenol | 370 | U |
| 105-67-9 | 2,4-Dimethylphenol | 370 | U |
| 111-91-1 | bis(2-Chloroethoxy)Methane | 370 | U |
| 120-83-2 | 2,4-Dichlorophenol | 370 | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 370 | U |
| 91-20-3 | Naphthalene | 550 | |
| 106-47-8 | 4-Chloroaniline | 370 | U |
| 87-68-3 | Hexachlorobutadiene | 370 | U |
| 59-50-7 | 4-Chloro-3-Methylphenol | 370 | U |
| 91-57-6 | 2-Methylnaphthalene | 47 | J |
| 77-47-4 | Hexachlorocyclopentadiene | 370 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 370 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 900 | U |
| 91-58-7 | 2-Chloronaphthalene | 370 | U |
| 88-74-4 | 2-Nitroaniline | 900 | U |
| 131-11-3 | Dimethylphthalate | 370 | U |
| 208-96-8 | Acenaphthylene | 370 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 370 | U |
| 99-09-2 | 3-Nitroaniline | 900 | U |
| 83-32-9 | Acenaphthene | 67 | J |

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CGG81RE

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SM0002 SAS No.: 7453C01 SDG No.: CGG72

Matrix: (soil/water) SOIL Lab Sample ID: 9208251-1RE

Sample wt/vol: 29.10 (g/mL) G Lab File ID: B9010

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: 8 decanted: (Y/N) N Date Extracted: 08/28/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 09/02/92

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 51-28-5 | 2,4-Dinitrophenol | 900 | U |
| 100-02-7 | 4-Nitrophenol | 900 | U |
| 132-64-9 | Dibenzofuran | 55 | J |
| 121-14-2 | 2,4-Dinitrotoluene | 370 | U |
| 84-66-2 | Diethylphthalate | 370 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 370 | U |
| 86-73-7 | Fluorene | 100 | J |
| 100-01-6 | 4-Nitroaniline | 900 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 900 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 370 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 370 | U |
| 118-74-1 | Hexachlorobenzene | 370 | U |
| 87-86-5 | Pentachlorophenol | 900 | U |
| 85-01-8 | Phenanthrene | 850 | |
| 120-12-7 | Anthracene | 270 | J |
| 86-74-8 | Carbazole | 580 | |
| 84-74-2 | Di-n-Butylphthalate | 2300 | BE |
| 206-44-0 | Fluoranthene | 1100 | |
| 129-00-0 | Pyrene | 1300 | |
| 85-68-7 | Butylbenzylphthalate | 610 | |
| 91-94-1 | 3,3'-Dichlorobenzidine | 370 | U |
| 56-55-3 | Benzo(a)Anthracene | 900 | |
| 218-01-9 | Chrysene | 560 | |
| 117-81-7 | bis(2-Ethylhexyl)Phthalate | 2400 | BE |
| 117-84-0 | Di-n-Octyl Phthalate | 370 | U |
| 205-99-2 | Benzo(b)Fluoranthene | 1400 | |
| 207-08-9 | Benzo(k)Fluoranthene | 340 | J |
| 50-32-8 | Benzo(a)Pyrene | 780 | |
| 193-39-5 | Indeno(1,2,3-cd)Pyrene | 370 | |
| 53-70-3 | Dibenz(a,h)Anthracene | 370 | U |
| 191-24-2 | Benzo(g,h,i)Perylene | 360 | J |

(1) - Cannot be separated from Diphenylamine

000047
EPA SAMPLE NO.

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CGG81RE

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SMO002 SAS No.: 7453C01 SDG No.: CGG72

Matrix: (soil/water) SOIL Lab Sample ID: 9208251-1RE

Sample wt/vol: 29.10 (g/mL) G Lab File ID: B9010

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: 8 decanted: (Y/N) N Date Extracted: 08/28/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 09/02/92

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.0

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. 127004 | 2-Propanol, 1-chloro- | 4.13 | 880 | JN |
| 2. 544252 | 1,3,5-Cycloheptatriene | 4.51 | 220 | JN |
| 3. | UNKNOWN | 6.23 | 170 | J |

000048

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CGG72

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SM0002 SAS No.: 7453C0 SDG No.: CGG72

Matrix: (soil/water) SOIL Lab Sample ID: 8251-2

Sample wt/vol: 30.1 (g/mL) G Lab File ID: _____

% Moisture: 54 decanted: (Y/N) N Date Received: ~~08/19/92~~ 08/20/92 HMR 11-20-9

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 08/26/92

Concentrated Extract Volume: 500 (uL) Date Analyzed: 09/03/92

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 8.1 Sulfur Cleanup: (Y/N) N

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | 0.74 | U |
| 319-85-7 | beta-BHC | 0.74 | U |
| 319-86-8 | delta-BHC | 0.74 | U |
| 58-89-9 | gamma-BHC (Lindane) | 0.74 | U |
| 76-44-8 | Heptachlor | 0.74 | U |
| 309-00-2 | Aldrin | 0.74 | U |
| 1024-57-3 | Heptachlor epoxide | 0.74 | U |
| 959-98-8 | Endosulfan I | 0.74 | U |
| 60-57-1 | Dieldrin | 1.4 | U |
| 72-55-9 | 4,4'-DDE | 1.4 | U |
| 72-20-8 | Endrin | 1.4 | U |
| 33213-65-9 | Endosulfan II | 1.4 | U |
| 72-54-8 | 4,4'-DDD | 1.4 | U |
| 1031-07-8 | Endosulfan sulfate | 1.4 | U |
| 50-29-3 | 4,4'-DDT | 1.4 | U |
| 72-43-5 | Methoxychlor | 7.4 | U |
| 53494-70-5 | Endrin ketone | 1.4 | U |
| 7421-36-3 | Endrin aldehyde | 1.4 | U |
| 5103-71-9 | alpha-Chlordane | 0.74 | U |
| 5103-74-2 | gamma-Chlordane | 0.74 | U |
| 8001-35-2 | Toxaphene | 74 | U |
| 12674-11-2 | Aroclor-1016 | 14 | U |
| 11104-28-2 | Aroclor-1221 | 29 | U |
| 11141-16-5 | Aroclor-1232 | 14 | U |
| 53469-21-9 | Aroclor-1242 | 14 | U |
| 12672-29-6 | Aroclor-1248 | 14 | U |
| 11097-69-1 | Aroclor-1254 | 14 | U |
| 11096-82-5 | Aroclor-1260 | 14 | U |

000049

EPA SAMPLE NO.

CGG72RE

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SMO002 SAS No.: 7453C0 SDG No.: CGG72

Matrix: (soil/water) SOIL Lab Sample ID: 8251-2RE

Sample wt/vol: 30.4 (g/mL) G Lab File ID: _____

% Moisture: 54 decanted: (Y/N) N Date Received: ~~08/19/92~~ 08/20/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 09/16/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 09/19/92

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 8.1 Sulfur Cleanup: (Y/N) N

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | 7.3 | U |
| 319-85-7 | beta-BHC | 7.3 | U |
| 319-86-8 | delta-BHC | 7.3 | U |
| 58-89-9 | gamma-BHC (Lindane) | 7.3 | U |
| 76-44-8 | Heptachlor | 7.3 | U |
| 309-00-2 | Aldrin | 7.3 | U |
| 1024-57-3 | Heptachlor epoxide | 7.3 | U |
| 959-98-8 | Endosulfan I | 7.3 | U |
| 60-57-1 | Dieldrin | 14 | U |
| 72-55-9 | 4,4'-DDE | 14 | U |
| 72-20-8 | Endrin | 14 | U |
| 33213-65-9 | Endosulfan II | 14 | U |
| 72-54-8 | 4,4'-DDD | 14 | U |
| 1031-07-8 | Endosulfan sulfate | 14 | U |
| 50-29-3 | 4,4'-DDT | 14 | U |
| 72-43-5 | Methoxychlor | 73 | U |
| 53494-70-5 | Endrin ketone | 14 | U |
| 7421-36-3 | Endrin aldehyde | 14 | U |
| 5103-71-9 | alpha-Chlordane | 7.3 | U |
| 5103-74-2 | gamma-Chlordane | 7.3 | U |
| 8001-35-2 | Toxaphene | 730 | U |
| 12674-11-2 | Aroclor-1016 | 140 | U |
| 11104-28-2 | Aroclor-1221 | 290 | 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 | 140 | U |
| 11096-82-5 | Aroclor-1260 | 140 | U |

000050

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CGG73

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SM0002 SAS No.: 7453C0 SDG No.: CGG72

Matrix: (soil/water) SOIL Lab Sample ID: 8251-3

Sample wt/vol: 30.3 (g/mL) G Lab File ID: _____

% Moisture: 7 decanted: (Y/N) N Date Received: 08/~~19~~ 20/92 HWR 11-20-92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 08/26/92

Concentrated Extract Volume: 500 (uL) Date Analyzed: 09/03/92

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 7.9 Sulfur Cleanup: (Y/N) N

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | 0.36 | U |
| 319-85-7 | beta-BHC | 0.36 | U |
| 319-86-8 | delta-BHC | 0.36 | U |
| 58-89-9 | gamma-BHC (Lindane) | 0.36 | U |
| 76-44-8 | Heptachlor | 0.36 | U |
| 309-00-2 | Aldrin | 0.36 | U |
| 1024-57-3 | Heptachlor epoxide | 0.36 | U |
| 959-98-8 | Endosulfan I | 0.36 | U |
| 60-57-1 | Dieldrin | 0.70 | U |
| 72-55-9 | 4,4'-DDE | 0.70 | U |
| 72-20-8 | Endrin | 0.70 | U |
| 33213-65-9 | Endosulfan II | 0.70 | U |
| 72-54-8 | 4,4'-DDD | 0.70 | U |
| 1031-07-8 | Endosulfan sulfate | 0.70 | U |
| 50-29-3 | 4,4'-DDT | 0.70 | U |
| 72-43-5 | Methoxychlor | 3.6 | U |
| 53494-70-5 | Endrin ketone | 0.70 | U |
| 7421-36-3 | Endrin aldehyde | 0.70 | U |
| 5103-71-9 | alpha-Chlordane | 0.36 | U |
| 5103-74-2 | gamma-Chlordane | 0.36 | U |
| 8001-35-2 | Toxaphene | 36 | U |
| 12674-11-2 | Aroclor-1016 | 7.0 | U |
| 11104-28-2 | Aroclor-1221 | 14 | U |
| 11141-16-5 | Aroclor-1232 | 7.0 | U |
| 53469-21-9 | Aroclor-1242 | 7.0 | U |
| 12672-29-6 | Aroclor-1248 | 7.0 | U |
| 11097-69-1 | Aroclor-1254 | 7.0 | U |
| 11096-82-5 | Aroclor-1260 | 7.0 | U |

000051

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CGG73RE

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SM0002 SAS No.: 7453C0 SDG No.: CGG72

Matrix: (soil/water) SOIL Lab Sample ID: 8251-3RE

Sample wt/vol: 30.6 (g/mL) G Lab File ID: _____

% Moisture: 7 decanted: (Y/N) N Date Received: 08/~~19~~ 20/92 HMR 11-20-92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 09/16/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 09/19/92

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 7.9 Sulfur Cleanup: (Y/N) N

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | 3.6 | U |
| 319-85-7 | beta-BHC | 3.6 | U |
| 319-86-8 | delta-BHC | 3.6 | U |
| 58-89-9 | gamma-BHC (Lindane) | 3.6 | U |
| 76-44-8 | Heptachlor | 3.6 | U |
| 309-00-2 | Aldrin | 3.6 | U |
| 1024-57-3 | Heptachlor epoxide | 3.6 | U |
| 959-98-8 | Endosulfan I | 3.6 | U |
| 60-57-1 | Dieldrin | 7.0 | U |
| 72-55-9 | 4,4'-DDE | 7.0 | U |
| 72-20-8 | Endrin | 7.0 | U |
| 33213-65-9 | Endosulfan II | 7.0 | U |
| 72-54-8 | 4,4'-DDD | 7.0 | U |
| 1031-07-8 | Endosulfan sulfate | 7.0 | U |
| 50-29-3 | 4,4'-DDT | 7.0 | U |
| 72-43-5 | Methoxychlor | 36 | U |
| 53494-70-5 | Endrin ketone | 7.0 | U |
| 7421-36-3 | Endrin aldehyde | 7.0 | U |
| 5103-71-9 | alpha-Chlordane | 3.6 | U |
| 5103-74-2 | gamma-Chlordane | 3.6 | U |
| 8001-35-2 | Toxaphene | 360 | U |
| 12674-11-2 | Aroclor-1016 | 70 | U |
| 11104-28-2 | Aroclor-1221 | 140 | U |
| 11141-16-5 | Aroclor-1232 | 70 | U |
| 53469-21-9 | Aroclor-1242 | 70 | U |
| 12672-29-6 | Aroclor-1248 | 70 | U |
| 11097-69-1 | Aroclor-1254 | 70 | U |
| 11096-82-5 | Aroclor-1260 | 70 | U |

000052

EPA SAMPLE NO.

CGG79

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SMO002 SAS No.: 7453C0 SDG No.: CGG72

Matrix: (soil/water) SOIL Lab Sample ID: 8303-1

Sample wt/vol: 30.0 (g/mL) G Lab File ID: _____

% Moisture: 15 decanted: (Y/N) N Date Received: 08/~~19~~ 20/92 HMR 11-20-92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 08/28/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 09/03/92

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 8.4 Sulfur Cleanup: (Y/N) N

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | 0.40 | U |
| 319-85-7 | beta-BHC | 0.40 | U |
| 319-86-8 | delta-BHC | 0.40 | U |
| 58-89-9 | gamma-BHC (Lindane) | 0.40 | U |
| 76-44-8 | Heptachlor | 0.40 | U |
| 309-00-2 | Aldrin | 0.40 | U |
| 1024-57-3 | Heptachlor epoxide | 0.40 | U |
| 959-98-8 | Endosulfan I | 0.40 | U |
| 60-57-1 | Dieldrin | 0.78 | U |
| 72-55-9 | 4,4'-DDE | 0.78 | U |
| 72-20-8 | Endrin | 0.78 | U |
| 33213-65-9 | Endosulfan II | 0.78 | U |
| 72-54-8 | 4,4'-DDD | 0.78 | U |
| 1031-07-8 | Endosulfan sulfate | 0.78 | U |
| 50-29-3 | 4,4'-DDT | 0.78 | U |
| 72-43-5 | Methoxychlor | 4.0 | U |
| 53494-70-5 | Endrin ketone | 0.78 | U |
| 7421-36-3 | Endrin aldehyde | 0.78 | U |
| 5103-71-9 | alpha-Chlordane | 0.40 | U |
| 5103-74-2 | gamma-Chlordane | 0.40 | U |
| 8001-35-2 | Toxaphene | 40 | U |
| 12674-11-2 | Aroclor-1016 | 7.8 | U |
| 11104-28-2 | Aroclor-1221 | 16 | U |
| 11141-16-5 | Aroclor-1232 | 7.8 | U |
| 53469-21-9 | Aroclor-1242 | 7.8 | U |
| 12672-29-6 | Aroclor-1248 | 7.8 | U |
| 11097-69-1 | Aroclor-1254 | 7.8 | U |
| 11096-82-5 | Aroclor-1260 | 7.8 | U |

COPY OF CORRECTED/Ammended Form I: 000052

EPA SAMPLE NO.

PESTICIDE ORGANICS ANALYSIS DATA SHEET

INCLUDES REVIEWER'S ADDITIONS.

CGG79

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SM0002 SAS No.: 7453C0 SDG No.: CGG72

Matrix: (soil/water) SOIL Lab Sample ID: 8303-1

Sample wt/vol: 30.0 (g/mL) G Lab File ID: _____

% Moisture: 15 decanted: (Y/N) N Date Received: 08/~~19~~ 20/92 11-20-92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 08/28/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 09/03/92

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 8.4 Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

| CAS NO. | COMPOUND | | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | 0.40 | U |
| 319-85-7 | beta-BHC | 0.40 | U |
| 319-86-8 | delta-BHC | 0.40 | U |
| 58-89-9 | gamma-BHC (Lindane) | 0.40 | U |
| 76-44-8 | Heptachlor | 0.40 | U |
| 309-00-2 | Aldrin | 0.40 | U |
| 1024-57-3 | Heptachlor epoxide | 0.40 | U |
| 959-98-8 | Endosulfan I | 0.40 | U |
| 60-57-1 | Dieldrin | 0.78 | U |
| 72-55-9 | 4,4'-DDE | 0.11 ~~0.78~~ | ~~U~~ J |
| 72-20-8 | Endrin | 0.78 | U |
| 33213-65-9 | Endosulfan II | 0.78 | U |
| 72-54-8 | 4,4'-DDD | 0.59 ~~0.78~~ | ~~U~~ J |
| 1031-07-8 | Endosulfan sulfate | 0.78 | U |
| 50-29-3 | 4,4'-DDT | 0.78 | U |
| 72-43-5 | Methoxychlor | 4.0 | U |
| 53494-70-5 | Endrin ketone | 0.78 | U |
| 7421-36-3 | Endrin aldehyde | 0.78 | U |
| 5103-71-9 | alpha-Chlordane | 0.14 ~~0.40~~ | ~~U~~ J |
| 5103-74-2 | gamma-Chlordane | 0.17 ~~0.40~~ | ~~U~~ J |
| 8001-35-2 | Toxaphene | 40 | U |
| 12674-11-2 | Aroclor-1016 | 7.8 | U |
| 11104-28-2 | Aroclor-1221 | 16 | U |
| 11141-16-5 | Aroclor-1232 | 7.8 | U |
| 53469-21-9 | Aroclor-1242 | 7.8 | U |
| 12672-29-6 | Aroclor-1248 | 7.8 | U |
| 11097-69-1 | Aroclor-1254 | 7.8 | U |
| 11096-82-5 | Aroclor-1260 | 7.8 | U |

12/31/92

000053

EPA SAMPLE NO.

CGG79RE

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SM0002 SAS No.: 7453C0 SDG No.: CGG72

Matrix: (soil/water) SOIL Lab Sample ID: 8303-1RE

Sample wt/vol: 30.9 (g/mL) G Lab File ID: _____

% Moisture: 15 decanted: (Y/N) N Date Received: 08/~~19~~ 20/92 Hmr 11-20-92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 09/16/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 09/19/92

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 8.4 Sulfur Cleanup: (Y/N) N

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | 3.9 | U |
| 319-85-7 | beta-BHC | 3.9 | U |
| 319-86-8 | delta-BHC | 3.9 | U |
| 58-89-9 | gamma-BHC (Lindane) | 3.9 | U |
| 76-44-8 | Heptachlor | 3.9 | U |
| 309-00-2 | Aldrin | 3.9 | U |
| 1024-57-3 | Heptachlor epoxide | 3.9 | U |
| 959-98-8 | Endosulfan I | 3.9 | U |
| 60-57-1 | Dieldrin | 7.5 | U |
| 72-55-9 | 4,4'-DDE | 7.5 | U |
| 72-20-8 | Endrin | 7.5 | U |
| 33213-65-9 | Endosulfan II | 7.5 | U |
| 72-54-8 | 4,4'-DDD | 7.5 | U |
| 1031-07-8 | Endosulfan sulfate | 7.5 | U |
| 50-29-3 | 4,4'-DDT | 7.5 | U |
| 72-43-5 | Methoxychlor | 39 | U |
| 53494-70-5 | Endrin ketone | 7.5 | U |
| 7421-36-3 | Endrin aldehyde | 7.5 | U |
| 5103-71-9 | alpha-Chlordane | 3.9 | U |
| 5103-74-2 | gamma-Chlordane | 3.9 | U |
| 8001-35-2 | Toxaphene | 390 | U |
| 12674-11-2 | Aroclor-1016 | 75 | U |
| 11104-28-2 | Aroclor-1221 | 150 | U |
| 11141-16-5 | Aroclor-1232 | 75 | U |
| 53469-21-9 | Aroclor-1242 | 75 | U |
| 12672-29-6 | Aroclor-1248 | 75 | U |
| 11097-69-1 | Aroclor-1254 | 75 | U |
| 11096-82-5 | Aroclor-1260 | 75 | U |

000054

EPA SAMPLE NO.

CGG80

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SM0002 SAS No.: 7453C0 SDG No.: CGG72

Matrix: (soil/water) SOIL Lab Sample ID: 8303-2

Sample wt/vol: 36.1 (g/mL) G Lab File ID: _____

% Moisture: 21 decanted: (Y/N) N Date Received: 08/~~19~~ 20/92 11/20/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 09/24/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 09/24/92

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 8.3 Sulfur Cleanup: (Y/N) N

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | 1.8 | U |
| 319-85-7 | beta-BHC | 1.8 | U |
| 319-86-8 | delta-BHC | 1.8 | U |
| 58-89-9 | gamma-BHC (Lindane) | 1.8 | U |
| 76-44-8 | Heptachlor | 1.8 | U |
| 309-00-2 | Aldrin | 1.8 | U |
| 1024-57-3 | Heptachlor epoxide | 1.8 | U |
| 959-98-8 | Endosulfan I | 1.8 | U |
| 60-57-1 | Dieldrin | 3.5 | U |
| 72-55-9 | 4,4'-DDE | 3.5 | U |
| 72-20-8 | Endrin | 3.5 | U |
| 33213-65-9 | Endosulfan II | 3.5 | U |
| 72-54-8 | 4,4'-DDD | 2.1 | JP |
| 1031-07-8 | Endosulfan sulfate | 3.5 | U |
| 50-29-3 | 4,4'-DDT | 3.5 | U |
| 72-43-5 | Methoxychlor | 18 | U |
| 53494-70-5 | Endrin ketone | 3.5 | U |
| 7421-36-3 | Endrin aldehyde | 3.5 | U |
| 5103-71-9 | alpha-Chlordane | 1.8 | U |
| 5103-74-2 | gamma-Chlordane | 1.8 | U |
| 8001-35-2 | Toxaphene | 180 | U |
| 12674-11-2 | Aroclor-1016 | 35 | U |
| 11104-28-2 | Aroclor-1221 | 70 | U |
| 11141-16-5 | Aroclor-1232 | 35 | U |
| 53469-21-9 | Aroclor-1242 | 35 | U |
| 12672-29-6 | Aroclor-1248 | 35 | U |
| 11097-69-1 | Aroclor-1254 | 35 | U |
| 11096-82-5 | Aroclor-1260 | 13 | JP |

COPY OF CORRECTED FORM I

000054

EPA SAMPLE NO.

CGG80

PESTICIDE ORGANICS ANALYSIS DATA SHEET

(REVIEWER CORRECTIONS included)

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SM0002 SAS No.: 7453C0 SDG No.: CGG72

Matrix: (soil/water) SOIL Lab Sample ID: 8303-2

Sample wt/vol: 36.1 (g/mL) G Lab File ID: _____

% Moisture: 21 decanted: (Y/N) N Date Received: 08/~~19~~ 20/92 11/20/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 09/24/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 09/24/92

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 8.3 Sulfur Cleanup: (Y/N) N

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | 1.8 | U |
| 319-85-7 | beta-BHC | 1.8 | U |
| 319-86-8 | delta-BHC | 1.8 | U |
| 58-89-9 | gamma-BHC (Lindane) | 1.8 | U |
| 76-44-8 | Heptachlor | 1.8 | U |
| 309-00-2 | Aldrin | 1.8 | U |
| 1024-57-3 | Heptachlor epoxide | 1.8 | U |
| 959-98-8 | Endosulfan I | 1.8 | U |
| 60-57-1 | Dieldrin | 3.5 | U |
| 72-55-9 | 4,4'-DDE | 3.5 | U |
| 72-20-8 | Endrin | 3.5 | U |
| 33213-65-9 | Endosulfan II | 3.5 | U |
| 72-54-8 | 4,4'-DDD | 3.5 ~~3.1~~ ~~JP~~ | U |
| 1031-07-8 | Endosulfan sulfate | 3.5 | U |
| 50-29-3 | 4,4'-DDT | 3.5 | U |
| 72-43-5 | Methoxychlor | 18 | U |
| 53494-70-5 | Endrin ketone | 3.5 | U |
| 7421-36-3 | Endrin aldehyde | 3.5 | U |
| 5103-71-9 | alpha-Chlordane | 1.8 | U |
| 5103-74-2 | gamma-Chlordane | 1.8 | U |
| 8001-35-2 | Toxaphene | 180 | U |
| 12674-11-2 | Aroclor-1016 | 35 | U |
| 11104-28-2 | Aroclor-1221 | 70 | U |
| 11141-16-5 | Aroclor-1232 | 35 | U |
| 53469-21-9 | Aroclor-1242 | 35 | U |
| 12672-29-6 | Aroclor-1248 | 35 | U |
| 11097-69-1 | Aroclor-1254 | 35 | U |
| 11096-82-5 | Aroclor-1260 | 13 | JP |

000055

EPA SAMPLE NO.

CGG81

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SM0002 SAS No.: 7453C0 SDG No.: CGG72

Matrix: (soil/water) SOIL Lab Sample ID: 8251-1

Sample wt/vol: 30.4 (g/mL) G Lab File ID: _____

% Moisture: 8 decanted: (Y/N) N Date Received: 08/~~19~~ 20/92 HMR 11-20-92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 08/26/92

Concentrated Extract Volume: 500 (uL) Date Analyzed: 09/03/92

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 8.0 Sulfur Cleanup: (Y/N) N

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | 0.36 | U |
| 319-85-7 | beta-BHC | 0.36 | U |
| 319-86-8 | delta-BHC | 0.36 | U |
| 58-89-9 | gamma-BHC (Lindane) | 0.36 | U |
| 76-44-8 | Heptachlor | 0.36 | U |
| 309-00-2 | Aldrin | 0.36 | U |
| 1024-57-3 | Heptachlor epoxide | 0.36 | U |
| 959-98-8 | Endosulfan I | 0.36 | U |
| 60-57-1 | Dieldrin | 0.71 | U |
| 72-55-9 | 4,4'-DDE | 0.71 | U |
| 72-20-8 | Endrin | 0.71 | U |
| 33213-65-9 | Endosulfan II | 0.71 | U |
| 72-54-8 | 4,4'-DDD | 0.71 | U |
| 1031-07-8 | Endosulfan sulfate | 0.71 | U |
| 50-29-3 | 4,4'-DDT | 0.71 | U |
| 72-43-5 | Methoxychlor | 3.6 | U |
| 53494-70-5 | Endrin ketone | 0.71 | U |
| 7421-36-3 | Endrin aldehyde | 0.71 | U |
| 5103-71-9 | alpha-Chlordane | 0.36 | U |
| 5103-74-2 | gamma-Chlordane | 0.36 | U |
| 8001-35-2 | Toxaphene | 36 | U |
| 12674-11-2 | Aroclor-1016 | 7.1 | U |
| 11104-28-2 | Aroclor-1221 | 14 | U |
| 11141-16-5 | Aroclor-1232 | 7.1 | U |
| 53469-21-9 | Aroclor-1242 | 7.1 | U |
| 12672-29-6 | Aroclor-1248 | 7.1 | U |
| 11097-69-1 | Aroclor-1254 | 7.1 | U |
| 11096-82-5 | Aroclor-1260 | 7.1 | U |

COPY OF CORRECTED/Ammended Form I: 1D

Includes Reviewer's Additions.

# PESTICIDE ORGANICS ANALYSIS DATA SHEET

000055

EPA SAMPLE NO.

CGG81

Lab Name: PRECISION A L  Contract: _____

Lab Code: PRECIS  Case No.: SM0002  SAS No.: 7453C0  SDG No.: CGG72

Matrix: (soil/water) SOIL  Lab Sample ID: 8251-1

Sample wt/vol: 30.4 (g/mL) G  Lab File ID: _____

% Moisture: 8  decanted: (Y/N) N  Date Received: 08/~~19~~ 20/92  HMR 11-20-92

Extraction: (SepF/Cont/Sonc) SONC  Date Extracted: 08/26/92

Concentrated Extract Volume: 500 (uL)  Date Analyzed: 09/03/92

Injection Volume: 1.00 (uL)  Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y  pH: 8.0  Sulfur Cleanup: (Y/N) N

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | 0.36 | U |
| 319-85-7 | beta-BHC | 0.36 | U |
| 319-86-8 | delta-BHC | 0.36 | U |
| 58-89-9 | gamma-BHC (Lindane) | 0.36 | U |
| 76-44-8 | Heptachlor | 0.20 ~~0.36~~ | ~~U~~ J |
| 309-00-2 | Aldrin | 0.36 | U |
| 1024-57-3 | Heptachlor epoxide | 0.37 ~~0.36~~ | ~~U~~ J |
| 959-98-8 | Endosulfan I | 0.36 | U |
| 60-57-1 | Dieldrin | 0.71 | U |
| 72-55-9 | 4,4'-DDE | 0.20 ~~0.71~~ | ~~U~~ J |
| 72-20-8 | Endrin | 0.71 | U |
| 33213-65-9 | Endosulfan II | 0.71 | U |
| 72-54-8 | 4,4'-DDD | 0.71 | U |
| 1031-07-8 | Endosulfan sulfate | 0.71 | U |
| 50-29-3 | 4,4'-DDT | 0.71 | U |
| 72-43-5 | Methoxychlor | 3.6 | U |
| 53494-70-5 | Endrin ketone | 0.71 | U |
| 7421-36-3 | Endrin aldehyde | 0.71 | U |
| 5103-71-9 | alpha-Chlordane | 2.1 ~~0.36~~ | ~~U~~ J |
| 5103-74-2 | gamma-Chlordane | 1.8 ~~0.36~~ | ~~U~~ J |
| 8001-35-2 | Toxaphene | 36 | U |
| 12674-11-2 | Aroclor-1016 | 7.1 | U |
| 11104-28-2 | Aroclor-1221 | 14 | U |
| 11141-16-5 | Aroclor-1232 | 7.1 | U |
| 53469-21-9 | Aroclor-1242 | 7.1 | U |
| 12672-29-6 | Aroclor-1248 | 7.1 | U |
| 11097-69-1 | Aroclor-1254 | 7.1 | U |
| 11096-82-5 | Aroclor-1260 | 7.1 | U |

RS 12/31/92

000056

EPA SAMPLE NO.

CGG81RE

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SM0002 SAS No.: 7453C0 SDG No.: CGG72

Matrix: (soil/water) SOIL Lab Sample ID: 8251-1RE

Sample wt/vol: 30.6 (g/mL) G Lab File ID: _____

% Moisture: 8 decanted: (Y/N) N Date Received: 08/~~29~~ 20/92 HMR 11-20-12

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 09/16/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 09/19/92

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 8.0 Sulfur Cleanup: (Y/N) N

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | 3.6 | U |
| 319-85-7 | beta-BHC | 3.6 | U |
| 319-86-8 | delta-BHC | 3.6 | U |
| 58-89-9 | gamma-BHC (Lindane) | 3.6 | U |
| 76-44-8 | Heptachlor | 3.6 | U |
| 309-00-2 | Aldrin | 3.6 | U |
| 1024-57-3 | Heptachlor epoxide | 3.6 | U |
| 959-98-8 | Endosulfan I | 3.6 | U |
| 60-57-1 | Dieldrin | 7.0 | U |
| 72-55-9 | 4,4'-DDE | 7.0 | U |
| 72-20-8 | Endrin | 7.0 | U |
| 33213-65-9 | Endosulfan II | 7.0 | U |
| 72-54-8 | 4,4'-DDD | 7.0 | U |
| 1031-07-8 | Endosulfan sulfate | 7.0 | U |
| 50-29-3 | 4,4'-DDT | 7.0 | U |
| 72-43-5 | Methoxychlor | 36 | U |
| 53494-70-5 | Endrin ketone | 7.0 | U |
| 7421-36-3 | Endrin aldehyde | 7.0 | U |
| 5103-71-9 | alpha-Chlordane | 3.6 | U |
| 5103-74-2 | gamma-Chlordane | 3.6 | U |
| 8001-35-2 | Toxaphene | 360 | U |
| 12674-11-2 | Aroclor-1016 | 70 | U |
| 11104-28-2 | Aroclor-1221 | 140 | U |
| 11141-16-5 | Aroclor-1232 | 70 | U |
| 53469-21-9 | Aroclor-1242 | 70 | U |
| 12672-29-6 | Aroclor-1248 | 70 | U |
| 11097-69-1 | Aroclor-1254 | 70 | U |
| 11096-82-5 | Aroclor-1260 | 70 | U |

U.S. EPA - CLP
1

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MCHG09

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-00-0109

Lab Code: SKINER Case No.: 18622 SAS No.: SDG No.: MCHG09

Matrix (soil/water): SOIL Lab Sample ID: 08232-01S

Level (low/med): LOW Date Received: 08/20/92

% Solids: 72.1

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 10600 | | | P |
| 7440-36-0 | Antimony | 4.2 | U | N | P |
| 7440-38-2 | Arsenic | 11.7 | | S | F |
| 7440-39-3 | Barium | 95.7 | | | P |
| 7440-41-7 | Beryllium | 0.73 | B | | P |
| 7440-43-9 | Cadmium | 0.39 | U | | P |
| 7440-70-2 | Calcium | 4620 | | | P |
| 7440-47-3 | Chromium | 19.7 | | | P |
| 7440-48-4 | Cobalt | 16.7 | | | P |
| 7440-50-8 | Copper | 27.5 | | | P |
| 7439-89-6 | Iron | 30200 | | | P |
| 7439-92-1 | Lead | 31.3 | | | F |
| 7439-95-4 | Magnesium | 3560 | | | P |
| 7439-96-5 | Manganese | 1400 | | | P |
| 7439-97-6 | Mercury | 0.06 | U | N | CV |
| 7440-02-0 | Nickel | 26.9 | | | P |
| 7440-09-7 | Potassium | 995 | B | | P |
| 7782-49-2 | Selenium | 0.94 | U | N* | F |
| 7440-22-4 | Silver | 1.8 | B | | P |
| 7440-23-5 | Sodium | 115 | B | | P |
| 7440-28-0 | Thallium | 0.24 | U | | F |
| 7440-62-2 | Vanadium | 25.6 | | | P |
| 7440-66-6 | Zinc | 96.4 | | | P |
| | Cyanide | 0.69 | U | * | CA |

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: BROWN Clarity After: Artifacts: YES

Comments:
ROCKS

002

ref. 1
000059

2F
# SOIL PESTICIDE SURROGATE RECOVERY

Lab Name: PRECISION A L  Contract: _____

Lab Code: PRECIS  Case No.: SMO002  SAS No.: 7453C01  SDG No.: CGG72

GC Column(1): DB-608  ID: 0.53(mm)  GC Column(2): DB-1701  ID: 0.53(mm)

| | EPA SAMPLE NO. | TCX 1 %REC # | TCX 2 %REC # | DCB 1 %REC # | DCB 2 %REC # | OTHER (1) | OTHER (2) | TOT OUT |
|---|---|---|---|---|---|---|---|---|
| 01 | PBLK2 | 23* | 26* | 88 | 88 | | | 2 |
| 02 | PBLK3 | 7* | 9* | 13* | 25* | | | 4 |
| 03 | PBLK6 | 84 | 122 | 142 | 140 | | | 0 |
| 04 | PBLK7 | 94 | 103 | 81 | 81 | | | 0 |
| 05 | CART_CK | 65 | 35* | 89 | 92 | | | 1 |
| 06 | CGG72 | 6* | 8* | 11* | 15* | | | 4 |
| 07 | CGG72RE | 134 | 129 | 125 | 124 | | | 0 |
| 08 | CGG73 | 6* | 7* | 13* | 14* | | | 4 |
| 09 | CGG73RE | 120 | 113 | 138 | 122 | | | 0 |
| 10 | CGG79 | 46* | 51* | 111 | 112 | | | 2 |
| 11 | CGG79RE | 113 | 112 | 113 | 125 | | | 0 |
| 12 | CGG80 | 108 | 115 | 143 | 145 | | | 0 |
| 13 | CGG81 | 8* | 8* | 17* | 20* | | | 4 |
| 14 | CGG81RE | 150 | 126 | 147 | 134 | | | 0 |
| 15 | CGG73MSDRE | 123 | 111 | 126 | 123 | | | 0 |
| 16 | CGG73MSRE | 104 | 101 | 129 | 126 | | | 0 |
| 17 | CGG81MS | 7* | 10* | 16* | 16* | | | 4 |
| 18 | CGG81MSD | 10* | 12* | 20* | 24* | | | 4 |

| | ADVISORY QC LIMITS |
|---|---|
| TCX = Tetrachloro-m-xylene | ( 60-150) |
| DCB = Decachlorobiphenyl | ( 60-150) |

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

INITIAL EXTRACTIONS ALL VERY LOW Recoveries, except CGG79. Reextractions Done on all samples. Shows Lab extraction problem

3F

# SOIL PESTICIDE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: PRECISION_A_L Contract:

Lab Code: PRECIS Case No.: SMO002 SAS No.: 7453C0 SDG No.: CGG72

Matrix Spike - EPA Sample No.: CGG81

| COMPOUND | SPIKE ADDED (ug/Kg) | SAMPLE CONCENTRATION (ug/Kg) | MS CONCENTRATION (ug/Kg) | MS % REC # | QC LIMITS REC. |
|---|---|---|---|---|---|
| gamma-BHC (Lindane) | 14.400 | 0 | 0.290 | 2 * | 46-127 |
| Heptachlor | 14.400 | 0 | 0.813 | 6 * | 35-130 |
| Aldrin | 14.400 | 0 | 0.726 | 5 * | 34-132 |
| Dieldrin | 28.800 | 0 | 0.497 | 2 * | 31-134 |
| Endrin | 28.800 | 0 | 1.06 | 4 * | 42-139 |
| 4,4'-DDT | 28.800 | 0 | 2.24 | 8 * | 23-134 |

| COMPOUND | SPIKE ADDED (ug/Kg) | MSD CONCENTRATION (ug/Kg) | MSD % REC # | % RPD # | QC LIMITS RPD | QC LIMITS REC. |
|---|---|---|---|---|---|---|
| gamma-BHC (Lindane) | 14.400 | 0.388 | 3 * | 40 | 50 | 46-127 |
| Heptachlor | 14.400 | 1.20 | 8 * | 33 | 31 | 35-130 |
| Aldrin | 14.400 | 0.868 | 6 * | 18 | 43 | 34-132 |
| Dieldrin | 28.800 | 0.710 | 2 * | 0 | 38 | 31-134 |
| Endrin | 28.800 | 1.75 | 6 * | 40 | 45 | 42-139 |
| 4,4'-DDT | 28.800 | 3.66 | 13 * | 48 | 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: 12 out of 12 outside limits

initial Runs all Low Recoveries

COMMENTS:

FORM III PEST-2 3/90

No reliable pos. detections in this sample; no action

U.S. EPA - CLP
1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MCHG10

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0109

Lab Code: SKINER Case No.: 18622 SAS No.: SDG No.: MCHG09

Matrix (soil/water): SOIL Lab Sample ID: 08232-02S

Level (low/med): LOW Date Received: 08/20/92

% Solids: 77.3

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 6740 | | | P |
| 7440-36-0 | Antimony | 4.1 | U | N | P |
| 7440-38-2 | Arsenic | 8.9 | | S | F |
| 7440-39-3 | Barium | 102 | | | P |
| 7440-41-7 | Beryllium | 0.56 | B | | P |
| 7440-43-9 | Cadmium | 0.37 | U | | P |
| 7440-70-2 | Calcium | 103000 | | | P |
| 7440-47-3 | Chromium | 13.7 | | | P |
| 7440-48-4 | Cobalt | 6.2 | B | | P |
| 7440-50-8 | Copper | 15.4 | | | P |
| 7439-89-6 | Iron | 13900 | | | P |
| 7439-92-1 | Lead | 17.1 | | | F |
| 7439-95-4 | Magnesium | 4530 | | | P |
| 7439-96-5 | Manganese | 711 | | | P |
| 7439-97-6 | Mercury | 0.06 | U | N | CV |
| 7440-02-0 | Nickel | 13.0 | | | P |
| 7440-09-7 | Potassium | 2250 | | | P |
| 7782-49-2 | Selenium | 0.85 | U | N* | F |
| 7440-22-4 | Silver | 1.2 | U | | P |
| 7440-23-5 | Sodium | 382 | B | | P |
| 7440-28-0 | Thallium | 0.21 | U | W | F |
| 7440-62-2 | Vanadium | 14.8 | | | P |
| 7440-66-6 | Zinc | 55.4 | | | P |
| | Cyanide | 0.96 | | * | CA |

Color Before: BROWN Clarity Before: Texture: COARSE

Color After: BROWN Clarity After: Artifacts: YES

Comments:
ROCKS

003

# INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MCHG11

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0109

Lab Code: SKINER Case No.: 18622 SAS No.: SDG No.: MCHG09

Matrix (soil/water): SOIL Lab Sample ID: 08232-03S

Level (low/med): LOW Date Received: 08/20/92

% Solids: 73.9

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 15700 | | | P |
| 7440-36-0 | Antimony | 4.0 | U | N | P |
| 7440-38-2 | Arsenic | 5.0 | | S | F |
| 7440-39-3 | Barium | 149 | | | P |
| 7440-41-7 | Beryllium | 1.8 | | | P |
| 7440-43-9 | Cadmium | 0.37 | U | | P |
| 7440-70-2 | Calcium | 88200 | | | P |
| 7440-47-3 | Chromium | 24.4 | | | P |
| 7440-48-4 | Cobalt | 6.9 | B | | P |
| 7440-50-8 | Copper | 15.5 | | | P |
| 7439-89-6 | Iron | 14200 | | | P |
| 7439-92-1 | Lead | 13.9 | | | F |
| 7439-95-4 | Magnesium | 14400 | | | P |
| 7439-96-5 | Manganese | 2630 | | | P |
| 7439-97-6 | Mercury | 0.05 | U | N | CV |
| 7440-02-0 | Nickel | 15.6 | | | P |
| 7440-09-7 | Potassium | 2310 | | | P |
| 7782-49-2 | Selenium | 2.3 | | +N* | F |
| 7440-22-4 | Silver | 1.2 | U | | P |
| 7440-23-5 | Sodium | 584 | B | | P |
| 7440-28-0 | Thallium | 0.23 | U | | F |
| 7440-62-2 | Vanadium | 20.7 | | | P |
| 7440-66-6 | Zinc | 59.5 | | | P |
| | Cyanide | 0.89 | | * | CA |

Color Before: BROWN Clarity Before: Texture: COARSE

Color After: BROWN Clarity After: Artifacts: YES

Comments:
ROCKS

00

# INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MCHG18

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0109

Lab Code: SKINER Case No.: 18622 SAS No.: SDG No.: MCHG09

Matrix (soil/water): SOIL Lab Sample ID: 08232-04S

Level (low/med): LOW Date Received: 08/20/92

% Solids: 67.2

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 10400 | | | P |
| 7440-36-0 | Antimony | 4.8 | U | N | P |
| 7440-38-2 | Arsenic | 8.7 | | | F |
| 7440-39-3 | Barium | 186 | | | P |
| 7440-41-7 | Beryllium | 1.3 | B | | P |
| 7440-43-9 | Cadmium | 0.44 | U | | P |
| 7440-70-2 | Calcium | 25200 | | | P |
| 7440-47-3 | Chromium | 21.8 | | | P |
| 7440-48-4 | Cobalt | 8.8 | B | | P |
| 7440-50-8 | Copper | 43.7 | | | P |
| 7439-89-6 | Iron | 22000 | | | P |
| 7439-92-1 | Lead | 243 | | S | F |
| 7439-95-4 | Magnesium | 4790 | | | P |
| 7439-96-5 | Manganese | 992 | | | P |
| 7439-97-6 | Mercury | 0.34 | | N | CV |
| 7440-02-0 | Nickel | 20.1 | | | P |
| 7440-09-7 | Potassium | 1250 | B | | P |
| 7782-49-2 | Selenium | 1.9 | | +N* | F |
| 7440-22-4 | Silver | 1.5 | B | | P |
| 7440-23-5 | Sodium | 286 | B | | P |
| 7440-28-0 | Thallium | 0.28 | B | | F |
| 7440-62-2 | Vanadium | 20.5 | | | P |
| 7440-66-6 | Zinc | 201 | | | P |
| | Cyanide | 6.0 | | * | CA |

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: BROWN Clarity After: Artifacts: YES

Comments:
ROCKS, LEAVES

005

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MCHG19

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0109

Lab Code: SKINER Case No.: 18622 SAS No.: SDG No.: MCHG09

Matrix (soil/water): SOIL Lab Sample ID: 08232-05S

Level (low/med): LOW Date Received: 08/20/92

% Solids: 79.8

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 10900 | | | P |
| 7440-36-0 | Antimony | 3.8 | U | N | P |
| 7440-38-2 | Arsenic | 8.3 | | | F |
| 7440-39-3 | Barium | 93.6 | | | P |
| 7440-41-7 | Beryllium | 1.1 | B | | P |
| 7440-43-9 | Cadmium | 0.35 | U | | P |
| 7440-70-2 | Calcium | 15800 | | | P |
| 7440-47-3 | Chromium | 21.0 | | | P |
| 7440-48-4 | Cobalt | 17.7 | | | P |
| 7440-50-8 | Copper | 20.2 | | | P |
| 7439-89-6 | Iron | 35600 | | | P |
| 7439-92-1 | Lead | 39.1 | | S | F |
| 7439-95-4 | Magnesium | 4620 | | | P |
| 7439-96-5 | Manganese | 926 | | | P |
| 7439-97-6 | Mercury | 0.05 | U | N | CV |
| 7440-02-0 | Nickel | 31.9 | | | P |
| 7440-09-7 | Potassium | 1420 | | | P |
| 7782-49-2 | Selenium | 0.88 | U | MN* | F |
| 7440-22-4 | Silver | 1.7 | B | | P |
| 7440-23-5 | Sodium | 124 | B | | P |
| 7440-28-0 | Thallium | 0.89 | B | W | F |
| 7440-62-2 | Vanadium | 24.9 | | | P |
| 7440-66-6 | Zinc | 129 | | | P |
| | Cyanide | 0.57 | U | * | CA |

Color Before: BROWN Clarity Before: Texture: COARSE

Color After: BROWN Clarity After: Artifacts: YES

Comments:
ROCKS

006

# INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MCHG20

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0109

Lab Code: SKINER Case No.: 18622 SAS No.: SDG No.: MCHG09

Matrix (soil/water): SOIL Lab Sample ID: 08232-06S

Level (low/med): LOW Date Received: 08/20/92

% Solids: 81.7

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 7930 | | | P |
| 7440-36-0 | Antimony | 3.7 | U | N | P |
| 7440-38-2 | Arsenic | 8.6 | | S | F |
| 7440-39-3 | Barium | 31.2 | B | | P |
| 7440-41-7 | Beryllium | 0.24 | B | | P |
| 7440-43-9 | Cadmium | 0.34 | U | | P |
| 7440-70-2 | Calcium | 871 | B | | P |
| 7440-47-3 | Chromium | 18.0 | | | P |
| 7440-48-4 | Cobalt | 9.1 | B | | P |
| 7440-50-8 | Copper | 15.7 | | | P |
| 7439-89-6 | Iron | 21800 | | | P |
| 7439-92-1 | Lead | 41.4 | | | F |
| 7439-95-4 | Magnesium | 1860 | | | P |
| 7439-96-5 | Manganese | 598 | | | P |
| 7439-97-6 | Mercury | 0.09 | B | N | CV |
| 7440-02-0 | Nickel | 17.0 | | | P |
| 7440-09-7 | Potassium | 604 | B | | P |
| 7782-49-2 | Selenium | 0.92 | B | N* | F |
| 7440-22-4 | Silver | 1.4 | B | | P |
| 7440-23-5 | Sodium | 36.3 | B | | P |
| 7440-28-0 | Thallium | 0.21 | U | | F |
| 7440-62-2 | Vanadium | 20.9 | | | P |
| 7440-66-6 | Zinc | 73.2 | | | P |
| _____ | Cyanide | 0.61 | U | * | CA |

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts: YES

Comments:
ROCKS, ROOTS

007

# INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MCHG21

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0109

Lab Code: SKINER Case No.: 18622 SAS No.: SDG No.: MCHG09

Matrix (soil/water): SOIL Lab Sample ID: 08232-075

Level (low/med): LOW Date Received: 08/20/92

% Solids: 75.1

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 10900 | | | P |
| 7440-36-0 | Antimony | 4.0 | U | N | P |
| 7440-38-2 | Arsenic | 26.8 | | + | F |
| 7440-39-3 | Barium | 77.9 | | | P |
| 7440-41-7 | Beryllium | 0.89 | B | | P |
| 7440-43-9 | Cadmium | 0.37 | U | | P |
| 7440-70-2 | Calcium | 3810 | | | P |
| 7440-47-3 | Chromium | 19.6 | | | P |
| 7440-48-4 | Cobalt | 16.1 | | | P |
| 7440-50-8 | Copper | 34.4 | | | P |
| 7439-89-6 | Iron | 28000 | | | P |
| 7439-92-1 | Lead | 71.3 | | | F |
| 7439-95-4 | Magnesium | 2700 | | | P |
| 7439-96-5 | Manganese | 1240 | | | P |
| 7439-97-6 | Mercury | 0.16 | | N | CV |
| 7440-02-0 | Nickel | 29.6 | | | P |
| 7440-09-7 | Potassium | 1960 | | | P |
| 7782-49-2 | Selenium | 1.5 | | SN* | F |
| 7440-22-4 | Silver | 1.8 | B | | P |
| 7440-23-5 | Sodium | 77.7 | B | | P |
| 7440-28-0 | Thallium | 0.91 | B | | F |
| 7440-62-2 | Vanadium | 22.2 | | | P |
| 7440-66-6 | Zinc | 161 | | | P |
| | Cyanide | 0.66 | U | * | CA |

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts: YES

Comments:
ROCKS

008

1C

# SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CGG82

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: _____ SDG No.: CGG70

Matrix: (soil/water) WATER Lab Sample ID: 9207965

Sample wt/vol: 1000 (g/mL) ML Lab File ID: E2963

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 08/24/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/27/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 51-28-5 | 2,4-Dinitrophenol | 25 | U |
| 100-02-7 | 4-Nitrophenol | 25 | 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-phenylether | 10 | U |
| 86-73-7 | Fluorene | 10 | U |
| 100-01-6 | 4-Nitroaniline | 25 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 25 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 10 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 10 | U |
| 118-74-1 | Hexachlorobenzene | 10 | U |
| 87-86-5 | Pentachlorophenol | 25 | U |
| 85-01-8 | Phenanthrene | 10 | U |
| 120-12-7 | Anthracene | 10 | U |
| 86-74-8 | Carbazole | 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 | 10 | U |
| 56-55-3 | Benzo(a)anthracene | 10 | U |
| 218-01-9 | Chrysene | 10 | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 0.8 | J |
| 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

# SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

CGG82

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: _____ SDG No.: CGG70

Matrix: (soil/water) WATER Lab Sample ID: 9207965

Sample wt/vol: 1000 (g/mL) ML Lab File ID: E2963

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 08/24/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/27/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.0

Number TICs found: 7

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | UNKNOWN | 6.71 | 2 | JNB |
| 2. | UNKNOWN | 28.54 | 2 | JN |
| 3. | UNKNOWN | 28.67 | 10 | JN |
| 4. | UNKNOWN | 31.81 | 19 | JN |
| 5. | UNKNOWN | 34.66 | 28 | JN |
| 6. | UNKNOWN | 38.11 | 30 | JN |
| 7. | UNKNOWN | 43.13 | 33 | JN |

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CGG83

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18822 SAS No.: _____ SDG No.: CGG70

Matrix: (soil/water) WATER Lab Sample ID: 9207966

Sample wt/vol: 1000 (g/mL) ML Lab File ID: E2966

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 08/24/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/27/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.0

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

| CAS NO. | COMPOUND | | 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 |
| 95-50-1 | 1,2-Dichlorobenzene | 10 | U |
| 95-48-7 | 2-Methylphenol | 10 | U |
| 108-60-1 | 2,2'-oxybis(1-Chloropropane) | 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 |
| 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 | 25 | U |
| 91-58-7 | 2-Chloronaphthalene | 10 | U |
| 88-74-4 | 2-Nitroaniline | 25 | U |
| 131-11-3 | Dimethylphthalate | 10 | U |
| 208-96-8 | Acenaphthylene | 10 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 10 | U |
| 99-09-2 | 3-Nitroaniline | 25 | U |
| 83-32-9 | Acenaphthene | 10 | U |

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CGG83

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: _____ SDG No.: CGG70

Matrix: (soil/water) WATER Lab Sample ID: 9207966

Sample wt/vol: 1000 (g/mL) ML Lab File ID: E2966

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 08/24/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/27/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 51-28-5 | 2,4-Dinitrophenol | 25 | U |
| 100-02-7 | 4-Nitrophenol | 25 | 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-phenylether | 10 | U |
| 86-73-7 | Fluorene | 10 | U |
| 100-01-6 | 4-Nitroaniline | 25 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 25 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 10 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 10 | U |
| 118-74-1 | Hexachlorobenzene | 10 | U |
| 87-86-5 | Pentachlorophenol | 25 | U |
| 85-01-8 | Phenanthrene | 10 | U |
| 120-12-7 | Anthracene | 10 | U |
| 86-74-8 | Carbazole | 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 | 10 | 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

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CGG83

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: SDG No.: CGG70

Matrix: (soil/water) WATER Lab Sample ID: 9207966

Sample wt/vol: 1020 (g/mL) ML Lab File ID:

% Moisture: decanted: (Y/N) Date Received: 08/20/92

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/24/92

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 09/09/92

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 6.0 Sulfur Cleanup: (Y/N) N

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | 0.049 | U |
| 319-85-7 | beta-BHC | 0.049 | U |
| 319-86-8 | delta-BHC | 0.049 | U |
| 58-89-9 | gamma-BHC (Lindane) | 0.049 | U |
| 76-44-8 | Heptachlor | 0.049 | U |
| 309-00-2 | Aldrin | 0.049 | U |
| 1024-57-3 | Heptachlor epoxide | 0.049 | U |
| 959-98-8 | Endosulfan I | 0.049 | U |
| 60-57-1 | Dieldrin | 0.098 | U |
| 72-55-9 | 4,4'-DDE | 0.098 | U |
| 72-20-8 | Endrin | 0.098 | U |
| 33213-65-9 | Endosulfan II | 0.098 | U |
| 72-54-8 | 4,4'-DDD | 0.098 | U |
| 1031-07-8 | Endosulfan sulfate | 0.098 | U |
| 50-29-3 | 4,4'-DDT | 0.098 | U |
| 72-43-5 | Methoxychlor | 0.49 | U |
| 53494-70-5 | Endrin ketone | 0.098 | U |
| 7421-36-3 | Endrin aldehyde | 0.098 | U |
| 5103-71-9 | alpha-Chlordane | 0.049 | U |
| 5103-74-2 | gamma-Chlordane | 0.049 | U |
| 8001-35-2 | Toxaphene | 4.9 | U |
| 12674-11-2 | Aroclor-1016 | 0.98 | U |
| 11104-28-2 | Aroclor-1221 | 2.0 | U |
| 11141-16-5 | Aroclor-1232 | 0.98 | U |
| 53469-21-9 | Aroclor-1242 | 0.98 | U |
| 12672-29-6 | Aroclor-1248 | 0.98 | U |
| 11097-69-1 | Aroclor-1254 | 0.98 | U |
| 11096-82-5 | Aroclor-1260 | 0.98 | U |

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CGG84

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: SDG No.: CGG70

Matrix: (soil/water) WATER Lab Sample ID: 9207967

Sample wt/vol: 1020 (g/mL) ML Lab File ID:

% Moisture: decanted: (Y/N) Date Received: 08/20/92

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/24/92

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 09/09/92

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 6.5 Sulfur Cleanup: (Y/N) N

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | 0.049 | U |
| 319-85-7 | beta-BHC | 0.049 | U |
| 319-86-8 | delta-BHC | 0.049 | U |
| 58-89-9 | gamma-BHC (Lindane) | 0.049 | U |
| 76-44-8 | Heptachlor | 0.049 | U |
| 309-00-2 | Aldrin | 0.049 | U |
| 1024-57-3 | Heptachlor epoxide | 0.049 | U |
| 959-98-8 | Endosulfan I | 0.049 | U |
| 60-57-1 | Dieldrin | 0.0083 | JP |
| 72-55-9 | 4,4'-DDE | 0.098 | U |
| 72-20-8 | Endrin | 0.098 | U |
| 33213-65-9 | Endosulfan II | 0.098 | U |
| 72-54-8 | 4,4'-DDD | 0.098 | U |
| 1031-07-8 | Endosulfan sulfate | 0.098 | U |
| 50-29-3 | 4,4'-DDT | 0.098 | U |
| 72-43-5 | Methoxychlor | 0.49 | U |
| 53494-70-5 | Endrin ketone | 0.098 | U |
| 7421-36-3 | Endrin aldehyde | 0.098 | U |
| 5103-71-9 | alpha-Chlordane | 0.049 | U |
| 5103-74-2 | gamma-Chlordane | 0.049 | U |
| 8001-35-2 | Toxaphene | 4.9 | U |
| 12674-11-2 | Aroclor-1016 | 0.98 | U |
| 11104-28-2 | Aroclor-1221 | 2.0 | U |
| 11141-16-5 | Aroclor-1232 | 0.98 | U |
| 53469-21-9 | Aroclor-1242 | 0.98 | U |
| 12672-29-6 | Aroclor-1248 | 0.98 | U |
| 11097-69-1 | Aroclor-1254 | 0.98 | U |
| 11096-82-5 | Aroclor-1260 | 0.98 | U |

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

CGG83

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: _____ SDG No.: CGG70

Matrix: (soil/water) WATER Lab Sample ID: 9207966

Sample wt/vol: 1000 (g/mL) ML Lab File ID: E2966

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 08/24/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/27/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.0

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | UNKNOWN | 6.70 | 6 | JNB |
| 2. | UNKNOWN | 34.08 | 34 | JN |

1B

# SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CGG84

Lab Name: HYGIENIC LAB  Contract: 68-D0-0154

Lab Code: IOWA  Case No.: 18622  SAS No.:  SDG No.: CGG70

Matrix: (soil/water) WATER  Lab Sample ID: 9207967

Sample wt/vol: 1000 (g/mL) ML  Lab File ID: E2967

Level: (low/med) LOW  Date Received: 08/20/92

% Moisture: decanted: (Y/N)  Date Extracted: 08/24/92

Concentrated Extract Volume: 1000 (uL)  Date Analyzed: 08/28/92

Injection Volume: 2.0(uL)  Dilution Factor: 1.0

GPC Cleanup: (Y/N) N  pH: 6.0

| 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 | 5 | J |
| 95-50-1 | 1,2-Dichlorobenzene | 10 | U |
| 95-48-7 | 2-Methylphenol | 2 | J |
| 108-60-1 | 2,2'-oxybis(1-Chloropropane) | 10 | U |
| 106-44-5 | 4-Methylphenol | 3 | J |
| 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 | 2 | J |
| 111-91-1 | bis(2-Chloroethoxy)methane | 10 | U |
| 120-83-2 | 2,4-Dichlorophenol | 6 | J |
| 120-82-1 | 1,2,4-Trichlorobenzene | 6 | J |
| 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 | 5 | J |
| 95-95-4 | 2,4,5-Trichlorophenol | 3 | J |
| 91-58-7 | 2-Chloronaphthalene | 10 | U |
| 88-74-4 | 2-Nitroaniline | 25 | U |
| 131-11-3 | Dimethylphthalate | 10 | U |
| 208-96-8 | Acenaphthylene | 10 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 10 | U |
| 99-09-2 | 3-Nitroaniline | 25 | U |
| 83-32-9 | Acenaphthene | 10 | U |

HPECC DB1701 WB CAP 1.0uL INJ

R4.9

Sample Name : 9207971
FileName : J:\DATA\C248023.raw
Method : hpec3.ins
Start Time : 0.01 min
Scale Factor: 0

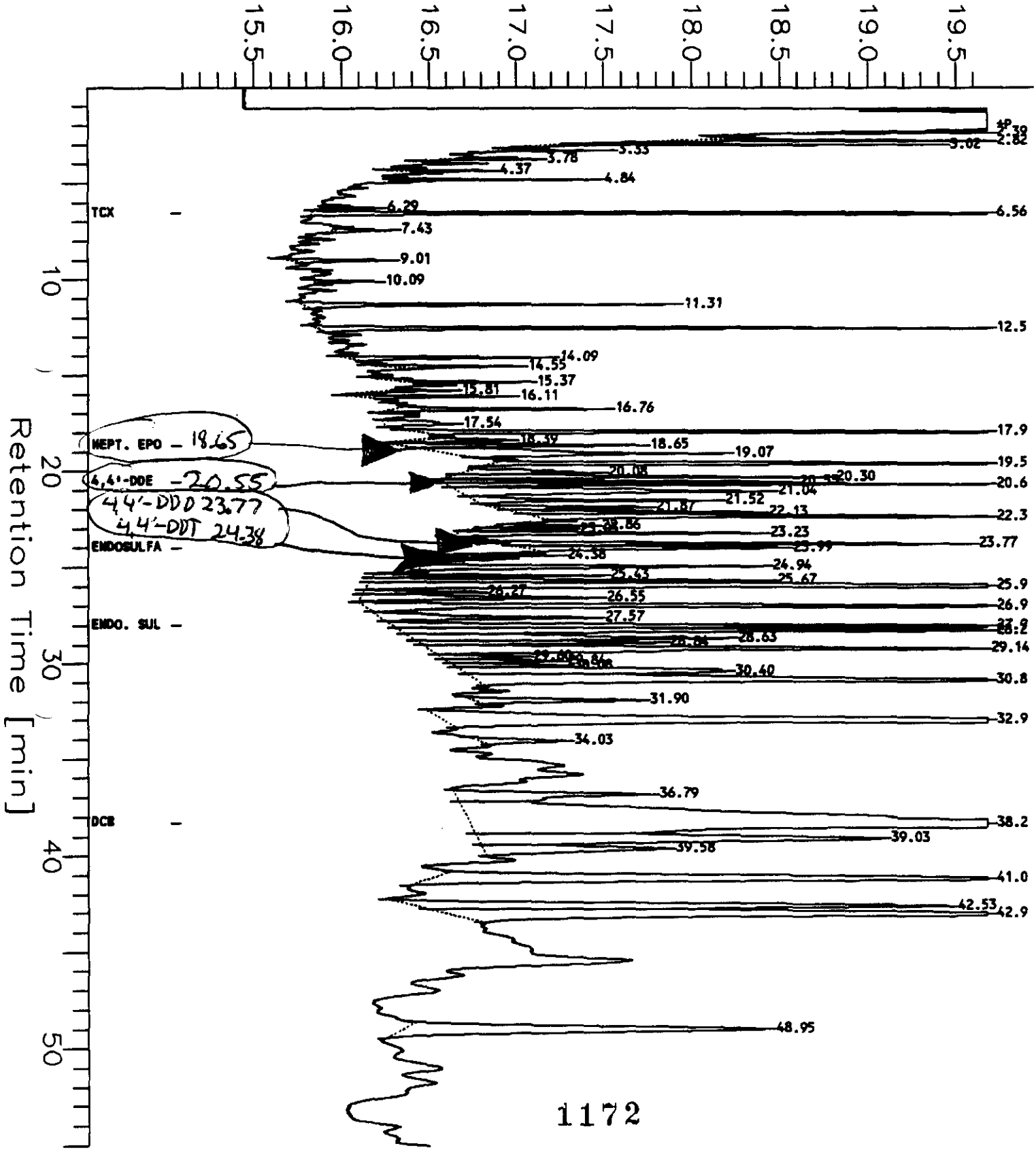
End Time : 55.00 min
Plot Offset: 15 mV

Sample #: CCG88
Date : 9/9/92 9:18 AM
Time of Injection: 9/5/92 12:23 PM
Low Point : 15.09 mV
Plot Scale: 5 mV

High Point : 19.68 mV

Page 1 of 1

CGG88 - (Possible FALSE Positives - Many Interferences)



HPECC DB1701 WB CAP 1.0uL INJ

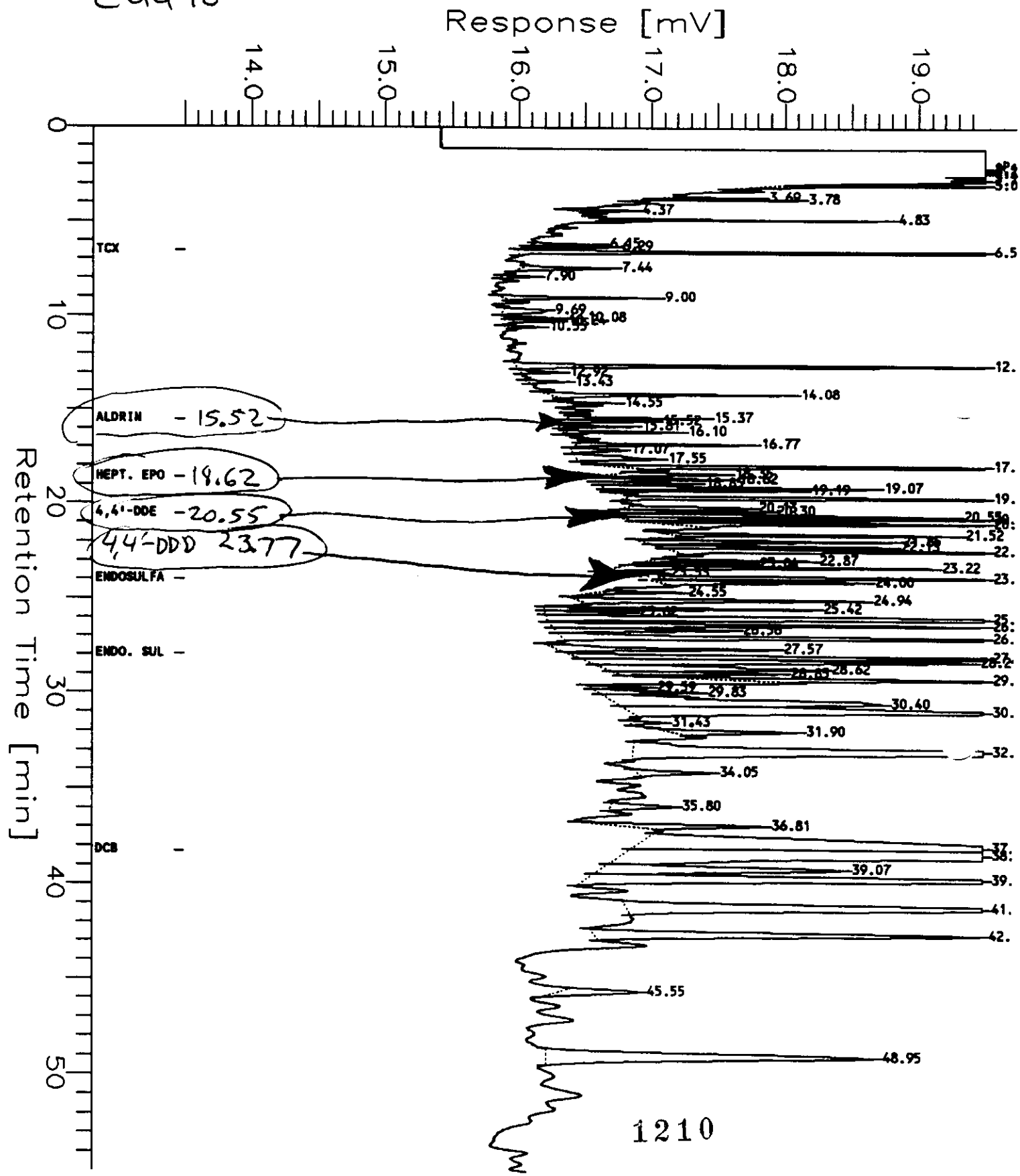
Ref. 9



Sample Name : 9207973
FileName : J:\DATA\C248025.raw
Method : hpec3.ins
Start Time : 0.00 min End Time : 55.00 min
Scale Factor: 0 Plot Offset: 14 mV

Sample #: CCG90
Date : 9/9/92 8:54 AM
Time of Injection: 9/5/92 ~~2:31 PM~~ 14:31 9/10/92
Low Point : 13.50 mV High Point : 19.50 mV
Plot Scale: 6 mV

CGG90




1210

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CGG84

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: SDG No.: CGG70

Matrix: (soil/water) WATER Lab Sample ID: 9207967

Sample wt/vol: 1000 (g/mL) ML Lab File ID: E2967

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: decanted: (Y/N) Date Extracted: 08/24/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/28/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 51-28-5 | 2,4-Dinitrophenol | 25 | U |
| 100-02-7 | 4-Nitrophenol | 25 | 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-phenylether | 10 | U |
| 86-73-7 | Fluorene | 10 | U |
| 100-01-6 | 4-Nitroaniline | 25 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 25 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 10 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 10 | U |
| 118-74-1 | Hexachlorobenzene | 10 | U |
| 87-86-5 | Pentachlorophenol | 25 | U |
| 85-01-8 | Phenanthrene | 10 | U |
| 120-12-7 | Anthracene | 10 | U |
| 86-74-8 | Carbazole | 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 | 10 | 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

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CGG84

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: SDG No.: CGG70

Matrix: (soil/water) WATER Lab Sample ID: 9207967

Sample wt/vol: 1000 (g/mL) ML Lab File ID: E2967

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: decanted: (Y/N) Date Extracted: 08/24/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/28/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.0

Number TICs found: 22

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | UNKNOWN | 13.43 | 10 | JN |
| 2. 95158 | Benzo[b]thiophene | 15.09 | 12 | JN |
| 3. | UNKNOWN | 16.41 | 10 | JN |
| 4. | UNKNOWN | 17.23 | 6 | JN |
| 5. 85449 | Phthalic anhydride (8CI) | 17.42 | 28 | JN |
| 6. 85416 | 1H-Isoindole-1,3(2H)-dione | 20.23 | 4 | JN |
| 7. | UNKNOWN | 21.83 | 6 | JN |
| 8. | UNKNOWN | 22.14 | 8 | JN |
| 9. | UNKNOWN | 23.63 | 4 | JN |
| 10. | UNKNOWN | 24.14 | 8 | JN |
| 11. | UNKNOWN | 25.75 | 4 | JN |
| 12. | UNKNOWN | 30.24 | 4 | JN |
| 13. 84651 | 9,10-Anthracenedione | 31.01 | 14 | JN |
| 14. | UNKNOWN | 32.24 | 14 | JN |
| 15. | UNKNOWN | 32.70 | 3 | JN |
| 16. | UNKNOWN | 32.85 | 6 | JN |
| 17. | UNKNOWN | 33.13 | 20 | JN |
| 18. | UNKNOWN | 33.23 | 4 | JN |
| 19 482235 | 1(3H)-Isobenzofuranone, 3-(3 | 33.55 | 4 | JN |
| 20. | UNKNOWN | 34.03 | 50 | JN |
| 21. 482235 | 1(3H)-Isobenzofuranone, 3-(3 | 34.67 | 6 | JN |
| 22. | UNKNOWN | 35.16 | 4 | JN |

10A
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

Ref. 10

EPA SAMPLE NO.

CGG84

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: SDG No.: CGG70

Lab Sample ID : 9207967 Dates(s) Analyzed: 09/09/92 09/09/92

Instrument ID (1): HPECC Instrument ID (2): HPECD

GC Column(1): RTX-1701 ID: 0.53(mm) GC Column(2): RTX-50 ID: 0.53(mm)

| ANALYTE | COL | RT | RT WINDOW FROM | RT WINDOW TO | CONCENTRATION | %D |
|---|---|---|---|---|---|---|
| Dieldrin | 1 | 21.16 | 21.09 | 21.23 | 0.0083 | |
| | 2 | 22.84 | 22.77 | 22.91 | 0.011 | 32.5 |

10A

PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

Ref. 10

EPA SAMPLE NO.

CGG85

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: SDG No.: CGG70

Lab Sample ID : 9207968 Dates(s) Analyzed: 09/09/92 09/09/92

Instrument ID (1): HPECC Instrument ID (2): HPECD

GC Column(1): RTX-1701 ID: 0.53(mm) GC Column(2): RTX-50 ID: 0.53(mm)

| ANALYTE | COL | RT | RT WINDOW FROM | RT WINDOW TO | CONCENTRATION | %D |
|---|---|---|---|---|---|---|
| Endosulfan II | 1 | 23.93 | edge 23.93 | 24.07 | 0.019 | |
| | 2 | 25.71 | 25.60 | 25.74 | 0.015 | 26.7 |
| 4,4'-DDD | 1 | 23.69 | 23.66 | 23.80 | 0.031 | |
| | 2 | 24.98 | 24.91 | 25.05 | 0.53 | 999.9 |

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CGG85

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: _____ SDG No.: CGG70

Matrix: (soil/water) WATER Lab Sample ID: 9207968

Sample wt/vol: 1000 (g/mL) ML Lab File ID: E2968

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 08/24/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/28/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.0

| 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 |
| 95-50-1 | 1,2-Dichlorobenzene | 10 | U |
| 95-48-7 | 2-Methylphenol | 10 | U |
| 108-60-1 | 2,2'-oxybis(1-Chloropropane) | 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 |
| 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 | 25 | U |
| 91-58-7 | 2-Chloronaphthalene | 10 | U |
| 88-74-4 | 2-Nitroaniline | 25 | U |
| 131-11-3 | Dimethylphthalate | 10 | U |
| 208-96-8 | Acenaphthylene | 10 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 10 | U |
| 99-09-2 | 3-Nitroaniline | 25 | U |
| 83-32-9 | Acenaphthene | 10 | U |

1C

# SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CGG85

Lab Name: HYGIENIC LAB  Contract: 68-D0-0154

Lab Code: IOWA  Case No.: 18622  SAS No.: _____  SDG No.: CGG70

Matrix: (soil/water) WATER  Lab Sample ID: 9207968

Sample wt/vol: 1000 (g/mL) ML  Lab File ID: E2968

Level: (low/med) LOW  Date Received: 08/20/92

% Moisture: _____ decanted: (Y/N) ___  Date Extracted: 08/24/92

Concentrated Extract Volume: 1000 (uL)  Date Analyzed: 08/28/92

Injection Volume: 2.0(uL)  Dilution Factor: 1.0

GPC Cleanup: (Y/N) N  pH: 6.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 51-28-5 | 2,4-Dinitrophenol | 25 | U |
| 100-02-7 | 4-Nitrophenol | 25 | 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-phenylether | 10 | U |
| 86-73-7 | Fluorene | 10 | U |
| 100-01-6 | 4-Nitroaniline | 25 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 25 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 10 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 10 | U |
| 118-74-1 | Hexachlorobenzene | 10 | U |
| 87-86-5 | Pentachlorophenol | 25 | U |
| 85-01-8 | Phenanthrene | 10 | U |
| 120-12-7 | Anthracene | 10 | U |
| 86-74-8 | Carbazole | 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 | 10 | U |
| 56-55-3 | Benzo(a)anthracene | 10 | U |
| 218-01-9 | Chrysene | 10 | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 2 | J |
| 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

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

CGG85

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: _____ SDG No.: CGG70

Matrix: (soil/water) WATER Lab Sample ID: 9207968

Sample wt/vol: 1000 (g/mL) ML Lab File ID: E2968

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 08/24/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/28/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.0

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | UNKNOWN | 6.72 | 2 | JNB |
| 2. | UNKNOWN | 8.35 | 2 | JN |

1B

# SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CGG86

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: _____ SDG No.: CGG70

Matrix: (soil/water) SOIL Lab Sample ID: 9207969

Sample wt/vol: 30.1 (g/mL) G Lab File ID: E2974

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: 32 decanted: (Y/N) N Date Extracted: 08/25/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 08/28/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.8

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 480 | U |
| 111-44-4 | bis(2-Chloroethyl)ether | 480 | U |
| 95-57-8 | 2-Chlorophenol | 480 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 51 | J |
| 106-46-7 | 1,4-Dichlorobenzene | 180 | J |
| 95-50-1 | 1,2-Dichlorobenzene | 480 | U |
| 95-48-7 | 2-Methylphenol | 480 | U |
| 108-60-1 | 2,2'-oxybis(1-Chloropropane) | 480 | U |
| 106-44-5 | 4-Methylphenol | 480 | U |
| 621-64-7 | N-Nitroso-di-n-propylamine | 480 | U |
| 67-72-1 | Hexachloroethane | 480 | U |
| 98-95-3 | Nitrobenzene | 480 | U |
| 78-59-1 | Isophorone | 480 | U |
| 88-75-5 | 2-Nitrophenol | 480 | U |
| 105-67-9 | 2,4-Dimethylphenol | 480 | U |
| 111-91-1 | bis(2-Chloroethoxy)methane | 480 | U |
| 120-83-2 | 2,4-Dichlorophenol | 480 | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 760 | |
| 91-20-3 | Naphthalene | 300 | J |
| 106-47-8 | 4-Chloroaniline | 480 | U |
| 87-68-3 | Hexachlorobutadiene | 480 | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 480 | U |
| 91-57-6 | 2-Methylnaphthalene | 220 | J |
| 77-47-4 | Hexachlorocyclopentadiene | 480 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 480 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 1200 | U |
| 91-58-7 | 2-Chloronaphthalene | 480 | U |
| 88-74-4 | 2-Nitroaniline | 1200 | U |
| 131-11-3 | Dimethylphthalate | 480 | U |
| 208-96-8 | Acenaphthylene | 240 | J |
| 606-20-2 | 2,6-Dinitrotoluene | 480 | U |
| 99-09-2 | 3-Nitroaniline | 1200 | U |
| 83-32-9 | Acenaphthene | 250 | J |

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CGG85

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: SDG No.: CGG70

Matrix: (soil/water) WATER Lab Sample ID: 9207968

Sample wt/vol: 1020 (g/mL) ML Lab File ID:

% Moisture: decanted: (Y/N) Date Received: 08/20/92

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/24/92

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 09/09/92

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 6.5 Sulfur Cleanup: (Y/N) N

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | 0.049 | U |
| 319-85-7 | beta-BHC | 0.049 | U |
| 319-86-8 | delta-BHC | 0.049 | U |
| 58-89-9 | gamma-BHC (Lindane) | 0.049 | U |
| 76-44-8 | Heptachlor | 0.049 | U |
| 309-00-2 | Aldrin | 0.049 | U |
| 1024-57-3 | Heptachlor epoxide | 0.049 | U |
| 959-98-8 | Endosulfan I | 0.049 | U |
| 60-57-1 | Dieldrin | 0.098 | U |
| 72-55-9 | 4,4'-DDE | 0.098 | U |
| 72-20-8 | Endrin | 0.098 | U |
| 33213-65-9 | Endosulfan II | 0.015 | JP |
| 72-54-8 | 4,4'-DDD | 0.031 | JP |
| 1031-07-8 | Endosulfan sulfate | 0.098 | U |
| 50-29-3 | 4,4'-DDT | 0.098 | U |
| 72-43-5 | Methoxychlor | 0.49 | U |
| 53494-70-5 | Endrin ketone | 0.098 | U |
| 7421-36-3 | Endrin aldehyde | 0.098 | U |
| 5103-71-9 | alpha-Chlordane | 0.049 | U |
| 5103-74-2 | gamma-Chlordane | 0.049 | U |
| 8001-35-2 | Toxaphene | 4.9 | U |
| 12674-11-2 | Aroclor-1016 | 0.98 | U |
| 11104-28-2 | Aroclor-1221 | 2.0 | U |
| 11141-16-5 | Aroclor-1232 | 0.98 | U |
| 53469-21-9 | Aroclor-1242 | 0.98 | U |
| 12672-29-6 | Aroclor-1248 | 0.98 | U |
| 11097-69-1 | Aroclor-1254 | 0.98 | U |
| 11096-82-5 | Aroclor-1260 | 0.98 | U |

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CGG86

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: SDG No.: CGG70

Matrix: (soil/water) SOIL Lab Sample ID: 9207969

Sample wt/vol: 30.4 (g/mL) G Lab File ID:

% Moisture: 32 decanted: (Y/N) N Date Received: 08/20/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 08/24/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 09/03/92

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 7.8 Sulfur Cleanup: (Y/N) N

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | 2.5 | U |
| 319-85-7 | beta-BHC | 2.5 | UX |
| 319-86-8 | delta-BHC | 2.5 | U |
| 58-89-9 | gamma-BHC (Lindane) | 2.5 | U |
| 76-44-8 | Heptachlor | 2.5 | U |
| 309-00-2 | Aldrin | 6.9 | P |
| 1024-57-3 | Heptachlor epoxide | 2.5 | P |
| 959-98-8 | Endosulfan I | 2.5 | U |
| 60-57-1 | Dieldrin | 4.8 | U |
| 72-55-9 | 4,4'-DDE | 4.8 | U |
| 72-20-8 | Endrin | 4.8 | U |
| 33213-65-9 | Endosulfan II | 4.8 | U |
| 72-54-8 | 4,4'-DDD | 13 | P |
| 1031-07-8 | Endosulfan sulfate | 1.5 | JP |
| 50-29-3 | 4,4'-DDT | 1.3 | JP |
| 72-43-5 | Methoxychlor | 25 | U |
| 53494-70-5 | Endrin ketone | 4.8 | U |
| 7421-36-3 | Endrin aldehyde | 4.8 | U |
| 5103-71-9 | alpha-Chlordane | 8.8 | P |
| 5103-74-2 | gamma-Chlordane | 8.7 | P |
| 8001-35-2 | Toxaphene | 250 | U |
| 12674-11-2 | Aroclor-1016 | 48 | U |
| 11104-28-2 | Aroclor-1221 | 97 | U |
| 11141-16-5 | Aroclor-1232 | 48 | U |
| 53469-21-9 | Aroclor-1242 | 48 | U |
| 12672-29-6 | Aroclor-1248 | 48 | U |
| 11097-69-1 | Aroclor-1254 | 48 | U |
| 11096-82-5 | Aroclor-1260 | 48 | U |

HPECC DB1701 WB CAP 1.0uL INJ

Ref. 9



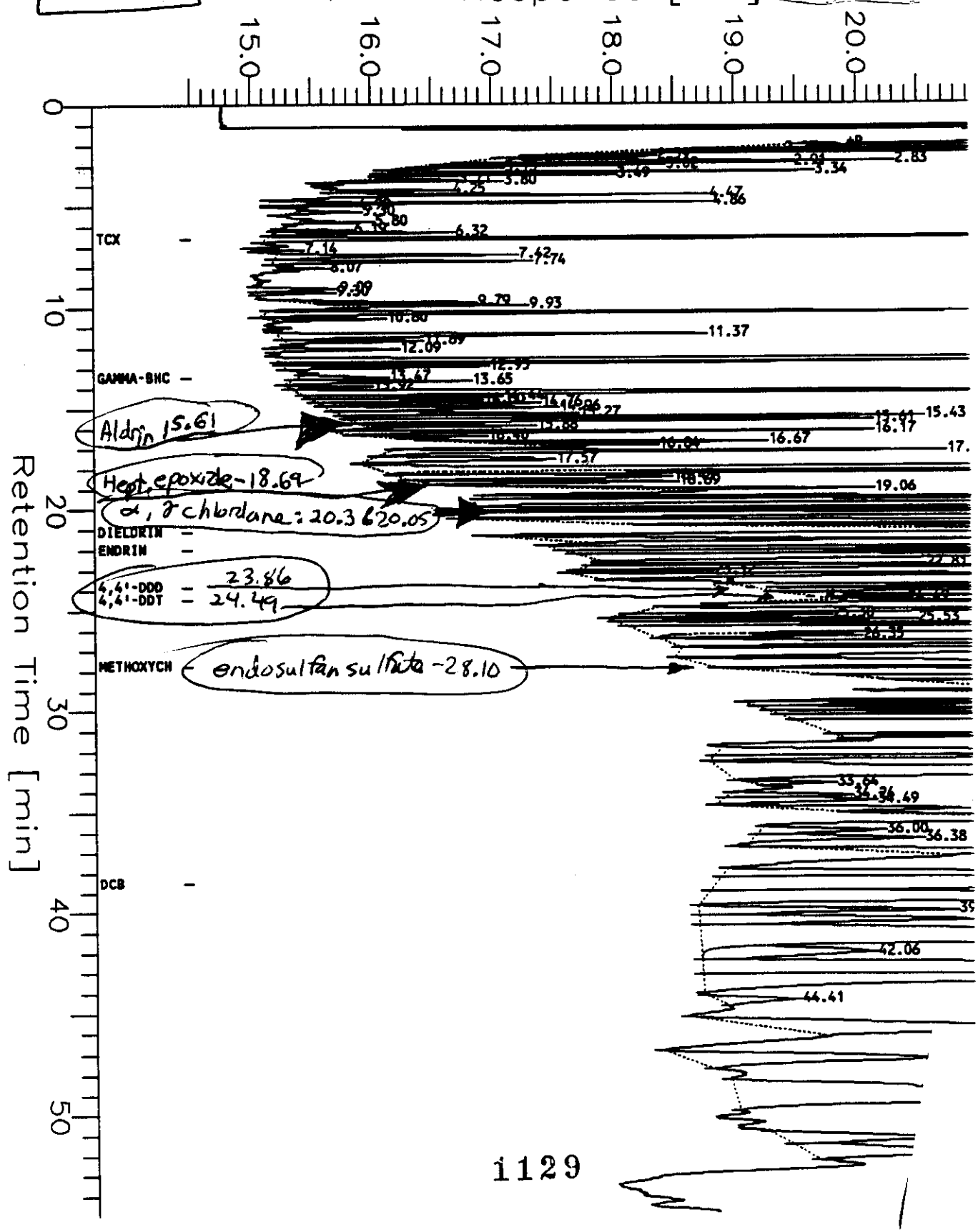
Sample Name : 9207969
FileName : J:\DATA\C245042.raw
Method : hpec3.ins
Start Time : 0.00 min
Scale Factor: 0

End Time : 55.00 min
Plot Offset: 15 mV

Sample #: CGG86
Date : 9/4/92 9:08 AM
Time of Injection: 9/3/92 11:19 AM
Low Point : 14.50 mV
Plot Scale: 7 mV

High Point : 21.50 mV

CGG86 → Many interferences - High Chance of FALSE POSITIVES



HPECD DB-608 WB CAP. 1.0uL INJ

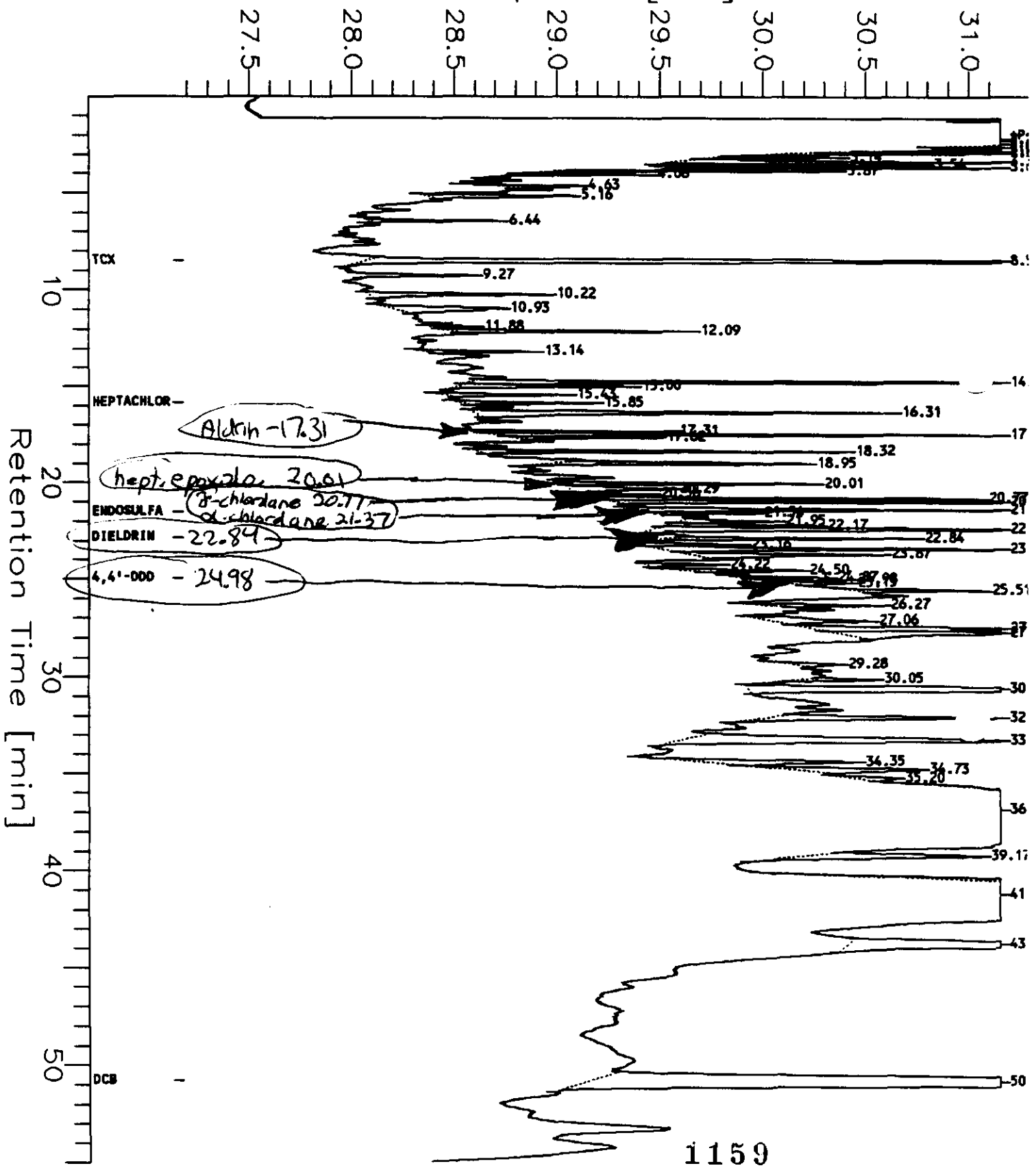
Ref. 9

Sample Name : 9207970
FileName : J:\DATA\D248022.raw
Method : hpec3.ins
Start Time : 0.01 min End Time : 55.00 min
Scale Factor: 0 Plot Offset: 27 mV

Sample #: CCG87
Date : 9/8/92 1:29 PM
Time of Injection: 9/5/92 11:19 AM
Low Point : 27.18 mV High Point : 31.16 mV
Plot Scale: 4 mV



CGG87 - Many Interferences. High Chance of FALSE POSITIVES



10A
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

Ref 10

EPA SAMPLE NO.

CGG86

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: SDG No.: CGG70

Lab Sample ID : 9207969 Dates(s) Analyzed: 09/03/92 09/03/92

Instrument ID (1): HPECC Instrument ID (2): HPECD

GC Column(1): RTX-1701 ID: 0.53(mm) GC Column(2): RTX-50 ID: 0.53(mm)

| ANALYTE | COL | RT | RT WINDOW FROM | RT WINDOW TO | CONCENTRATION | %D |
|---|---|---|---|---|---|---|
| Aldrin | 1 | 15.61 | edge 15.51 | 15.61 | 6.9 | |
| | 2 | 17.32 | 17.28 | 17.38 | 9.3 | 34.8 |
| Heptachlor epoxide | 1 | 18.69 | 18.59 | 18.73 | 2.5 | |
| | 2 | 19.93 | 19.93 edge | 20.07 | 10 | 300.0 |
| 4,4'-DDD | 1 | 23.86 | 23.73 | edge 23.87 | 13 | |
| | 2 | 24.96 | 24.89 | 25.03 | 24 | 84.6 |
| Endosulfan sulfate | 1 | 28.10 | 28.02 | 28.16 | 42 | |
| | 2 | 28.55 | 28.42 | edge 28.56 | 1.5 | 999.9 |
| 4,4'-DDT | 1 | 24.49 | 24.40 | 24.54 | 1.3 | |
| | 2 | 26.50 | 26.42 | 26.56 | 3.9 | 200.0 |
| alpha-Chlordane | 1 | 20.30 | 20.22 | 20.36 | 8.8 | |
| | 2 | 21.36 | 21.30 | 21.44 | 13 | 47.7 |
| gamma-Chlordane | 1 | 20.05 | 19.97 | 20.11 | 8.7 | |
| | 2 | 20.77 | 20.69 | 20.83 | 12 | 37.9 |

10A
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

Ref 10

EPA SAMPLE NO.

CGG87

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: SDG No.: CGG70

Lab Sample ID : 9207970 Dates(s) Analyzed: 09/05/92 09/05/92

Instrument ID (1): HPECC Instrument ID (2): HPECD

GC Column(1): RTX-1701 ID: 0.53(mm) GC Column(2): RTX-50 ID: 0.53(mm)

| ANALYTE | COL | RT | RT WINDOW FROM | RT WINDOW TO | CONCENTRATION | %D |
|---|---|---|---|---|---|---|
| Aldrin | 1 | 15.52 | 15.44 | 15.54 | 0.60 | |
| | 2 | 17.31 | 17.27 | 17.37 | 0.68 | 13.3 |
| Heptachlor epoxide | 1 | 18.61 | 18.52 | 18.66 | 0.42 | |
| | 2 | 20.01 | 19.92 | 20.06 | 0.96 | 128.6 |
| Dieldrin | 1 | 21.14 | 21.07 | 21.21 | 1.7 | |
| | 2 | 22.84 | 22.76 | 22.90 | 1.3 | 30.8 |
| 4,4'-DDD | 1 | 23.78 | 23.64 | edge 23.78 | 1.0 | |
| | 2 | 24.98 | 24.89 | 25.03 | 0.73 | 37.0 |
| alpha-Chlordane | 1 | 20.22 | 20.14 | 20.28 | 1.3 | |
| | 2 | 21.37 | 21.29 | 21.43 | 1.7 | 30.[illegible] |
| gamma-Chlordane | 1 | 19.97 | 19.89 | 20.03 | 1.7 | |
| | 2 | 20.77 | 20.69 | 20.83 | 1.4 | 21.4 |

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CGG86

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: _____ SDG No.: CGG70

Matrix: (soil/water) SOIL Lab Sample ID: 9207969

Sample wt/vol: 30.1 (g/mL) G Lab File ID: E2974

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: 32 decanted: (Y/N) N Date Extracted: 08/25/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 08/28/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.8

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 51-28-5 | 2,4-Dinitrophenol | 1200 | U |
| 100-02-7 | 4-Nitrophenol | 1200 | U |
| 132-64-9 | Dibenzofuran | 260 | J |
| 121-14-2 | 2,4-Dinitrotoluene | 480 | U |
| 84-66-2 | Diethylphthalate | 480 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 480 | U |
| 86-73-7 | Fluorene | 390 | J |
| 100-01-6 | 4-Nitroaniline | 1200 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 1200 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 480 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 480 | U |
| 118-74-1 | Hexachlorobenzene | 480 | U |
| 87-86-5 | Pentachlorophenol | 1200 | U |
| 85-01-8 | Phenanthrene | 2100 | |
| 120-12-7 | Anthracene | 630 | |
| 86-74-8 | Carbazole | 340 | J |
| 84-74-2 | Di-n-butylphthalate | 82 | J |
| 206-44-0 | Fluoranthene | 3500 | |
| 129-00-0 | Pyrene | 2800 | |
| 85-68-7 | Butylbenzylphthalate | 330 | J |
| 91-94-1 | 3,3'-Dichlorobenzidine | 480 | U |
| 56-55-3 | Benzo(a)anthracene | 2000 | |
| 218-01-9 | Chrysene | 1800 | |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 1200 | |
| 117-84-0 | Di-n-octylphthalate | 130 | J |
| 205-99-2 | Benzo(b)fluoranthene | 2600 | |
| 207-08-9 | Benzo(k)fluoranthene | 1100 | |
| 50-32-8 | Benzo(a)pyrene | 1800 | |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 1000 | |
| 53-70-3 | Dibenz(a,h)anthracene | 230 | J |
| 191-24-2 | Benzo(g,h,i)perylene | 710 | |

(1) - Cannot be separated from Diphenylamine

1F

# SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

CGG86

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: _____ SDG No.: CGG70

Matrix: (soil/water) SOIL Lab Sample ID: 9207969

Sample wt/vol: 30.1 (g/mL) G Lab File ID: E2974

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: 32 decanted: (Y/N) N Date Extracted: 08/25/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 08/28/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.8

Number TICs found: 21

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | UNKNOWN | 6.11 | 10000 | JNB |
| 2. 123422 | 2-Pentanone, 4-Hydroxy-4-met | 6.73 | 73000 | JNBA |
| 3. | UNKNOWN | 8.26 | 2900 | JNB |
| 4. | UNKNOWN | 8.63 | 730 | JN |
| 5. 4436753 | 3-Hexene-2,5-dione | 8.99 | 1200 | JNB |
| 6. | UNKNOWN | 11.74 | 1800 | JN |
| 7. | UNKNOWN | 23.62 | 930 | JN |
| 8. 6627889 | Phenol, 2,6-dimethoxy-4-(2-p | 23.84 | 1200 | JN |
| 9. | UNKNOWN HYDROCARBON | 26.66 | 440 | JN |
| 10. | C.15.H.12. PAH | 27.07 | 510 | JN |
| 11. | C.15.H.12. PAH | 27.21 | 410 | JN |
| 12. | UNKNOWN PAH | 27.30 | 630 | JN |
| 13. | C.16.H.12. PAH + UNKNOWN | 27.98 | 1600 | JN |
| 14. | C.16.H.14 PAH | 28.78 | 410 | JN |
| 15. | UNKNOWN | 29.06 | 510 | JN |
| 16. | C.17.H.12. PAH | 31.26 | 390 | JN |
| 17. | UNKNOWN HYDROCARBON | 31.58 | 460 | JN |
| 18. | UNKNOWN | 33.66 | 410 | JN |
| 19. | UNKNOWN HYDROCARBON | 35.97 | 3400 | JN |
| 20. | C.20.H.12. PAH + UNKNOWN HYD | 38.88 | 6600 | JN |
| 21. | UNKNOWN HYDROCARBON | 42.97 | 1800 | JN |

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
(Red)
CGG87

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: _____ SDG No.: CGG70

Matrix: (soil/water) SOIL Lab Sample ID: 9207970

Sample wt/vol: 30.1 (g/mL) G Lab File ID: E2970

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: 18 decanted: (Y/N) N Date Extracted: 08/25/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 08/28/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.2

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 400 | U |
| 111-44-4 | bis(2-Chloroethyl)ether | 400 | U |
| 95-57-8 | 2-Chlorophenol | 400 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 400 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 400 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 400 | U |
| 95-48-7 | 2-Methylphenol | 400 | U |
| 108-60-1 | 2,2'-oxybis(1-Chloropropane) | 400 | U |
| 106-44-5 | 4-Methylphenol | 400 | U |
| 621-64-7 | N-Nitroso-di-n-propylamine | 400 | U |
| 67-72-1 | Hexachloroethane | 400 | U |
| 98-95-3 | Nitrobenzene | 400 | U |
| 78-59-1 | Isophorone | 400 | U |
| 88-75-5 | 2-Nitrophenol | 400 | U |
| 105-67-9 | 2,4-Dimethylphenol | 400 | U |
| 111-91-1 | bis(2-Chloroethoxy)methane | 400 | U |
| 120-83-2 | 2,4-Dichlorophenol | 400 | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 400 | U |
| 91-20-3 | Naphthalene | 400 | U |
| 106-47-8 | 4-Chloroaniline | 400 | U |
| 87-68-3 | Hexachlorobutadiene | 400 | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 400 | U |
| 91-57-6 | 2-Methylnaphthalene | 400 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 400 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 400 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 970 | U |
| 91-58-7 | 2-Chloronaphthalene | 400 | U |
| 88-74-4 | 2-Nitroaniline | 970 | U |
| 131-11-3 | Dimethylphthalate | 400 | U |
| 208-96-8 | Acenaphthylene | 400 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 400 | U |
| 99-09-2 | 3-Nitroaniline | 970 | U |
| 83-32-9 | Acenaphthene | 400 | U |

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CGG87

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: _____ SDG No.: CGG70

Matrix: (soil/water) SOIL Lab Sample ID: 9207970

Sample wt/vol: 30.1 (g/mL) G Lab File ID: E2970

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: 18 decanted: (Y/N) N Date Extracted: 08/25/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 08/28/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.2

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 51-28-5 | 2,4-Dinitrophenol | 970 | U |
| 100-02-7 | 4-Nitrophenol | 970 | U |
| 132-64-9 | Dibenzofuran | 400 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 400 | U |
| 84-66-2 | Diethylphthalate | 400 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 400 | U |
| 86-73-7 | Fluorene | 400 | U |
| 100-01-6 | 4-Nitroaniline | 970 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 970 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 400 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 400 | U |
| 118-74-1 | Hexachlorobenzene | 400 | U |
| 87-86-5 | Pentachlorophenol | 970 | U |
| 85-01-8 | Phenanthrene | 44 | J |
| 120-12-7 | Anthracene | 400 | U |
| 86-74-8 | Carbazole | 400 | U |
| 84-74-2 | Di-n-butylphthalate | 45 | J |
| 206-44-0 | Fluoranthene | 47 | J |
| 129-00-0 | Pyrene | 35 | J |
| 85-68-7 | Butylbenzylphthalate | 41 | J |
| 91-94-1 | 3,3'-Dichlorobenzidine | 400 | U |
| 56-55-3 | Benzo(a)anthracene | 400 | U |
| 218-01-9 | Chrysene | 400 | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 94 | J |
| 117-84-0 | Di-n-octylphthalate | 400 | U |
| 205-99-2 | Benzo(b)fluoranthene | 33 | J |
| 207-08-9 | Benzo(k)fluoranthene | 400 | U |
| 50-32-8 | Benzo(a)pyrene | 400 | U |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 400 | U |
| 53-70-3 | Dibenz(a,h)anthracene | 400 | U |
| 191-24-2 | Benzo(g,h,i)perylene | 400 | U |

(1) - Cannot be separated from Diphenylamine

1F

# SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

CGG87

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: _____ SDG No.: CGG70

Matrix: (soil/water) SOIL Lab Sample ID: 9207970

Sample wt/vol: 30.1 (g/mL) G Lab File ID: E2970

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: 18 decanted: (Y/N) N Date Extracted: 08/25/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 08/28/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.2

Number TICs found: 20

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | 141797 | 3-Pentene-2-one, 4-methyl- | 5.33 | 400 | JNBA |
| 2. | | UNKNOWN | 6.06 | 9500 | JNB |
| 3. | 123422 | 2-Pentanone, 4-hydroxy-4-met | 6.68 | 71000 | JNBA |
| 4. | | UNKNOWN | 8.23 | 2600 | JNB |
| 5. | | UNKNOWN | 8.62 | 690 | JN |
| 6. | 4436753 | 3-Hexene-2,5-dione | 8.96 | 590 | JNB |
| 7. | | UNKNOWN | 10.58 | 400 | JNB |
| 8. | | UNKNOWN | 11.73 | 1900 | JN |
| 9. | | UNKNOWN HYDROCARBON | 23.81 | 120 | JN |
| 10. | | UNKNOWN HYDROCARBON | 27.96 | 100 | JN |
| 11. | | UNKNOWN | 29.03 | 120 | JN |
| 12. | | UNKNOWN HYDROCARBON | 31.55 | 120 | JN |
| 13. | 4337659 | HEXANEDIOIC ACID, MONO(2-ETH | 32.52 | 100 | JN |
| 14. | | UNKNOWN HYDROCARBON | 32.64 | 100 | JN |
| 15. | 74685339 | 3-Eicosane, (E)- | 33.64 | 200 | JN |
| 16. | | UNKNOWN HYDROCARBON | 34.76 | 120 | JN |
| 17. | | UNKNOWN HYDROCARBON | 35.93 | 180 | JN |
| 18. | | UNKNOWN HYDROCARBON | 38.81 | 200 | JN |
| 19. | | UNKNOWN HYDROCARBON | 40.63 | 100 | JN |
| 20. | | UNKNOWN HYDROCARBON | 42.86 | 140 | JN |

1B

# SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CGG88

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: _____ SDG No.: CGG70

Matrix: (soil/water) SOIL Lab Sample ID: 9207971

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E2971

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: 24 decanted: (Y/N) N Date Extracted: 08/25/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 08/28/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 5.2

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 430 | U |
| 111-44-4 | bis(2-Chloroethyl)ether | 430 | U |
| 95-57-8 | 2-Chlorophenol | 430 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 430 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 430 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 430 | U |
| 95-48-7 | 2-Methylphenol | 430 | U |
| 108-60-1 | 2,2'-oxybis(1-Chloropropane) | 430 | U |
| 106-44-5 | 4-Methylphenol | 430 | U |
| 621-64-7 | N-Nitroso-di-n-propylamine | 430 | U |
| 67-72-1 | Hexachloroethane | 430 | U |
| 98-95-3 | Nitrobenzene | 430 | U |
| 78-59-1 | Isophorone | 430 | U |
| 88-75-5 | 2-Nitrophenol | 430 | U |
| 105-67-9 | 2,4-Dimethylphenol | 430 | U |
| 111-91-1 | bis(2-Chloroethoxy)methane | 430 | U |
| 120-83-2 | 2,4-Dichlorophenol | 430 | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 430 | U |
| 91-20-3 | Naphthalene | 48 | J |
| 106-47-8 | 4-Chloroaniline | 430 | U |
| 87-68-3 | Hexachlorobutadiene | 430 | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 430 | U |
| 91-57-6 | 2-Methylnaphthalene | 430 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 430 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 430 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 1100 | U |
| 91-58-7 | 2-Chloronaphthalene | 430 | U |
| 88-74-4 | 2-Nitroaniline | 1100 | U |
| 131-11-3 | Dimethylphthalate | 430 | U |
| 208-96-8 | Acenaphthylene | 430 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 430 | U |
| 99-09-2 | 3-Nitroaniline | 1100 | U |
| 83-32-9 | Acenaphthene | 430 | U |

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CGG87

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: SDG No.: CGG70

Matrix: (soil/water) SOIL Lab Sample ID: 9207970

Sample wt/vol: 30.0 (g/mL) G Lab File ID:

% Moisture: 18 decanted: (Y/N) N Date Received: 08/20/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 08/24/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 09/05/92

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 8.2 Sulfur Cleanup: (Y/N) N

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | 2.1 | U |
| 319-85-7 | beta-BHC | 2.1 | U |
| 319-86-8 | delta-BHC | 2.1 | U |
| 58-89-9 | gamma-BHC (Lindane) | 2.1 | U |
| 76-44-8 | Heptachlor | 2.1 | U |
| 309-00-2 | Aldrin | 0.60 | J |
| 1024-57-3 | Heptachlor epoxide | 0.42 | JP |
| 959-98-8 | Endosulfan I | 2.1 | U |
| 60-57-1 | Dieldrin | 1.3 | JP |
| 72-55-9 | 4,4'-DDE | 4.0 | U |
| 72-20-8 | Endrin | 4.0 | U |
| 33213-65-9 | Endosulfan II | 4.0 | U |
| 72-54-8 | 4,4'-DDD | 0.73 | JP |
| 1031-07-8 | Endosulfan sulfate | 4.0 | U |
| 50-29-3 | 4,4'-DDT | 4.0 | U |
| 72-43-5 | Methoxychlor | 21 | U |
| 53494-70-5 | Endrin ketone | 4.0 | U |
| 7421-36-3 | Endrin aldehyde | 4.0 | U |
| 5103-71-9 | alpha-Chlordane | 1.3 | JP |
| 5103-74-2 | gamma-Chlordane | 1.4 | J |
| 8001-35-2 | Toxaphene | 210 | U |
| 12674-11-2 | Aroclor-1016 | 40 | U |
| 11104-28-2 | Aroclor-1221 | 82 | U |
| 11141-16-5 | Aroclor-1232 | 40 | U |
| 53469-21-9 | Aroclor-1242 | 40 | U |
| 12672-29-6 | Aroclor-1248 | 40 | U |
| 11097-69-1 | Aroclor-1254 | 40 | U |
| 11096-82-5 | Aroclor-1260 | 40 | U |

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CGG88

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: SDG No.: CGG70

Matrix: (soil/water) SOIL Lab Sample ID: 9207971

Sample wt/vol: 30.1 (g/mL) G Lab File ID:

% Moisture: 24 decanted: (Y/N) N Date Received: 08/20/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 08/24/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 09/05/92

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 5.2 Sulfur Cleanup: (Y/N) N

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | 2.2 | U |
| 319-85-7 | beta-BHC | 2.2 | U |
| 319-86-8 | delta-BHC | 2.2 | U |
| 58-89-9 | gamma-BHC (Lindane) | 2.2 | U |
| 76-44-8 | Heptachlor | 2.2 | U |
| 309-00-2 | Aldrin | 2.2 | U |
| 1024-57-3 | Heptachlor epoxide | 0.61 | JP |
| 959-98-8 | Endosulfan I | 2.2 | U |
| 60-57-1 | Dieldrin | 4.3 | U |
| 72-55-9 | 4,4'-DDE | 3.0 | JP |
| 72-20-8 | Endrin | 4.3 | U |
| 33213-65-9 | Endosulfan II | 4.3 | U |
| 72-54-8 | 4,4'-DDD | 1.2 | JP |
| 1031-07-8 | Endosulfan sulfate | 4.3 | U |
| 50-29-3 | 4,4'-DDT | 1.3 | JP |
| 72-43-5 | Methoxychlor | 22 | U |
| 53494-70-5 | Endrin ketone | 4.3 | U |
| 7421-36-3 | Endrin aldehyde | 4.3 | U |
| 5103-71-9 | alpha-Chlordane | 2.2 | U |
| 5103-74-2 | gamma-Chlordane | 2.2 | U |
| 8001-35-2 | Toxaphene | 220 | U |
| 12674-11-2 | Aroclor-1016 | 43 | U |
| 11104-28-2 | Aroclor-1221 | 88 | U |
| 11141-16-5 | Aroclor-1232 | 43 | U |
| 53469-21-9 | Aroclor-1242 | 43 | U |
| 12672-29-6 | Aroclor-1248 | 43 | U |
| 11097-69-1 | Aroclor-1254 | 43 | U |
| 11096-82-5 | Aroclor-1260 | 43 | U |

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CGG88

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: _____ SDG No.: CGG70

Matrix: (soil/water) SOIL Lab Sample ID: 9207971

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E2971

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: 24 decanted: (Y/N) N Date Extracted: 08/25/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 08/28/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 5.2

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q. |
|---|---|---|---|
| 51-28-5 | 2,4-Dinitrophenol | 1100 | U |
| 100-02-7 | 4-Nitrophenol | 1100 | U |
| 132-64-9 | Dibenzofuran | 430 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 430 | U |
| 84-66-2 | Diethylphthalate | 430 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 430 | U |
| 86-73-7 | Fluorene | 430 | U |
| 100-01-6 | 4-Nitroaniline | 1100 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 1100 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 430 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 430 | U |
| 118-74-1 | Hexachlorobenzene | 430 | U |
| 87-86-5 | Pentachlorophenol | 1100 | U |
| 85-01-8 | Phenanthrene | 210 | J |
| 120-12-7 | Anthracene | 35 | J |
| 86-74-8 | Carbazole | 430 | U |
| 84-74-2 | Di-n-butylphthalate | 430 | U |
| 206-44-0 | Fluoranthene | 340 | J |
| 129-00-0 | Pyrene | 280 | J |
| 85-68-7 | Butylbenzylphthalate | 430 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 430 | U |
| 56-55-3 | Benzo(a)anthracene | 180 | J |
| 218-01-9 | Chrysene | 200 | J |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 72 | J |
| 117-84-0 | Di-n-octylphthalate | 430 | U |
| 205-99-2 | Benzo(b)fluoranthene | 280 | J |
| 207-08-9 | Benzo(k)fluoranthene | 140 | J |
| 50-32-8 | Benzo(a)pyrene | 180 | J |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 150 | J |
| 53-70-3 | Dibenz(a,h)anthracene | 430 | U |
| 191-24-2 | Benzo(g,h,i)perylene | 110 | J |

(1) - Cannot be separated from Diphenylamine

1F

# SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

CGG88

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: _____ SDG No.: CGG70

Matrix: (soil/water) SOIL Lab Sample ID: 9207971

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E2971

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: 24 decanted: (Y/N) N Date Extracted: 08/25/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 08/28/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 5.2

Number TICs found: 21

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | UNKNOWN | 6.08 | 11000 | JNB |
| 2. 123422 | 2-Pentanone, 4-hydroxy-4-met | 6.69 | 81000 | JNBA |
| 3. | UNKNOWN | 8.24 | 3100 | JN |
| 4. 4436753 | 3-Hexene-2,5-dione | 8.98 | 1300 | JNB |
| 5. | UNKNOWN | 11.74 | 2100 | JN |
| 6. 57103 | Hexadecanoic acid | 27.44 | 530 | JN |
| 7. 74685339 | 3-Eicosene, (E)- | 33.65 | 460 | JN |
| 8. | UNKNOWN HYDROCARBON | 34.76 | 330 | JN |
| 9. | UNKNOWN ALDEHYDE | 35.18 | 330 | JN |
| 10. | UNKNOWN | 35.95 | 3100 | JN |
| 11. | UNKNOWN HYDROCARBON | 37.27 | 940 | JN |
| 12. | UNKNOWN HYDROCARBON | 38.88 | 6600 | JN |
| 13. | UNKNOWN HYDROCARBON | 40.66 | 1200 | JN |
| 14. | UNKNOWN ALDEHYDE | 41.60 | 2400 | JN |
| 15. | UNKNOWN HYDROCARBON | 42.96 | 7000 | JN |
| 16. | UNKNOWN | 43.43 | 530 | JN |
| 17. | UNKNOWN | 43.73 | 730 | JN |
| 18. | UNKNOWN | 44.04 | 530 | JN |
| 19. | UNKNOWN | 44.85 | 510 | JN |
| 20. | UNKNOWN | 46.67 | 970 | JN |
| 21. | UNKNOWN ALDEHYDE | 47.12 | 2200 | JN |

10A
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

Ref 10

EPA SAMPLE NO.

CGG88

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: SDG No.: CGG70

Lab Sample ID : 9207971 Dates(s) Analyzed: 09/05/92 09/05/92

Instrument ID (1): HPECC Instrument ID (2): HPECD

GC Column(1): RTX-1701 ID: 0.53(mm) GC Column(2): RTX-50 ID: 0.53(mm)

| ANALYTE | COL | RT | RT WINDOW FROM | RT WINDOW TO | CONCENTRATION | %D |
|---|---|---|---|---|---|---|
| Heptachlor epoxide | 1 | 18.65 | 18.52 | edge 18.66 | 1.9 | |
| | 2 | 19.99 | 19.92 | 20.06 | smaller 0.61 | 211.5 |
| 4'-DDE | 1 | 20.55 | 20.47 | 20.61 | 3.0 | |
| | 2 | 22.34 | 22.27 | 22.41 | larger 9.2 | 206.7 |
| 4,4'-DDD | 1 | 23.77 | 23.64 | edge 23.78 | 6.5 | |
| | 2 | 24.99 | 24.89 | 25.03 | smaller 1.2 | 441.7 |
| 4,4'-DDT | 1 | 24.38 | 24.31 | 24.45 | 1.3 | |
| | 2 | 26.51 | 26.42 | 26.56 | larger 6.0 | 361.5 |

ALL RESULTS DISAGREE BY MORE THAN 3-FOLD

For these disagreements, the GC column that is much smaller or larger than conc. on other column varies, so no systematic reason why 2 columns shouldn't agree better, if compounds were real.



FORM X PEST-1 3/90

10A
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

Ref. 10

EPA SAMPLE NO.

CGG89

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: SDG No.: CGG70

Lab Sample ID : 9207972 Dates(s) Analyzed: 09/05/92 09/05/92

Instrument ID (1): HPECC Instrument ID (2): HPECD

GC Column(1): RTX-1701 ID: 0.53(mm) GC Column(2): RTX-50 ID: 0.53(mm)

| ANALYTE | COL | RT | RT WINDOW FROM | RT WINDOW TO | CONCENTRATION | %D |
|---|---|---|---|---|---|---|
| Heptachlor epoxide | 1 | 18.62 | 18.52 | 18.66 | 1.1 | |
| | 2 | 20.00 | 19.92 | 20.06 | 0.63 | 74.6 |
| 4,4'-DDE | 1 | 20.54 | 20.47 | 20.61 | 2.1 | |
| | 2 | 22.35 | 22.27 | 22.41 | 5.1 | 142.9 |
| Endosulfan II | 1 | 23.99 | 23.91 | 24.05 | 1.7 | |
| | 2 | 25.63 | 25.58 | 25.72 | 0.79 | 115.2 |
| 4,4'-DDT | 1 | 24.38 | 24.31 | 24.45 | 2.5 | |
| | 2 | 26.50 | 26.42 | 26.56 | 3.5 | 40.0 |

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

CGG89

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: _____ SDG No.: CGG70

Matrix: (soil/water) SOIL Lab Sample ID: 9207972

Sample wt/vol: 30.1 (g/mL) G Lab File ID: E2972

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: 24 decanted: (Y/N) N Date Extracted: 08/25/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 08/28/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 5.5

Number TICs found: 21

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | UNKNOWN | 5.99 | 9200 | JNB |
| 2. 123422 | 2-Pentanone, 4-Hydroxy-4-met | 6.64 | 74000 | JNBA |
| 3. | UNKNOWN | 8.23 | 2600 | JN |
| 4. 4436753 | 3-Hexene-2,5-dione | 8.98 | 1700 | JNB |
| 5. | UNKNOWN | 11.73 | 1800 | JN |
| 6. 57103 | Hexadecanoic acid | 27.44 | 500 | JN |
| 7. 4337659 | HEXANEDIOIC ACID, MONO(2-ETH | 32.53 | 330 | JN |
| 8. 74685339 | 3-Eicosene, (E)- | 33.64 | 370 | JN |
| 9. | UNKNOWN | 34.17 | 310 | JN |
| 10. | UNKNOWN HYDROCARBON | 34.76 | 370 | JN |
| 11. | UNKNOWN ALDEHYDE | 35.19 | 350 | JN |
| 12. | UNKNOWN | 35.95 | 4600 | JN |
| 3. | UNKNOWN HYDROCARBON | 37.27 | 960 | JN |
| 14. | UNKNOWN | 37.89 | 440 | JN |
| 15. | UNKNOWN HYDROCARBON | 38.88 | 6600 | JN |
| 16. | UNKNOWN HYDROCARBON | 40.67 | 480 | JN |
| 17. | UNKNOWN | 41.08 | 520 | JN |
| 18. | UNKNOWN ALDEHYDE | 41.60 | 2400 | JN |
| 19. | UNKNOWN HYDROCARBON | 42.95 | 3700 | JN |
| 20. | UNKNOWN | 43.48 | 1100 | JN |
| 21. | UNKNOWN | 43.72 | 850 | JN |

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CGG90

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: _____ SDG No.: CGG70

Matrix: (soil/water) SOIL Lab Sample ID: 9207973

Sample wt/vol: 30.8 (g/mL) G Lab File ID: E2973

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: 26 decanted: (Y/N) N Date Extracted: 08/25/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 08/28/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 5.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 430 | U |
| 111-44-4 | bis(2-Chloroethyl)ether | 430 | U |
| 95-57-8 | 2-Chlorophenol | 430 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 430 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 430 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 430 | U |
| 95-48-7 | 2-Methylphenol | 430 | U |
| 108-60-1 | 2,2'-oxybis(1-Chloropropane) | 430 | U |
| 106-44-5 | 4-Methylphenol | 430 | U |
| 621-64-7 | N-Nitroso-di-n-propylamine | 430 | U |
| 67-72-1 | Hexachloroethane | 430 | U |
| 98-95-3 | Nitrobenzene | 430 | U |
| 78-59-1 | Isophorone | 430 | U |
| 88-75-5 | 2-Nitrophenol | 430 | U |
| 105-67-9 | 2,4-Dimethylphenol | 430 | U |
| 111-91-1 | bis(2-Chloroethoxy)methane | 430 | U |
| 120-83-2 | 2,4-Dichlorophenol | 430 | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 430 | U |
| 91-20-3 | Naphthalene | 430 | U |
| 106-47-8 | 4-Chloroaniline | 430 | U |
| 87-68-3 | Hexachlorobutadiene | 430 | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 430 | U |
| 91-57-6 | 2-Methylnaphthalene | 430 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 430 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 430 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 1100 | U |
| 91-58-7 | 2-Chloronaphthalene | 430 | U |
| 88-74-4 | 2-Nitroaniline | 1100 | U |
| 131-11-3 | Dimethylphthalate | 430 | U |
| 208-96-8 | Acenaphthylene | 430 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 430 | U |
| 99-09-2 | 3-Nitroaniline | 1100 | U |
| 83-32-9 | Acenaphthene | 430 | U |

1B

# SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CGG89

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: _____ SDG No.: CGG70

Matrix: (soil/water) SOIL Lab Sample ID: 9207972

Sample wt/vol: 30.1 (g/mL) G Lab File ID: E2972

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: 24 decanted: (Y/N) N Date Extracted: 08/25/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 08/28/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 5.5

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 430 | U |
| 111-44-4 | bis(2-Chloroethyl)ether | 430 | U |
| 95-57-8 | 2-Chlorophenol | 430 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 430 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 430 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 430 | U |
| 95-48-7 | 2-Methylphenol | 430 | U |
| 108-60-1 | 2,2'-oxybis(1-Chloropropane) | 430 | U |
| 106-44-5 | 4-Methylphenol | 430 | U |
| 621-64-7 | N-Nitroso-di-n-propylamine | 430 | U |
| 67-72-1 | Hexachloroethane | 430 | U |
| 98-95-3 | Nitrobenzene | 430 | U |
| 78-59-1 | Isophorone | 430 | U |
| 88-75-5 | 2-Nitrophenol | 430 | U |
| 105-67-9 | 2,4-Dimethylphenol | 430 | U |
| 111-91-1 | bis(2-Chloroethoxy)methane | 430 | U |
| 120-83-2 | 2,4-Dichlorophenol | 430 | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 430 | U |
| 91-20-3 | Naphthalene | 430 | U |
| 106-47-8 | 4-Chloroaniline | 430 | U |
| 87-68-3 | Hexachlorobutadiene | 430 | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 430 | U |
| 91-57-6 | 2-Methylnaphthalene | 430 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 430 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 430 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 1000 | U |
| 91-58-7 | 2-Chloronaphthalene | 430 | U |
| 88-74-4 | 2-Nitroaniline | 1000 | U |
| 131-11-3 | Dimethylphthalate | 430 | U |
| 208-96-8 | Acenaphthylene | 430 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 430 | U |
| 99-09-2 | 3-Nitroaniline | 1000 | U |
| 83-32-9 | Acenaphthene | 430 | U |

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CGG89

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: _____ SDG No.: CGG70

Matrix: (soil/water) SOIL Lab Sample ID: 9207972

Sample wt/vol: 30.1 (g/mL) G Lab File ID: E2972

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: 24 decanted: (Y/N) N Date Extracted: 08/25/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 08/28/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 5.5

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q. |
|---|---|---|---|
| 51-28-5 | 2,4-Dinitrophenol | 1000 | U |
| 100-02-7 | 4-Nitrophenol | 1000 | U |
| 132-64-9 | Dibenzofuran | 430 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 430 | U |
| 84-66-2 | Diethylphthalate | 430 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 430 | U |
| 86-73-7 | Fluorene | 430 | U |
| 100-01-6 | 4-Nitroaniline | 1000 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 1000 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 430 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 430 | U |
| 118-74-1 | Hexachlorobenzene | 430 | U |
| 87-86-5 | Pentachlorophenol | 1000 | U |
| 85-01-8 | Phenanthrene | 87 | J |
| 120-12-7 | Anthracene | 430 | U |
| 86-74-8 | Carbazole | 430 | U |
| 84-74-2 | Di-n-butylphthalate | 430 | U |
| 206-44-0 | Fluoranthene | 190 | J |
| 129-00-0 | Pyrene | 140 | J |
| 85-68-7 | Butylbenzylphthalate | 430 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 430 | U |
| 56-55-3 | Benzo(a)anthracene | 97 | J |
| 218-01-9 | Chrysene | 120 | J |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 60 | J |
| 117-84-0 | Di-n-octylphthalate | 430 | U |
| 205-99-2 | Benzo(b)fluoranthene | 170 | J |
| 207-08-9 | Benzo(k)fluoranthene | 78 | J |
| 50-32-8 | Benzo(a)pyrene | 96 | J |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 430 | U |
| 53-70-3 | Dibenz(a,h)anthracene | 430 | U |
| 191-24-2 | Benzo(g,h,i)perylene | 62 | J |

(1) - Cannot be separated from Diphenylamine

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CGG90

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: _____ SDG No.: CGG70

Matrix: (soil/water) SOIL Lab Sample ID: 9207973

Sample wt/vol: 30.8 (g/mL) G Lab File ID: E2973

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: 26 decanted: (Y/N) N Date Extracted: 08/25/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 08/28/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 5.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 51-28-5 | 2,4-Dinitrophenol | 1100 | U |
| 100-02-7 | 4-Nitrophenol | 1100 | U |
| 132-64-9 | Dibenzofuran | 430 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 430 | U |
| 84-66-2 | Diethylphthalate | 430 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 430 | U |
| 86-73-7 | Fluorene | 430 | U |
| 100-01-6 | 4-Nitroaniline | 1100 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 1100 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 430 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 430 | U |
| 118-74-1 | Hexachlorobenzene | 430 | U |
| 87-86-5 | Pentachlorophenol | 1100 | U |
| 85-01-8 | Phenanthrene | 140 | J |
| 120-12-7 | Anthracene | 430 | U |
| 86-74-8 | Carbazole | 430 | U |
| 84-74-2 | Di-n-butylphthalate | 430 | U |
| 206-44-0 | Fluoranthene | 300 | J |
| 129-00-0 | Pyrene | 250 | J |
| 85-68-7 | Butylbenzylphthalate | 43 | J |
| 91-94-1 | 3,3'-Dichlorobenzidine | 430 | U |
| 56-55-3 | Benzo(a)anthracene | 160 | J |
| 218-01-9 | Chrysene | 210 | J |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 83 | J |
| 117-84-0 | Di-n-octylphthalate | 430 | U |
| 205-99-2 | Benzo(b)fluoranthene | 270 | J |
| 207-08-9 | Benzo(k)fluoranthene | 120 | J |
| 50-32-8 | Benzo(a)pyrene | 150 | J |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 130 | J |
| 53-70-3 | Dibenz(a,h)anthracene | 41 | J |
| 191-24-2 | Benzo(g,h,i)perylene | 100 | J |

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

CGG90

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: _____ SDG No.: CGG70

Matrix: (soil/water) SOIL Lab Sample ID: 9207973

Sample wt/vol: 30.8 (g/mL) G Lab File ID: E2973

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: 26 decanted: (Y/N) N Date Extracted: 08/25/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 08/28/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 5.0

Number TICs found: 23

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | UNKNOWN | 6.16 | 12000 | JNB |
| 2. 123422 | 2-Pentanone, 4-Hydroxy-4-met | 6.74 | 88000 | JNBA |
| 3. | UNKNOWN | 8.26 | 3500 | JNB |
| 4. 4436753 | 3-Hexene-2,5-dione | 9.00 | 1500 | JNB |
| 5. | UNKNOWN | 11.75 | 1700 | JN |
| 6. 57103 | Hexadecanoic acid | 27.43 | 280 | JN |
| 7. | UNKNOWN | 33.00 | 310 | JN |
| 8. | UNKNOWN | 33.64 | 240 | JN |
| 9. | UNKNOWN HYDROCARBON | 34.77 | 240 | JN |
| 10. | UNKNOWN ALDEHYDE | 35.19 | 500 | JN |
| 11. | UNKNOWN HYDROCARBON | 35.95 | 2600 | JN |
| 12. | UNKNOWN | 36.44 | 310 | JN |
| 13. | UNKNOWN HYDROCARBON | 37.28 | 770 | JN |
| 14. | UNKNOWN ALDEHYDE | 37.88 | 1900 | JN |
| 15. | UNKNOWN HYDROCARBON | 38.88 | 5500 | JN |
| 16. | UNKNOWN HYDROCARBON | 40.69 | 570 | JN |
| 17. | UNKNOWN ALDEHYDE | 41.62 | 3900 | JN |
| 18. | UNKNOWN HYDROCARBON | 42.98 | 4400 | JN |
| 19. | UNKNOWN | 43.09 | 3100 | JN |
| 20. | UNKNOWN | 43.45 | 370 | JN |
| 21. | UNKNOWN | 43.73 | 530 | JN |
| 22. | UNKNOWN | 44.04 | 390 | JN |
| 23. | UNKNOWN ALDEHYDE | 47.11 | 1800 | JN |

1D

# PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CGG89

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: SDG No.: CGG70

Matrix: (soil/water) SOIL Lab Sample ID: 9207972

Sample wt/vol: 29.5 (g/mL) G Lab File ID:

% Moisture: 24 decanted: (Y/N) N Date Received: 08/20/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 08/24/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 09/05/92

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 5.5 Sulfur Cleanup: (Y/N) N

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | 2.3 | U |
| 319-85-7 | beta-BHC | 2.3 | U |
| 319-86-8 | delta-BHC | 2.3 | U |
| 58-89-9 | gamma-BHC (Lindane) | 2.3 | U |
| 76-44-8 | Heptachlor | 2.3 | U |
| 309-00-2 | Aldrin | 2.3 | U |
| 1024-57-3 | Heptachlor epoxide | 0.63 | JP |
| 959-98-8 | Endosulfan I | 2.3 | U |
| 60-57-1 | Dieldrin | 4.4 | U |
| 72-55-9 | 4,4'-DDE | 2.1 | JP |
| 72-20-8 | Endrin | 4.4 | U |
| 33213-65-9 | Endosulfan II | 0.79 | JP |
| 72-54-8 | 4,4'-DDD | 4.4 | U |
| 1031-07-8 | Endosulfan sulfate | 4.4 | U |
| 50-29-3 | 4,4'-DDT | 2.5 | JP |
| 72-43-5 | Methoxychlor | 23 | U |
| 53494-70-5 | Endrin ketone | 4.4 | U |
| 7421-36-3 | Endrin aldehyde | 4.4 | U |
| 5103-71-9 | alpha-Chlordane | 2.3 | U |
| 5103-74-2 | gamma-Chlordane | 2.3 | U |
| 8001-35-2 | Toxaphene | 230 | U |
| 12674-11-2 | Aroclor-1016 | 44 | U |
| 11104-28-2 | Aroclor-1221 | 90 | U |
| 11141-16-5 | Aroclor-1232 | 44 | U |
| 53469-21-9 | Aroclor-1242 | 44 | U |
| 12672-29-6 | Aroclor-1248 | 44 | U |
| 11097-69-1 | Aroclor-1254 | 44 | U |
| 11096-82-5 | Aroclor-1260 | 44 | U |

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CGG90

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: SDG No.: CGG70

Matrix: (soil/water) SOIL Lab Sample ID: 9207973

Sample wt/vol: 29.8 (g/mL) G Lab File ID:

% Moisture: 26 decanted: (Y/N) N Date Received: 08/20/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 08/24/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 09/05/92

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 5.0 Sulfur Cleanup: (Y/N) N

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 319-84-6 | alpha-BHC | 2.3 | U |
| 319-85-7 | beta-BHC | 2.3 | U |
| 319-86-8 | delta-BHC | 2.3 | U |
| 58-89-9 | gamma-BHC (Lindane) | 2.3 | UX |
| 76-44-8 | Heptachlor | 2.3 | U |
| 309-00-2 | Aldrin | 1.0 | JP |
| 1024-57-3 | Heptachlor epoxide | 0.34 | JP |
| 959-98-8 | Endosulfan I | 2.3 | U |
| 60-57-1 | Dieldrin | 4.5 | U |
| 72-55-9 | 4,4'-DDE | 3.3 | JP |
| 72-20-8 | Endrin | 4.5 | U |
| 33213-65-9 | Endosulfan II | 4.5 | U |
| 72-54-8 | 4,4'-DDD | 2.1 | JP |
| 1031-07-8 | Endosulfan sulfate | 4.5 | U |
| 50-29-3 | 4,4'-DDT | 4.5 | U |
| 72-43-5 | Methoxychlor | 23 | U |
| 53494-70-5 | Endrin ketone | 4.5 | U |
| 7421-36-3 | Endrin aldehyde | 4.5 | U |
| 5103-71-9 | alpha-Chlordane | 2.3 | U |
| 5103-74-2 | gamma-Chlordane | 2.3 | U |
| 8001-35-2 | Toxaphene | 230 | U |
| 12674-11-2 | Aroclor-1016 | 45 | U |
| 11104-28-2 | Aroclor-1221 | 91 | U |
| 11141-16-5 | Aroclor-1232 | 45 | U |
| 53469-21-9 | Aroclor-1242 | 45 | U |
| 12672-29-6 | Aroclor-1248 | 45 | U |
| 11097-69-1 | Aroclor-1254 | 45 | U |
| 11096-82-5 | Aroclor-1260 | 45 | U |

10A
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

Ref 10

EPA SAMPLE NO.

CGG90

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: SDG No.: CGG70

Lab Sample ID : 9207973 Dates(s) Analyzed: 09/05/92 09/05/92

Instrument ID (1): HPECC Instrument ID (2): HPECD

GC Column(1): RTX-1701 ID: 0.53(mm) GC Column(2): RTX-50 ID: 0.53(mm)

| ANALYTE | COL | RT | RT WINDOW FROM | RT WINDOW TO | CONCENTRATION | %D |
|---|---|---|---|---|---|---|
| Aldrin | 1 | 15.52 | 15.44 | 15.54 | 1.0 | |
| | 2 | 17.32 | 17.27 | 17.37 | 1.4 | 40.0 |
| ptachlor epoxide | 1 | 18.62 | 18.52 | 18.66 | 1.3 | |
| | 2 | 19.98 | 19.92 | 20.06 | 0.34 | 282.4 |
| 4,4'-DDE | 1 | 20.55 | 20.47 | 20.61 | 3.3 | |
| | 2 | 22.35 | 22.27 | 22.41 | 9.5 | 187.9 |
| 4,4'-DDD | 1 | 23.77 | 23.64 | edge 23.78 | 12 | |
| | 2 | 24.99 | 24.89 | 25.03 | 2.1 | 471.4 |

TPO: [X] ACTION [ ] FYI

Region III

## ORGANIC REGIONAL DATA ASSESSMENT SUMMARY

CASE NO. SAS 7453C-01 LABORATORY PRECIS

SDG NO. CGG72 DATA USER Pat Churilla, TPO, EPA R.V ESD

SOW 3/90 (modified; sieve to no. 10 rocky mt) REVIEW COMPLETION DATE 1/12/93

NO. OF SAMPLES 5 MATRIX SOLID (Rocky Waste)

REVIEWER [ ] ESD [ ] ESAT [X] OTHER, CONTRACT/CONTRACTOR ARCS III/Halliburton NUS

| | VOA | BNA | PEST | OTHER |
|---|---|---|---|---|
| 1. HOLDING TIMES | M[12] | MA[19] | MA[16] | |
| 2. GC-MS TUNE/ GC PERFORMANCE | O | O | ZA[2], OA[5] | |
| 3. INITIAL CALIBRATIONS | XA[11] | X[23] | OA[6] | |
| 4. CONTINUING CALIBRATIONS | X[24] | X[25] | OA[7] | |
| 5. FIELD BLANKS ("F" = not applicable) | F | F | F | |
| 6. LABORATORY BLANKS | X[20] | XA[8] | O | |
| 7. SURROGATES | M[10] | OA[13] | ZA[1] | |
| 8. MATRIX SPIKE/DUPLICATES | O[18] | O[18] | ZA[1] | |
| 9. REGIONAL QC ("F" = not applicable) | O | O[27] | O[27] | |
| 10. INTERNAL STANDARDS | M[9] | X[21] | | |
| 11. COMPOUND IDENTIFICATION | O | O | XA[3,4], X[26] | |
| 12. COMPOUND QUANTITATION | O | O | M[22] | |
| 13. SYSTEM PERFORMANCE | O | O | O | |
| 14 OVERALL ASSESSMENT | O | OA[17], O[28] | OA[14,15], O[28] | |

O = No problems or minor problems that do not affect data usability.
X = No more than *about* 5% of the data points are qualified as either estimated or unusable.
M = More than *about* 5% of the data points are qualified as estimated.
Z = More than *about* 5% of the data points are qualified as unusable. (R)
A = DPO action requested; use in conjunction with one of the above codes.

TPO ACTION ITEMS: ZA[1] = See Note 1. ZA[2] = See Note 2. XA[3] = See note 3. XA[4] = See Note 4. OA[5] = See Note 5. OA[6] = See Note 6. OA[7] = See note 7. XA[8] = See Note 8. XA[11] = see Note 11. OA[13] = See Note 13. OA[14] = See Note 14. OA[15] = See Note 15. MA[16] = See Note 16. OA[17] = See Note 17. MA[19] = See Note 19.

AREAS OF CONCERN: M[9] = See Note 9. M[10] = See Note 10. M[12] = See Note 12. O[18] = See Note 18. X[20] = See Note 20. X[21] = See Note 21. M[22] = See Note 22. X[23] = See Note 23. X[24] = See Note 24. X[25] = See Note 25. X[26] = See Note 26. O[27] = See Note 27. O[28] = See Note 28.

ORDAS NOTES

1. Initial pesticide fraction surrogate recoveries were all < 10% on both GC columns for a solid laboratory preparation blank and for 3 out of 5 solid samples. Poor laboratory performance is indicated because reanalysis recoveries were all dramatically better in terms of surrogates and matrix spikes. Several positive results were qualified biased extremely low, and detection capability is considered unreliable for this extraction. (See ref. 1.)

2. The pesticide fraction re-extraction and reanalysis performed on 4 solid samples and associated MS, MSD, and laboratory blanks exhibited non-compliant shifts for the surrogate DCB on one column and TCX and DCB on the other column. The fact that this rendered detection capability unreliable is demonstrated by RTs that were out of control for nearly all matrix spike compounds in the MS and MSD. Since unusable retention time predictions occured for the same samples that had already been analyzed once unacceptably (see item no. 1, above), this resulted in the laboratory reporting 2 sets of unusable analyses (in terms of detection capability) for 3 solid samples (CGG72, CGG73, and CGG81). (See ref. 2.)

3. In the initial analyses of samples CGG79 and CGG81, several pesticides were detected within RT windows but were not reported by the laboratory. Some of these results were greater than the CRQL on both GC columns and should have been reported. The reviewer added these target compounds to the data summary. (See ref. 3.)

4. The laboratory reported the presence of 4,4'-DDD in sample CGG80, but the associated peak was outside RT windows on one GC column. Since RT criteria for surrogates and standards were met in the associated analytical sequence, the presence of DDD can be ruled out. The sample result was deleted by the reviewer from the data summary. (See ref. 4.)

5. A pesticide standard (PEM15) run on the DB-1701 column on September 21 was reported by the laboratory as having severely non-compliant RTs and percent differences. This data was evaluated by the reviewer and found to have been misreported from the wrong GC column. (See ref. 5.)

6. Several pesticide initial calibrations run on the DB-1701 column exhibited RSDs for several compounds that were substantially greater than that allowed by the SOW. No qualifications were made because no positive results were detected in this sequence and valid not-detected results were obtained from the other column. (See ref. 6.)

7. Two consecutive pesticide calibration check standards (PEM16 and PEM18) exhibited out-of-control percent differences on the DB-1701 column for 4,4'-DDT, but the laboratory did not stop analyses and recalibrate, as required by the SOW. In the analysis of PEM15 on the DB-608 column, methoxychlor exceeded SOW %D requirements. All 3 PEMs were part of an initial calibration (run before samples). (These outliers did not affect sample detection limits, however.) (See ref. 7.)

8. The laboratory misreported results for semivolatile blank SBLK01 and failed to convert instrument levels (on column) to final concentration units (ug per kg of soil). This had the effect of making a contractually non-compliant blank, which contained moderate phthalate levels above 5 times the CRQL, appear compliant. In addition, the laboratory indicated that internal standards were high by a factor of 2 in blanks. Positive results for certain phthalate compounds were qualified in samples at levels up to 10 times the instrument levels of the highest blank. (See ref. 8.)

9. All VOA analyses were repeated due to internal standard area criteria that were exceeded. Performance was acceptable in the reanalysis of two samples and still out-of-control in the reanalysis of three other samples. Positive and non-detected results were qualified as estimated. (See ref. 9.)

10. The initial VOA of 4 samples and the MS/MSD pair exhibited out-of-control system monitoring compound recoveries. Three samples and the MS/MSD pair exceeded criteria in the reanalyses. Positive and non-detected results were qualified as estimated. (See ref. 10.)

11. The VOA initial calibration run on August 26 was non-compliant with regards to the SOW criteria for RSD of response factors. The initial analysis of all samples was performed under this non-compliant calibration. The laboratory indicated that repairs to the purge and trap were performed in order to correct this problem. However, even the reanalysis of three samples were performed under this non-compliant calibration. No positive results other than blank contaminants were associated with RSD outliers, and only the RSD for chloromethane resulted in the qualification of detection limits as estimated. (See ref. 11 .)

12. The VOA reanalyses of samples CGG79 and CGG80 were performed seven days beyond the Region-III-recommended technical holding time of 14 days from sample collection to sample analysis. The SOW criteria for laboratory holding times of 10 days from receipt of samples to analysis was exceeded by 3 days (a smaller exceedence because of sample transfer from an RAS lab.). Non-detected results were qualified as estimated. (See ref. 12.)

13. Due to a laboratory software error, semivolatile surrogate recoveries were miscalculated as 2-fold greater than actual for all solid samples. This resulted in the laboratory repeating the extraction and analysis of samples CGG73 and CGG81. Calculation errors were later corrected by the laboratory and two sets of analytical results, both having compliant semivolatile surrogate recoveries, were submitted for these two samples. (See ref. 13.)

14. The laboratory submitted poorly-normalized pesticide chromatograms for several samples and standards. As a result, the reviewer could not visually verify the PCB component peaks found in sample CGG80 or the associated Aroclor 1260 standard. The SOW does not allow standard chromatograms to be normalized to solvent artifact peaks that prevent proper scaling of standard components, such as occured in this instance. (See ref. 14.)

15. The laboratory did not perform any pesticide fraction GPC calibration; this is required by the SOW. (See ref. 15.)

16. The pesticide fraction extraction of sample CGG80 was performed 36 days beyond the Region-III-recommended technical holding time of 7 days from sample collection to sample extraction. The SOW criteria for laboratory holding time of 10 days from receipt of sample to extraction was exceeded by 32 days. Positive and non-detected results were qualified as estimated. (See ref. 16.)

17. The semivolatile initial calibration mean response factors and associated RSDs were incorrectly calculated and reported on Form 6B and Form 7B for several compounds. The laboratory was unable to get their software to accept the low-point standard RRFs for the compounds 2,4-dinitrophenol, 4-nitrophenol, and 3,3'-dichlorobenzidine. The software produced an incorrect average of 5 points which included a zero-valued RRF in the calculation of mean and RSD. The reviewer manually corrected these errors. (See ref. 17.)

18. Semivolatile surrogate recoveries for two acid fraction surrogate compounds were very low for only the analysis of sample CGG81MSDRE and not for the other spiked and unspiked analyses of this sample. Recoveries of all matrix spike compounds were similarly low only in the MSD reanalysis, indicating poor laboratory extraction performance only for this analysis and not for the unspiked sample or the MS analysis. Data qualification was not appropriate for the unspiked sample. (In addition, slightly low recoveries for benzene in all VOA matrix spikes did not warrant qualification of any data.) (See refs. 18 and 13.)

19. The holding times from sample collection to extraction for the semivolatile analysis of samples CGG79 and CGG80 exceeded the seven-day limit recommended by Region III EPA for non-aqueous samples by one and five days, respectively. The laboratory exceeded their contractual holding time of 10 days from sample receipt to extraction only for the initial extraction of sample CGG80 (a one-day exceedence). Positive and non-detected results for non-PAH compounds were qualified as estimated in these samples. (See ref. 19.)

20. Positive results for methylene chloride and acetone less than 10 times the amounts in the blanks have been qualified as artifacts of blank contamination (B). Positive results for toluene less than five times the amount in the laboratory blanks also have been qualified (B). (See ref. 20.)

21. Positive results for semivolatile compounds associated with the internal standard $d_{12}$-perylene in the reanalysis of sample CGG81 have been qualified as estimated (J). The initial analysis of this sample provided acceptable quantitation limits for non-detected compounds. (See ref. 21.)

22. The percent differences between the sample results obtained on two different GC columns were greater than 25 percent for all reported pesticide compounds. For each compound, the lower of the two values obtained was reported by the reviewer. Results were qualified as estimated (J), except where superceded by the (R) qualifier. (See refs. 3 and 22.)

23. The initial calibration RSD significantly exceeded the QC limit of 30 percent (65.2 percent) for carbazole. Positive results and detection limits are considered estimated. Several other semivolatile RSDs exceeded 30 percent, but these other outliers were not severe and were associated with only non-detected results or compounds that were questioned by the blanks. (See ref. 17.)

24. The percent difference in the RRF exceeded 50 percent for chloromethane in the continuing calibration standard analyzed on August 26 and September 8. Detection limits are considered estimated in 3 samples. Other volatile continuing calibration RRFs exceeded 25 %D but were associated only with non-detected results or compounds questioned by the blank. (See ref. 23.)

25. The percent difference in the RRF exceeded 25 percent for indeno(1,2,3-c,d)pyrene and benzo(g,h,i)perylene in the September 2 continuing calibration. Positive results were qualified as estimated. Other semivolatile continuing calibration outliers occured but were associated only with non-detected results or compounds questioned by the blank. (See ref. 24.)

26. Several pesticides were identified based upon GC retention times alone because detected levels were too low for confirmation by GC/MS. For 4,4'-DDD and 4,4'-DDE in samples CGG79 and CGG81, the related parent compound to these degradation products (DDT) was not detected in either sample. Because only one or two DDT analogs were detected in each sample, it is possible that unrelated compounds could have caused false positives for these pesticides. Results were coded (R) to indicate that further information (site history or additional sampling results) would be necessary to confirm the presence or absence of these compounds.

27. Field duplicate results for samples CGG79 and CGG80 revealed different compounds detected in the pesticide/PCB fraction. No qualifications were made, and all results were near or below the quantitation limit. Semivolatile results also exhibited some variations in PAH concentrations, particularly in results that were below the quantitation limit. Region III EPA policy directs that there be no qualifications based solely upon field duplicate precision results. (See ref. 25.)

28. The precision of concentrations of unspiked compounds detected in the matrix spikes, matrix spike duplicates, and associated unspiked samples were evaluated. No qualifications were made based upon these data, in accordance with EPA Region 3 policy. (Ref. 26 contains tabulations of the percent RSD for each compound.)

# APPENDIX F

# SUPPORT DOCUMENTATION

3F

# SOIL PESTICIDE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: PRECISION_A_L Contract:

Lab Code: PRECIS Case No.: SMO002 SAS No.: 7453C0 SDG No.: CGG72

Matrix Spike - EPA Sample No.: CGG73RE

| COMPOUND | SPIKE ADDED (ug/Kg) | SAMPLE CONCENTRATION (ug/Kg) | MS CONCENTRATION (ug/Kg) | MS % REC # | QC LIMITS REC. |
|---|---|---|---|---|---|
| gamma-BHC (Lindane) | 14.200 | 0 | 4.72 | 33 * | 46-127 |
| Heptachlor | 14.200 | 0 | 10.2 | 72 | 35-130 |
| Aldrin | 14.200 | 0 | 9.28 | 65 | 34-132 |
| Dieldrin | 28.400 | 0 | 14.8 | 52 | 31-134 |
| drin | 28.400 | 0 | 15.3 | 54 | 42-139 |
| 4'-DDT | 28.400 | 0 | 15.8 | 56 | 23-134 |

| COMPOUND | SPIKE ADDED (ug/Kg) | MSD CONCENTRATION (ug/Kg) | MSD % REC # | % RPD # | QC LIMITS RPD | QC LIMITS REC. |
|---|---|---|---|---|---|---|
| gamma-BHC (Lindane) | 13.900 | 5.41 | 39 * | -17 | 50 | 46-127 |
| Heptachlor | 13.900 | 11.9 | 86 | -18 | 31 | 35-130 |
| Aldrin | 13.900 | 11.7 | 84 | -26 | 43 | 34-132 |
| Dieldrin | 27.800 | 18.7 | 67 | -25 | 38 | 31-134 |
| drin | 27.800 | 19.5 | 70 | -26 | 45 | 42-139 |
| 4'-DDT | 27.800 | 17.3 | 62 | -10 | 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

Reextractions much better than initial! Lab improved performance

COMMENTS:

No pos. reliable detections, no design.

ref.2 001027

8D
PESTICIDE ANALYTICAL SEQUENCE

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SM0002 SAS No.: 7453C01 SDG No.: CGG72

GC Column: DB-1701 ID: 0.53(mm) Init. Calib. Date(s): 09/18/92 09/18/92

Instrument ID: H5890B (NUMEROUS RUNS TCX, DCB OUTSIDE RT WINDOWS)

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
TCX: 9.94 DCB: 36.60

(Injected simultaneous to DB608 column)

| | EPA SAMPLE NO. | LAB SAMPLE ID | DATE ANALYZED | TIME ANALYZED | TCX RT # | DCB RT # |
|---|---|---|---|---|---|---|
| 01 | AR123205 | AR123205 | 09/11/92 | 0907 | 9.93 | 36.58 |
| 02 | RESC05 | RESC05 | 09/18/92 | 1050 | 9.97 | 36.60 |
| 03 | PEM13 | PEM13 | 09/18/92 | 1144 | 9.95 | 36.60 |
| 04 | AR166005 | AR166005 | 09/18/92 | 1235 | 9.93 | 36.58 |
| 05 | AR122105 | AR122105 | 09/18/92 | 1327 | 9.95 | 36.58 |
| 06 | AR124209 | AR124209 | 09/18/92 | 1526 | 9.93 | 36.61 |
| 07 | AR124805 | AR124805 | 09/18/92 | 1617 | 9.95 | 36.60 |
| 08 | AR125405 | AR125405 | 09/18/92 | 1708 | 9.95 | 36.62 |
| 09 | TOXAPH05 | TOXAPH05 | 09/18/92 | 1759 | 9.95 | 36.60 |
| 10 | INDAL05 | INDAL05 | 09/18/92 | 1850 | 9.95 | 36.60 |
| 11 | INDBL05 | INDBL05 | 09/18/92 | 1941 | 9.93 | 36.58 |
| 12 | INDAM10 | INDAM10 | 09/18/92 | 2032 | 9.95 | 36.62 |
| 13 | INDBM10 | INDBM10 | 09/18/92 | 2123 | 9.95 | 36.63 |
| 14 | INDAH05 | INDAH05 | 09/18/92 | 2214 | 9.93 | 36.58 |
| 15 | INDBH05 | INDBH05 | 09/18/92 | 2305 | 9.93 | 36.57 |
| 16 | PIBLK20 | PIBLK20 | 09/18/92 | 2356 | 9.93 | 36.57 |
| 17 | PEM14 | PEM14 | 09/19/92 | 0047 | 9.93 | 36.60 |
| 18 | PBLK6 | PBLK6 | 09/19/92 | 0139 | 9.88 * | 36.38 * |
| 19 | CGG73MSRE | 8251-3MSRE | 09/19/92 | 0230 | 9.88 * | 36.38 * |
| 20 | CGG73MSDRE | 8251-3MSDRE | 09/19/92 | 0321 | 9.88 * | 36.38 * |
| 21 | CGG73RE | 8251-3RE | 09/19/92 | 0412 | 9.88 * | 36.38 * |
| 22 | CGG72RE | 8251-2RE | 09/19/92 | 0503 | 9.88 * | 36.3 |
| 23 | CGG79RE | 8303-1RE | 09/19/92 | 0554 | 9.88 * | 36.38 * |
| 24 | CGG81RE | 8251-1RE | 09/19/92 | 0645 | 9.90 | 36.38 * |
| all out 25 | PIBLK21 | PIBLK21 | 09/19/92 | 0736 | 9.88 * | 36.38 * |
| 26 | INDAM11 | INDAM11 | 09/19/92 | 0827 | 9.88 * | 36.38 * |
| 27 | INDBM11 | INDBM11 | 09/19/92 | 0918 | 9.88 * | 36.38 * |

QC LIMITS
TCX = Tetrachloro-m-xylene (+/- 0.05 MINUTES)
DCB = Decachlorobiphenyl (+/- 0.10 MINUTES)

# Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

ref.2 001005

7E

PESTICIDE CALIBRATION VERIFICATION SUMMARY

Out of control RTs

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SM0002 SAS No.: 7453C01 SDG No.: CGG72

GC Column: DB-1701 ID: 0.53(mm) Init. Calib. Date(s): 09/18/92 09/18/92

EPA Sample No. (PIBLK): PIBLK21 Date Analyzed : 09/19/92

Lab Sample ID (PIBLK): PIBLK21 Time Analyzed : 0736

EPA Sample No. (INDA): INDAM11 Date Analyzed : 09/19/92

Lab Sample ID (INDA): INDAM11 Time Analyzed : 0827

| INDIVIDUAL MIX A COMPOUND | RT | RT WINDOW FROM | RT WINDOW TO | CALC AMOUNT (ng) | NOM AMOUNT (ng) | RPD |
|---|---|---|---|---|---|---|
| alpha-BHC | 13.67 | 13.68 | 13.78 | 0.0192 | 0.0200 | 4.0 |
| gamma-BHC (Lindane) | 15.30 | 15.32 | 15.42 | 0.0190 | 0.0200 | 5.0 |
| Heptachlor | 16.12 | 16.15 | 16.25 | 0.0191 | 0.0200 | 4.5 |
| Endosulfan I | 21.05 | 21.07 | 21.21 | 0.0191 | 0.0200 | 4.5 |
| Dieldrin | 22.48 | 22.52 | 22.66 | 0.0380 | 0.0400 | 5.0 |
| Endrin | 23.30 | 23.33 | 23.47 | 0.0341 | 0.0400 | 14.8 |
| 4,4'-DDD | 24.80 | 24.84 | 24.98 | 0.0387 | 0.0400 | 3.2 |
| 4,4'-DDT | 25.45 | 25.49 | 25.63 | 0.0392 | 0.0400 | 2.0 |
| Methoxychlor | 28.12 | 28.17 | 28.31 | 0.200 | 0.200 | 0.0 |
| Tetrachloro-m-xylene ORTW | 9.88 | 9.89 | 9.99 | 0.0191 | 0.0200 | 4.5 |
| Decachlorobiphenyl ORTW | 36.38 | 36.50 | 36.70 | 0.0390 | 0.0400 | 2.5 |

All RTs out of windows

EPA Sample No. (INDB): INDBM11 Date Analyzed : 09/19/92

Lab Sample ID (INDB): INDBM11 Time Analyzed : 0918

| INDIVIDUAL MIX B COMPOUND | RT | RT WINDOW FROM | RT WINDOW TO | CALC AMOUNT (ng) | NOM AMOUNT (ng) | RPD |
|---|---|---|---|---|---|---|
| beta-BHC | 18.25 | 18.28 | 18.38 | 0.0198 | 0.0200 | 1.0 |
| delta-BHC | 19.27 | 19.30 | 19.40 | 0.0197 | 0.0200 | 1.5 |
| Aldrin | 17.25 | 17.29 | 17.39 | 0.0198 | 0.0200 | 1.0 |
| Heptachlor epoxide | 19.95 | 19.97 | 20.11 | 0.0172 | 0.0200 | 14.0 |
| 4,4'-DDE | 21.73 | 21.76 | 21.90 | 0.0388 | 0.0400 | 3.0 |
| Endosulfan II | 25.17 | 25.19 | 25.33 | 0.0402 | 0.0400 | 0.5 |
| Endosulfan sulfate | 28.45 | 28.51 | 28.65 | 0.0394 | 0.0400 | 1.5 |
| Endrin ketone | 30.83 | 30.92 | 31.06 | 0.0401 | 0.0400 | 0.2 |
| Endrin aldehyde | 26.97 | 27.02 | 27.16 | 0.0381 | 0.0400 | 4.8 |
| alpha-Chlordane | 21.43 | 21.46 | 21.60 | 0.0194 | 0.0200 | 3.0 |
| gamma-Chlordane | 21.23 | 21.25 | 21.39 | 0.0202 | 0.0200 | 1.0 |
| Tetrachloro-m-xylene ORTW | 9.88 | 9.89 | 9.99 | 0.0211 | 0.0200 | 5.5 |
| Decachlorobiphenyl ORTW | 36.38 | 36.50 | 36.70 | 0.0416 | 0.0400 | 4.0 |

All RTs outside windows

QC LIMITS: RPD of amounts in the Individual Mixes must be less than or equal to 25.0%

ref.2

001026

8D
PESTICIDE ANALYTICAL SEQUENCE

Lab Name: PRECISION A L  Contract: _____

Lab Code: PRECIS  Case No.: SM0002  SAS No.: 7453C01  SDG No.: CGG72

GC Column: DB-608  ID: 0.53(mm)  Init. Calib. Date(s): 09/18/92  09/18/92

Instrument ID: H5890A

Numerous RUNS OUTSIDE RT WINDOWS & PEM OUT, TOO (ICAL NONCOMPLIANT)

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

PEM 13 Non compliant RT shift outside window for initial calib

MEAN SURROGATE RT FROM INITIAL CALIBRATION
TCX: 10.56  DCB: 44.91

| | | EPA SAMPLE NO. | LAB SAMPLE ID | DATE ANALYZED | TIME ANALYZED | TCX RT # | DCB RT # |
|---|---|---|---|---|---|---|---|
| | 01 | AR123205 | AR123205 | 09/11/92 | 0907 | 10.58 | 44.83 |
| | 02 | RESC05 | RESC05 | 09/18/92 | 1050 | 10.60 | 44.85 |
| ORTW | 03 | PEM13 ☆ | PEM13 NC | 09/18/92 | 1144 | 10.57 | 44.80 * |
| | 04 | AR166005 | AR166005 | 09/18/92 | 1235 | 10.55 | 44.80 * |
| | 05 | AR122105 | AR122105 | 09/18/92 | 1327 | 10.55 | 44.7[illegible] |
| | 06 | AR124209 | AR124209 | 09/18/92 | 1526 | 10.55 | 44.80 * |
| | 07 | AR124805 | AR124805 | 09/18/92 | 1617 | 10.55 | 44.82 |
| | 08 | AR125405 | AR125405 | 09/18/92 | 1708 | 10.55 | 44.80 * |
| | 09 | TOXAPH05 | TOXAPH05 | 09/18/92 | 1759 | 10.55 | 44.82 |
| | 10 | INDAL05 | INDAL05 | 09/18/92 | 1850 | 10.55 | 44.82 |
| | 11 | INDBL05 | INDBL05 | 09/18/92 | 1941 | 10.55 | 44.78 * |
| | 12 | INDAM10 | INDAM10 | 09/18/92 | 2032 | 10.55 | 44.92 |
| | 13 | INDBM10 | INDBM10 | 09/18/92 | 2123 | 10.57 | 44.93 |
| | 14 | INDAH05 | INDAH05 | 09/18/92 | 2214 | 10.57 | 45.00 |
| | 15 | INDBH05 | INDBH05 | 09/18/92 | 2305 | 10.57 | 44.97 |
| | 16 | PIBLK20 | PIBLK20 | 09/18/92 | 2356 | 10.57 | 44.93 |
| | 17 | PEM14 | PEM14 | 09/19/92 | 0047 | 10.57 | 44.92 |
| | 18 | PBLK6 | PBLK6 | 09/19/92 | 0139 | 10.53 | 44.78 * |
| | 19 | CGG73MSRE | 8251-3MSRE | 09/19/92 | 0230 | 10.55 | 44.75 * |
| | 20 | CGG73MSDRE | 8251-3MSDRE | 09/19/92 | 0321 | 10.55 | 44.78 * |
| | 21 | CGG73RE | 8251-3RE | 09/19/92 | 0412 | 10.55 | 44.7[illegible] * |
| | 22 | CGG72RE | 8251-2RE | 09/19/92 | 0503 | 10.55 | 44.7[illegible] * |
| | 23 | CGG79RE | 8303-1RE | 09/19/92 | 0554 | 10.55 | 44.80 * |
| | 24 | CGG81RE | 8251-1RE | 09/19/92 | 0645 | 10.55 | 44.80 * |
| none out | 25 | PIBLK21 | PIBLK21 | 09/19/92 | 0736 | 10.55 | 44.80 * |
| ORTW | 26 | INDAM11 ☆ | INDAM11 NC | 09/19/92 | 0827 | 10.55 | 44.80 * |
| | 27 | INDBM11 ☆ | INDBM11 NC | 09/19/92 | 0918 | 10.55 | 44.78 * |

QC LIMITS
TCX = Tetrachloro-m-xylene (+/- 0.05 MINUTES)
DCB = Decachlorobiphenyl (+/- 0.10 MINUTES)

# Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

magnitude of shift on DB608 NOT as serious for compounds eluting before or = endrin. Compounds after endrin may have more severe shift since DCB shift much larger than TCX shift. See MS/MS RT DATA


FORM VIII PEST 3/90

Site Name: Phillips Landfill
Project No.: 3738-06

**IRDAS NOTES**

1. Results for beryllium, cadmium, nickel, and silver that were less than five times the maximum laboratory blank contamination (the action level), adjusted for matrix and dilutions, were qualified (B). Negative zinc results with absolute values greater than both the IDL and the CRDL were reported in every initial calibration blank, several continuing calibration blanks, and the preparation blank. The zinc results were considered to be biased low and have been qualified (L). See the support documentation, ref. 1.

2. Results for selenium that were less than five times the maximum laboratory blank contamination (the action level), adjusted for matrix and dilutions, were qualified (B). See the support documentation, ref. 1.

3. Detection limits for silver in sample MCHG12 may be biased low because of matrix spike recovery less than 75 percent, and detection limits for antimony in sample MCHG12 were considered to be unreliable because of matrix spike recovery less than 30 percent. See the support documentation, ref. 2

4. Positive results for lead and thallium for which the GFAA PDS recovery was less than 85 percent or greater than 125 percent were qualified (J), estimated. Detection limits for thallium in MCHG12 were considered to be biased low because of matrix spike recovery below 75 percent and GFAA PDS recovery less than 85 percent. See the support documentation, refs 2 and 3.

5. The cyanide result in MCHG12 was considered to be biased low because matrix spike recovery was less than 75 percent. See the support documentation, ref. 2

6. Positive results for aluminum, calcium, chromium, iron, magnesium, and manganese in sample MCHG12 were qualified (J), estimated, where serial dilution %D exceeded 10 percent and the initial sample result was greater than 50 times the IDL. See the support documentation, ref. 4.

7. The laboratory should have run an ICP CRDL standard for lead at 60 ug/l.

8. There is some confusion with regard to the Form XIVs and GFAA data. According to the Form XIVs for lead, no usable result was ever obtained for sample MCHG12, and the only PDS values recorded were -3276.7 percent and -9999.9 percent. Since the lead result for MCHG12 was not obtained from MSA or ICP analysis, the reviewer searched the raw data and determined that the result obtained on October 16 at 16:58 was the source of the result reported on the Form I, even though this sample was not marked with an X on Form XIV. The GFAA PDS value was calculated by the reviewer to be approximately 127 percent, not -9999.9 percent as reported on the Form XIV. (See ref. 5.)

9. The units for Form VA for mercury were incorrect. The raw data results were shown in ug/l, which was inconsistent with the units of mg/kg listed on the form. (See ref. 2.)

Metal Se
IDL F1: 3.7 ug/l
F4: 3.1
U = < IDL F5: 3.6

# Graphite Furnace Spike Recovery Evaluation Form

Ref. 6

| | 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 | |
|---|---|---|---|---|---|---|---|---|
| F4 | MCHG15 | -1.816 | 83.53 | -1.427 | 101.17 | | 3.1 U | ✓ |
| | 23 | .399 | 90.24 | | | | 3.1 U | ✓ |
| | 24 | .5265 | 79.44 | | | | 3.1 U | ✓ |
| | 25 | -1.427 | 54.01 | -1.816 | 75.4 | | 3.1 U | ✓ |
| F1 | 01 | 4.7225 | 51.63 | | | ~~6.832~~ 3.926 | 6.9 | ✓ |
| | 02 | 2.671 | 94.06 | | | | 3.7 U | ✓ |
| | 05 | 0.662 | 91.67 | | | | 3.7 U | ✓ |
| | 06 | 1.1055 | 98.88 | | | | 3.7 U | ✓ |
| | 07 | 7.388 | 71.76 | | | 9.195 | 8.2 | ✓ |
| | 08 | 5.4105 | 82.75 | 6.6875 | 69.99 | 8.783 | 8.8 | ✓ |
| | 13 | 1.3275 | 96.45 | | | | 3.7 U | ✓ |
| | 14 | 1.2165 | 98.86 | | | | 3.7 U | ✓ |
| | 16 | 1.8855 | 85.7 | | | | 3.7 U | ✓ |
| | 17 | 1.8855 | 88.08 | | | | 3.7 U | ✓ |
| | ~~08~~ | ~~6.6875~~ | ~~69.99~~ | | | | ~~6.9~~ | |
| F5 | 09 | 6.3465 | 38.13 | 1.084 | 99.95 | | 0.94 U ~~2.69~~ | ms/ks ✓ |
| .721 .773 | 10 | 6.208 | 71.17 | 0.6185 | 96.68 | | 0.85 U | ✓ |
| .739 | 11 | 6.202 | 46.73 | | | ~~8.984~~ 8.986 | 2.3 | ✓ |
| .672 | 18 | 6.343 | 75.64 ✓ | | | ~~8.546~~ 6.546 | 1.9 | ✓ |
| .798 | 19 | 6.065 | 59.59 | 2.644 | 88.62 | | 0.88 U ~~0.92~~ | ✓ |
| .817 | 20 | 5.5055 | 84.05 | 3.899 | 85.61 | | 0.92 | ✓ |
| .751 | 21 | 6.62 | 78.7 | | | 7.916 | 1.5 | ✓ |
| .75 | 22 | 6.064 | 90.14 | | | | 1.6 | ✓ |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

U.S. EPA - CLP

8

STANDARD ADDITION RESULTS

Ref. 7

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0109

Lab Code: SKINER Case No.: 18622 SAS No.: SDG No.: MCHG09

Concentration Units: ug/L

| EPA Sample No. | An | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MCHG09 | AS | 0.118 | 10.00 | 0.144 | 20.00 | 0.169 | 30.00 | 0.197 | 44.9 | 0.9997 | |
| MCHG10 | AS | 0.093 | 10.00 | 0.116 | 20.00 | 0.147 | 30.00 | 0.165 | 37.7 | 0.9954 | |
| MCHG11 | AS | 0.086 | 10.00 | 0.099 | 20.00 | 0.141 | 30.00 | 0.160 | 31.0 | 0.9799 | * + |
| MCHG11 | AS | 0.070 | 10.00 | 0.102 | 20.00 | 0.145 | 30.00 | 0.175 | 19.4 | 0.9977 | |
| MCHG18D | AS | 0.111 | 10.00 | 0.145 | 20.00 | 0.177 | 30.00 | 0.203 | 36.6 | 0.9982 | |
| MCHG20 | AS | 0.074 | 10.00 | 0.105 | 20.00 | 0.149 | 30.00 | 0.189 | 18.2 | 0.9977 | |
| MCHG21 | AS | 0.054 | 10.00 | 0.068 | 20.00 | 0.102 | 30.00 | 0.142 | 15.7 | 0.9805 | * + |
| MCHG21 | AS | 0.054 | 10.00 | 0.070 | 20.00 | 0.094 | 30.00 | 0.124 | 21.5 | 0.9911 | + |
| MCHG22 | AS | 0.094 | 10.00 | 0.112 | 20.00 | 0.142 | 30.00 | 0.222 | 19.4 | 0.9442 | * + |
| MCHG22 | AS | 0.061 | 10.00 | 0.085 | 20.00 | 0.123 | 30.00 | 0.148 | 19.9 | 0.9959 | |
| MCHG18 | PB | 0.109 | 10.00 | 0.142 | 20.00 | 0.196 | 30.00 | 0.201 | 34.1 | 0.9618 | * + |
| MCHG18 | PB | 0.114 | 10.00 | 0.147 | 20.00 | 0.174 | 30.00 | 0.199 | 41.2 | 0.9979 | |
| MCHG18D | PB | 0.130 | 10.00 | 0.155 | 20.00 | 0.192 | 30.00 | 0.236 | 35.2 | 0.9928 | * + |
| MCHG18D | PB | 0.121 | 10.00 | 0.145 | 20.00 | 0.181 | 30.00 | 0.220 | 35.1 | 0.9946 | + |
| MCHG19 | PB | 0.111 | 10.00 | 0.139 | 20.00 | 0.177 | 30.00 | 0.212 | 31.8 | 0.9982 | |
| MCHG11 | SE | 0.023 | 5.00 | 0.042 | 10.00 | 0.051 | 15.00 | 0.066 | 9.0 | 0.9913 | * + |
| MCHG11 | SE | 0.018 | 5.00 | 0.035 | 10.00 | 0.043 | 15.00 | 0.062 | 6.6 | 0.9895 | + |
| MCHG18 | SE | 0.027 | 5.00 | 0.041 | 10.00 | 0.067 | 15.00 | 0.083 | 6.5 | 0.9934 | * + |
| MCHG18 | SE | 0.028 | 5.00 | 0.042 | 10.00 | 0.054 | 15.00 | 0.076 | 8.5 | 0.9906 | + |
| MCHG21 | SE | 0.025 | 5.00 | 0.047 | 10.00 | 0.068 | 15.00 | 0.081 | 7.1 | 0.9937 | * + |
| MCHG21 | SE | 0.023 | 5.00 | 0.038 | 10.00 | 0.062 | 15.00 | 0.077 | 5.9 | 0.9954 | |

* Result not used; no action

.031

Field Duplicates Worksheet
Case 18622, Unfiltered Water

| Analyte | MCHG07 Sample (ug/l) | MCHG08 Duplicate (ug/l) | RPD (%) |
|---|---|---|---|
| Aluminum | 516.00 | 490.00 | 5.17 |
| Antimony | | | IN |
| Arsenic | 6.20 | 4.90 | 23.42 |
| Barium | 163.00 | 163.00 | 0.00 |
| Beryllium | | | IN |
| Cadmium | | | IN |
| Calcium | 96700.00 | 96600.00 | 0.10 |
| Chromium | | | IN |
| Cobalt | | | IN |
| Copper | 6.60 | 13.60 | -69.31 |
| Iron | 1090.00 | 1110.00 | -1.82 |
| Lead | 3.00 B | | IN |
| Magnesium | 49400.00 | 49600.00 | -0.40 |
| Manganese | 619.00 | 617.00 | 0.32 |
| Mercury | 0.21 | 0.2 U | IN |
| Nickel | 6.80 B | 8.00 B | ~~16.22~~ IN |
| Potassium | 400000.00 | 364000.00 | 9.42 |
| Selenium | 8.20 | 8.80 | -7.06 |
| Silver | | | IN |
| Sodium | 161000.00 | 157000.00 | 2.52 |
| Thallium | | | IN |
| Vanadium | 4.90 B | 4.30 B | ~~13.04~~ IN |
| Zinc | | 13.70 B | IN |
| Cyanide | 572.00 | 592.00 | -3.44 |

B = Attributed to blank contamination
IN = Indeterminate
U = Not detected; value = detection limit

Pg. 3

Field Duplicates Worksheet
Case 18622, Unfiltered Water

| Analyte | MCHG01 Sample (ug/l) | MCHG02 Duplicate (ug/l) | RPD (%) |
|---|---|---|---|
| Aluminum | 20300.00 | 18500.00 | 9.28 |
| Antimony | | | IN |
| Arsenic | 7.30 | 9.00 | -20.86 |
| Barium | 305.00 | 321.00 | -5.11 |
| Beryllium | 2.30 | 1.80 | 24.39 |
| Cadmium | | | IN |
| Calcium | 115000.00 | 112000.00 | 2.64 |
| Chromium | 43.90 | 39.50 | 10.55 |
| Cobalt | 29.80 | 23.50 | 23.64 |
| Copper | 54.70 | 43.20 | 23.49 |
| Iron | 40600.00 | 40000.00 | 1.49 |
| Lead | 53.50 | 39.10 | 31.10 |
| Magnesium | 36200.00 | 36100.00 | 0.28 |
| Manganese | 1380.00 | 1010.00 | 30.96 |
| Mercury | 0.71 | 0.35 | 67.92 |
| Nickel | 39.50 | 37.50 | 5.19 |
| Potassium | 150000.00 | 151000.00 | -0.66 |
| Selenium | 6.90 | 3.7U | IN |
| Silver | | | IN |
| Sodium | 120000.00 | 122000.00 | -1.65 |
| Thallium | | | IN |
| Vanadium | 43.10 | 37.60 | 13.63 |
| Zinc | 136.00 | 121.00 | 11.67 |
| Cyanide | 68.60 | 79.00 | -14.09 |

at least 60%; however, within range affected by low-level variation near IDL; no action

U = Not detected; value = detection limit
IN = Indeterminate

Ref. 3

Field Duplicates Worksheet
Case 18622, Sediment

| Analyte | MCHG10 Sample (mg/kg) | MCHG11 Duplicate (mg/kg) | RPD (%) |
|---|---|---|---|
| Aluminum | 6740.00 | 15700.00 | ~~79.86~~ |
| Antimony | | | IN |
| Arsenic | 8.90 | 5.00 | 56.12 |
| Barium | 102.00 | 149.00 | -37.45 |
| Beryllium | 0.56 | 1.80 | -105.08 |
| Cadmium | | | IN |
| Calcium | 103000.00 | 88200.00 | 15.48 |
| Chromium | 13.70 | 24.40 | -56.17 |
| Cobalt | 6.20 | 6.90 | -10.69 |
| Copper | 15.40 | 15.50 | -0.65 |
| Iron | 13900.00 | 14200.00 | -2.14 |
| Lead | 17.10 | 13.90 | 20.65 |
| Magnesium | 4530.00 | 14400.00 | -104.28 |
| Manganese | 711.00 | 2630.00 | -114.88 |
| Mercury | | | IN |
| Nickel | 13.00 | 15.60 | -18.18 |
| Potassium | 2250.00 | 2310.00 | -2.63 |
| Selenium | R ~~0.054~~ | 2.30 | IN |
| Silver | | | IN |
| Sodium | 382.00 | 584.00 | -41.82 |
| Thallium | | | IN |
| Vanadium | 14.80 | 20.70 | -33.24 |
| Zinc | 55.40 | 59.50 | -7.14 |
| Cyanide | 0.96 | 0.89 | 7.57 |

R = Datum rejected due to very low spike recovery

IN = Indeterminate

Ref. 3

Field Duplicates Worksheet
Case 18622, Filtered Water

| Analyte | MCHG23 Sample (ug/l) | MCHG24 Duplicate (ug/l) | RPD (%) |
|---|---|---|---|
| Aluminum | 45.50 B | 32.20 B | ~~34.23~~ IN |
| Antimony | | 17.10 B | IN |
| Arsenic | | | IN |
| Barium | 91.60 | 93.10 | -1.62 |
| Beryllium | | | IN |
| Cadmium | | | IN |
| Calcium | 106000.00 | 110000.00 | -3.70 |
| Chromium | | | IN |
| Cobalt | | 3.00 B | IN |
| Copper | 3.70 B | 4.70 B | ~~-23.81~~ IN |
| Iron | 69.00 B | 62.60 B | ~~9.73~~ IN |
| Lead | | | IN |
| Magnesium | 30400.00 | 31600.00 | -3.87 |
| Manganese | 144.00 | 178.00 | -21.12 |
| Mercury | | | IN |
| Nickel | | | IN |
| Potassium | 142000.00 | 144000.00 | -1.40 |
| Selenium | | | IN |
| Silver | | | IN |
| Sodium | 119000.00 | 125000.00 | -4.92 |
| Thallium | | | IN |
| Vanadium | | | IN |
| Zinc | 17.90 B | 23.60 B | ~~-27.47~~ IN |

B = Attributed to blank contamination

IN = Indeterminate

Pg. 3

ref. 3

CCG79 - Compounds Added

000725

| | | | | | | |
|---|---|---|---|---|---|---|
| 35 | 4,4'-DDT | 0.013! | 0.013! | 0.000 | 96083 | 26.383 |
| 36 | | | | | 38773 | 27.017 |
| 37 | | | | | 7894 | 28.367 |
| 38 | | | | | 67605 | 29.000 |
| 39 | | | | | 33461 | 30.083 |
| 40 | | | | | 120624 | 31.467 |
| 41 | | | | | 68998 | 32.283 |
| 42 | | | | | 167046 | 33.183 |
| 43 | | | | | 94402 | 37.400 |
| 44 | | | | | 30500 | 37.933 |
| 45 | | | | | 46244 | 38.400 |
| 46 | DCB | 0.057 | 0.057 | 0.000 | 1087125 | 43.550 |
| TOTAL | | 0.118!! | 0.118!! | | 6708469 | |

!! Result calculation based on peak response more than 10% outside of calibration range.
! Result calculation based on peak response ratio outside of calibration range.

DETECTOR: DB-1701

| PK# | Component Name | Solution Conc (ng/ul ) | Original Conc (ug/kg ) | Response Factor | Peak Area | Retention Time (minutes) |
|---|---|---|---|---|---|---|
| 1 | | | | | 1006335 | 1.683 |
| 2 | | | | | 275439 | 2.350 |
| 3 | | | | | 171105 | 2.833 |
| 4 | | | | | 149328 | 3.400 |
| 5 | | | | | 110193 | 3.750 |
| 6 | | | | | 184839 | 4.133 |
| 7 | | | | | 108230 | 5.050 |
| 8 | | | | | 64112 | 6.133 |
| 9 | | | | | 55229 | 7.317 |
| 10 | | | | | 138991 | 7.683 |
| 11 | | | | | 94094 | 8.417 |
| 12 | TCX | 0.025 | 0.025 | 0.000 | 388770 | 9.800 |
| 13 | | | | | 50869 | 10.350 |
| 14 | | | | | 29135 | 12.267 |
| 15 | | | | | 32136 | 19.467 |
| 16 | | | | | 13681 | 19.617 |
| 17 | | | | | 27833 | 20.183 |
| 18 | | | | | 36908 | 20.700 |
| 19 | G. CHLORDANE | 0.004!! | 0.004!! | 0.000 | 29626 | 21.117 |
| 20 | A. CHLORDANE | 0.004!! | 0.004!! | 0.000 | 37214 | 21.317 |
| 21 | 4,4'-DDE | 0.009!! | 0.009!! | 0.000 | 30915 | 21.617 |
| 22 | | | | | 44447 | 21.917 |
| 23 | | | | | 11238 | 22.133 |
| 24 | | | | | 36972 | 22.483 |
| 25 | | | | | 29045 | 22.867 |

ref.3 000724

MAXIMA (c)1990 Dynamic Solutions, Division of Millipore

# MAXIMA 820 CUSTOM REPORT

Printed: 28-SEP-1992 16:09:22

CGG79 – COMPOUNDS ADDED BY REVIEWER

SAMPLE: 9303-01 Type: UNKN

823 in Method: PESTICIDES 8080 Instrument: HP5890P

Acquired: 3-SEP-1992 12:36 Filename: 209EC034

Rate: 1.0 points/sec Index: Disk

Duration: 47.000 minutes Injection Volume: 1.0

Operator: JJB

DETECTOR: DB-608

| PK# | Component Name | Solution Conc (ng/ul ) | Original Conc (ug/kg ) | Response Factor | Peak Area | Retention Time (minutes) |
|---|---|---|---|---|---|---|
| 1 | | | | | 1110342 | 1.583 |
| 2 | | | | | 600665 | 1.783 |
| 3 | | | | | 327534 | 2.100 |
| 4 | | | | | 232905 | 2.383 |
| 5 | | | | | 94913 | 2.850 |
| 6 | | | | | 143338 | 3.650 |
| 7 | | | | | 70297 | 4.233 |
| 8 | | | | | 59673 | 6.217 |
| 9 | | | | | 478329 | 7.367 |
| 10 | | | | | 156856 | 8.133 |
| 11 | TCX | 0.023 | 0.023 | 0.000 | 430285 | 10.350 |
| 12 | | | | | 80512 | 11.900 |
| 13 | | | | | 6899 | 12.083 |
| 14 | | | | | 32222 | 13.000 |
| 15 | | | | | 24274 | 18.917 |
| 16 | | | | | 55409 | 19.183 |
| 17 | G. CHLORDANE | 0.004!! | 0.004!! | 0.000 | 47812 | 21.100 |
| 18 | | | | | 45556 | 21.267 |
| 19 | | | | | 12708 | 21.450 |
| 20 | | | | | 16785 | 21.633 |
| 21 | A. CHLORDANE | 0.003!! | 0.003!! | 0.000 | 30998 | 21.767 |
| 22 | | | | | 70368 | 22.283 |
| 23 | | | | | 29452 | 22.500 |
| 24 | 4,4'-DDE | 0.005!! | 0.005!! | 0.000 | 20086 | 22.783 |
| 25 | | | | | 11458 | 23.033 |
| 26 | | | | | 70126 | 23.467 |
| 27 | | | | | 136418 | 23.800 |
| 28 | | | | | 57293 | 24.183 |
| 29 | | | | | 53052 | 24.483 |
| 30 | 4,4'-DDD | 0.013 | 0.013 | 0.000 | 111630 | 25.100 |
| 31 | | | | | 83035 | 25.367 |
| 32 | | | | | 74419 | 25.700 |
| 33 | | | | | 45745 | 25.967 |
| 34 | | | | | 28338 | 26.133 |

2C

# WATER SEMIVOLATILE SURROGATE RECOVERY

Ref. 2

Lab Name: HYGIENIC LAB  Contract: 68-D0-0154

Lab Code: IOWA  Case No.: 18622  SAS No.:  SDG No.: CGG70

| | EPA SAMPLE NO. | S1 (NBZ)# | S2 (FBP)# | S3 (TPH)# | S4 (PHL)# | S5 (2FP)# | S6 (TBP)# | S7 (2CP)# | S8 (DCB)# | TOT OUT |
|---|---|---|---|---|---|---|---|---|---|---|
| 01 | CGG70 | 76 | 72 | 28 * | 70 | 67 | 87 | 83 | 73 | 1 |
| 02 | CGG71 | 76 | 71 | 29 * | 73 | 73 | 86 | 87 | 74 | 1 |
| 03 | CGG74 | 80 | 76 | 54 | 74 | 73 | 81 | 87 | 76 | 0 |
| 04 | CGG75 | 80 | 74 | 48 | 76 | 77 | 87 | 91 | 74 | 0 |
| 05 | CGG76 | 78 | 72 | 35 | 71 | 67 | 89 | 84 | 72 | 0 |
| 06 | CGG77 | 75 | 69 | 34 | 70 | 66 | 90 | 83 | 69 | 0 |
| 07 | CGG82 | 73 | 68 | 42 | 63 | 64 | 82 | 78 | 70 | 0 |
| 08 | CGG83 | 72 | 67 | 61 | 66 | 64 | 86 | 78 | 68 | 0 |
| 09 | CGG84 | 88 | 87 | 50 | 81 | 77 | 89 | 99 | 84 | 0 |
| 10 | CGG85 | 91 | 89 | 51 | 79 | 78 | 87 | 103 | 94 | 0 |
| 11 | CGG82MS | 75 | 66 | 40 | 69 | 68 | 78 | 85 | 70 | 0 |
| 12 | CGG82MSD | 72 | 66 | 43 | 65 | 64 | 81 | 77 | 68 | 0 |
| 13 | SBLK24 | 80 | 76 | 65 | 73 | 71 | 87 | 87 | 75 | 0 |

| | | QC LIMITS | |
|---|---|---|---|
| S1 (NBZ) | = Nitrobenzene-d5 | ( 35-114) | |
| S2 (FBP) | = 2-Fluorobiphenyl | ( 43-116) | |
| S3 (TPH) | = Terphenyl-d14 | ( 33-141) | |
| S4 (PHL) | = Phenol-d5 | ( 10-110) | |
| S5 (2FP) | = 2-Fluorophenol | ( 21-110) | |
| S6 (TBP) | = 2,4,6-Tribromophenol | ( 10-123) | |
| S7 (2CP) | = 2-Chlorophenol-d4 | ( 33-110) | (advisory) |
| S8 (DCB) | = 1,2-Dichlorobenzene-d4 | ( 16-110) | (advisory) |

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

* Only 1 surrogate out of compliance, >10%; no action

3C

# WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: HYGIENIC LAB Contract: 68-D0-0154 Ref. 3

Lab Code: IOWA Case No.: 18622 SAS No.: _____ SDG No.: CGG70

Matrix Spike - EPA Sample No.: CGG82

| COMPOUND | SPIKE ADDED (ug/L) | SAMPLE CONCENTRATION (ug/L) | MS CONCENTRATION (ug/L) | MS % REC # | QC LIMITS REC. |
|---|---|---|---|---|---|
| Phenol | 75.00 | 0 | 55.50 | 74 | 12-110 |
| 2-Chlorophenol | 75.00 | 0 | 53.00 | 71 | 27-123 |
| 1,4-Dichlorobenzene | 50.00 | 0 | 39.90 | 80 | 36- 97 |
| N-Nitroso-di-n-prop.(1) | 50.00 | 0 | 35.85 | 72 | 41-116 |
| 1,2,4-Trichlorobenzene | 50.00 | 0 | 35.50 | 71 | 39- 98 |
| 4-Chloro-3-methylphenol | 75.00 | 0 | 51.00 | 68 | 23- 97 |
| Acenaphthene | 50.00 | 0 | 33.00 | 66 * | 46-118 |
| 4-Nitrophenol | 75.00 | 0 | 65.50 | 87 * | 10- 80 |
| 2,4-Dinitrotoluene | 50.00 | 0 | 40.60 | 81 | 24- 96 |
| Pentachlorophenol | 75.00 | 0 | 44.30 | 59 | 9-103 |
| Pyrene | 50.00 | 0 | 32.15 | 64 | 26-127 |

| COMPOUND | SPIKE ADDED (ug/L) | MSD CONCENTRATION (ug/L) | MSD % REC # | % RPD # | QC LIMITS RPD | QC LIMITS REC. |
|---|---|---|---|---|---|---|
| Phenol | 75.00 | 53.00 | 71 | 4 | 42 | 12-110 |
| 2-Chlorophenol | 75.00 | 48.05 | 64 | 10 | 40 | 27-123 |
| 1,4-Dichlorobenzene | 50.00 | 35.90 | 72 | 11 | 28 | 36- 97 |
| N-Nitroso-di-n-prop.(1) | 50.00 | 32.65 | 65 | 10 | 38 | 41-116 |
| 1,2,4-Trichlorobenzene | 50.00 | 33.70 | 67 | 6 | 28 | 39- 98 |
| 4-Chloro-3-methylphenol | 75.00 | 50.50 | 67 | 1 | 42 | 23- 97 |
| Acenaphthene | 50.00 | 33.35 | 67 * | 2 | 31 | 46-118 |
| 4-Nitrophenol | 75.00 | 64.00 | 85 * | 2 | 50 | 10- 80 |
| 2,4-Dinitrotoluene | 50.00 | 38.60 | 77 | 5 | 38 | 24- 96 |
| Pentachlorophenol | 75.00 | 50.50 | 67 | 13 | 50 | 9-103 |
| Pyrene | 50.00 | 33.00 | 66 | 3 | 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: 0 out of 11 outside limits
Spike Recovery: 2 out of 22 outside limits

COMMENTS:

* No positive results; no action in MS data alone

FORM III SV-1 3/90

Metal Pb
IDL F3: 1 ug/l
F8: ~~[illegible]~~ 2.2
U = < IDL

Graphite Furnace Spike Recovery Evaluation Form

Ref. 6

| | 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 | |
|---|---|---|---|---|---|---|---|---|
| F8 | MCHG15 | 2.1995 | 102.78 | | | | 2.2U | ✓ |
| | 23 | 0.1045 | 89.51 | | | | 2.2U | ✓ |
| | 24 | 0.5225 | 96.13 | | | | 2.2U | ✓ |
| | 25 | 3.7795 | 101.76 | rerun not dil 3.779 | 106.26 | | 3.8 | ✓ |
| F8 | 01 | 53.4545 | 96.66 | | | | 53.5 | ✓ |
| | 02 | 39.10 | 100.96 | | | | 39.1 | ✓ |
| | 05 | 3.477 | 89.93 | | | | 3.5 | ✓ |
| | 06 | 6.276 | 89.09 | | | | 6.3 | ✓ |
| | 07 | 3.029 | 88.31 | 3.0285 | 90.72 | | 3.0 | ✓ |
| | 08 | 1.332 | 96.23 | | | | 2.2U | ✓ |
| | 13 | 11.0455 | 95.05 | | | | 11.0 | ✓ |
| | 14 | 5.732 | 87.41 | | | | 5.7 | ✓ |
| | 16 | 11.8805 | 92.9 | | | | 11.9 | ✓ |
| | 17 | 9.108 | 85.28 | | | | 9.1 | ✓ |
| F3 PDS .721 | 09 ~~07~~ | ~~11.13 3.0285~~ | ~~90.72~~ 102.32 | 23.884 x5 | 90.54 | | 31.3 | ✓ mg/kg |
| .773 | 10 | 72.103 | 107.52 | | | | 17.1 | ✓ |
| .739 | 11 | 53.541 | 86.06 | | | | 13.9 | ✓ |
| .672 | 18 | 999.999 | 0 | 24.9365 x5 | 75.15 | 824.13 ~~x5~~ 681.818 ~~x20~~ | 243 | ✓ |
| .798 | 19 | 127.5185 ✓ | 74.01 | 25.166 x5 | 84.77 | 159.238 ~~x5~~ | 39.1 | ✓ |
| .817 | 20 | 157.978 ✓ | 134.4 | 17.58 x10 | 98.2 | | 41.4 | ✓ |
| .751 | 21 | 999.999 | 0 | 14.328 x20 | 89.91 | | 71.3 | ✓ |
| .75 | 22 | 999.999 | 0 | 12.778 x20 | 86.22 | | 66.2 | ✓ |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

Metal Tl
IDL F3: 0.9 ug/l
F8: 1.6
U = < IDL

Ref 6

# 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 | |
|---|---|---|---|---|---|---|---|---|
| F8 | MCHG15 | .599 | 87.49 | | | | 1.6U | ✓ |
| | 23 | -.399 | 0 | 0.3995 x5 | 17 | | 8 ~~1.6U~~ | ✓ |
| | 24 | -.1995 | 0 | .2 x5 | 14.99 | | 8 ~~1.6U~~ | ✓ |
| | 25 | 0 | 12.99 | 0.4/.799 x5 | 9.99/21.01 | | 8 ~~1.6U~~ | ✓ |
| F8 | 01 | -1.3435 | 19.45 | -1.176 x5 | 30.53 | | 8 ~~1.6U~~ | ✓ |
| | 02 | -1.3435 | 22.85 | -1.679 x5 | 24.55 | | 8 ~~1.6U~~ | ✓ |
| | 05 | -1.343 | 42.54 | | | | 1.6U ~~1.6U~~ | ✓ |
| | 06 | -1.8465 | 39.96 | -2.0135 | 67.67 | | 1.6U | ✓ |
| | 07 | -2.5155 | 0 | -1.678 x5 | 0 | | 8 ~~1.6U~~ | ✓ |
| | 08 | -1.8465 | 0 | -1.679 x5 | 9.28 | | 8 ~~1.6~~ | ✓ |
| | 13 | -2.0135 | 18.6 | -1.511 x5 | 26.26 | | 8 ~~1.6U~~ | ✓ |
| | 14 | -1.679 | 93.15 | | | | 1.6U | ✓ |
| | 16 | -1.5115 | 38.25 | -2.0135 | 67.68 | | 8 ~~1.6U~~ | ✓ |
| | 17 | -1.679 | 17.75 | -1.8465 x5 | 36.53 | | 8 ~~1.6U~~ | ✓ |
| F3 .721 | 09 | 0.3825 | 111.16 | | | | 0.24U | ✓ |
| .773 | 10 | 0.382 | 79.47 | | | | 0.21U | ✓ |
| .739 | 11 | 0.382 | 89.32 | | | | 0.23U | ✓ |
| .672 | 18 | 0.9555 | 95.44 | | | | 0.28 | ✓ |
| .798 | 19 | 3.639 | 76.07 | | | | 0.89 | ✓ |
| .817 | 20 | 0.191 | 110.19 | | | | 0.21U | ✓ |
| .751 | 21 | 3.639 | 93.99 | | | | 0.91 | ✓ |
| .75 | 22 | 2.685 | 90.76 | | | | 0.7 | ✓ |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

ORIGINAL (Red)

ref. 11

000196

6A

# VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: PRECISION A L  Contract: _____

Lab Code: PRECIS  Case No.: SM0002  SAS No.: 7453C01  SDG No.: CGG72

Instrument ID: HPVOA  Calibration Date(s): 08/26/92  08/26/92

Heated Purge: (Y/N): Y  Calibration Times: 0936  1212

GC Column: DB-624  ID: 0.530 (mm)

QC noncompliant per SOW - Lab ran with it anyway! Data Review - S/Me High RSD

(6 compounds ≥ 20.5% RSD; SOW allows 2)

LAB FILE ID:  RRF10 = A8167  RRF20 = A8168

RRF50= A8166  RRF100= A8169  RRF200= A8170

| COMPOUND | | RRF10 | RRF20 | RRF50 | RRF100 | RRF200 | $\overline{RRF}$ | % RSD |
|---|---|---|---|---|---|---|---|---|
| Chloromethane | | 0.754 | 0.401 | 1.556 | 0.345 | 0.372 | 0.686 | 75.0 |
| Bromomethane | * | 1.313 | 1.128 | 1.857 | 1.194 | 1.192 | 1.337 | 22.3* |
| Vinyl Chloride | * | 0.997 | 0.906 | 1.848 | 0.929 | 0.943 | 1.125 | 36.1*‡ |
| Chloroethane | | 0.823 | 0.823 | 0.963 | 0.921 | 0.886 | 0.883 | 6.9 |
| Methylene Chloride | | 4.030 | 2.771 | 2.536 | 2.195 | 2.026 | 2.712 | 29.2 |
| Acetone | | 2.029 | 1.402 | 1.950 | 0.889 | 0.823 | 1.419 | 40.0 |
| Carbon Disulfide | | 3.955 | 3.823 | 4.760 | 4.599 | 4.556 | 4.339 | 9.7 |
| 1,1-Dichloroethene | * | 1.426 | 1.401 | 1.564 | 1.552 | 1.437 | 1.476 | 5.2* |
| 1,1-Dichloroethane | * | 3.169 | 3.119 | 3.409 | 3.440 | 3.310 | 3.289 | 4.3* |
| 1,2-Dichloroethene (total) | | 0.819 | 0.765 | 0.888 | 0.873 | 0.852 | 0.839 | 5.8 |
| Chloroform | * | 0.410 | 0.425 | 0.431 | 0.460 | 0.429 | 0.431 | 4.2* |
| 1,2-Dichloroethane | * | 2.056 | 2.115 | 1.797 | 2.158 | 2.639 | 2.153 | 14.2* |
| 2-Butanone | | 2.392 | 1.643 | 2.242 | 1.220 | 1.207 | 1.741 | 32.0*‡ |
| 1,1,1-Trichloroethane | * | 0.961 | 0.959 | 1.012 | 1.011 | 0.636 | 0.916 | 17.3* |
| Carbon Tetrachloride | * | 0.859 | 0.849 | 0.910 | 0.950 | 0.609 | 0.835 | 15.9* |
| Bromodichloromethane | * | 0.389 | 1.214 | 1.727 | 1.405 | 0.954 | 1.138 | 44.4**‡ |
| 1,2-Dichloropropane | | 0.428 | 0.482 | 0.418 | 0.552 | 0.379 | 0.452 | 14.8 |
| cis-1,3-Dichloropropene | * | 0.873 | 0.771 | 1.199 | 0.929 | 0.664 | 0.887 | 22.7* |
| Trichloroethene | * | 0.360 | 0.466 | 0.350 | 0.386 | 0.462 | 0.405 | 13.7* |
| Dibromochloromethane | * | 1.094 | 0.943 | 1.427 | 1.131 | 0.806 | 1.080 | 21.6* |
| 1,1,2-Trichloroethane | * | 0.491 | 0.412 | 0.639 | 0.495 | 0.387 | 0.485 | 20.3* |
| Benzene | * | 1.973 | 1.892 | 1.960 | 1.870 | 1.167 | 1.772 | 19.[illegible] |
| trans-1,3-Dichloropropene | * | 0.805 | 0.705 | 1.061 | 0.859 | 0.623 | 0.811 | 20.[illegible] |
| Bromoform | * | 0.870 | 0.723 | 1.185 | 0.905 | 0.663 | 0.869 | 23.4* |
| 4-Methyl-2-Pentanone | | 0.766 | 0.656 | 0.600 | 0.767 | 0.744 | 0.707 | 10.6 |
| 2-Hexanone | | 0.614 | 0.463 | 0.558 | 0.508 | 0.505 | 0.530 | 10.9 |
| Tetrachloroethene | * | 0.491 | 0.480 | 0.487 | 0.550 | 0.519 | 0.505 | 5.7* |
| 1,1,2,2-Tetrachloroethane | * | 0.767 | 0.710 | 0.700 | 0.784 | 0.798 | 0.752 | 5.9* |
| Toluene | * | 0.901 | 0.839 | 0.876 | 1.030 | 1.003 | 0.930 | 8.9* |
| Chlorobenzene | * | 1.016 | 1.023 | 1.076 | 1.224 | 1.181 | 1.104 | 8.5* |
| Ethylbenzene | * | 0.430 | 0.458 | 0.455 | 0.533 | 0.530 | 0.481 | 9.8* |
| Styrene | * | 0.900 | 0.939 | 1.015 | 1.200 | 1.221 | 1.055 | 14.0* |
| Xylene (total) | * | 0.553 | 0.508 | 0.581 | 0.658 | 0.647 | 0.589 | 10.8* |
| Toluene-d8 | | 1.758 | 1.405 | 1.511 | 1.524 | 1.546 | 1.549 | 8.3 |
| Bromofluorobenzene | * | 0.965 | 0.860 | 0.813 | 0.866 | 0.830 | 0.867 | 6.8* |
| 1,2-Dichloroethane-d4 | | 2.072 | 1.864 | 1.537 | 1.675 | 1.490 | 1.728 | 14.0 |

* Compounds with required minimum RRF and maximum %RSD values.
All other compounds must meet a minimum RRF of 0.010.

FORM VI VOA  3/90

* without high point, RSD = 29%

** without low point, RSD = 24%

‡ No positive detections not attributable to blank contamination; no action

ref. 11

CASE NARRATIVE

Lab Name: PRECISION A L
Case No.: SMO002
SDG No.: CGG72

Contract:
SAS No: 7453-C-01
Sample Analysis Price:

VOLATILE ORGANIC ANALYSIS

| Sample No. | EPA Sample No. | Lab Sample ID |
|---|---|---|
| CGG72 | CGG72 | 9208251-2 |
| CGG72RE | CGG72RE | 9208251-2RE |
| CGG73 | CGG73 | 9208251-3 |
| CGG73RE | CGG73RE | 9208251-3RE |
| CGG79 | CGG79 | 9208303-1 |
| CGG79RE | CGG79RE | 9208303-1RE |
| CGG80 | CGG80 | 9208303-2 |
| CGG80RE | CGG80RE | 9208303-2RE |
| CGG81 | CGG81 | 9208251-1 |
| CGG81RE | CGG81RE | 9208251-1RE |
| CGG81MS | CGG81MS | 9208251-1MS |
| CGG81MSD | CGG81MSD | 9208251-1MSD |
| CGG81MSDRE | CGG81MSDRE | 9208251-1MSDRE |
| CGG81MSRE | CGG81MSRE | 9208251-1MSRE |
| VBLK10 | VBLK10 | MBLK0826 |
| VBLK02 | VBLK02 | MBLK0902 |
| VBLK05 | VBLK05 | MBLK0909 |

1.) The instrument ID for Volatile Organic Analysis is HPVOA.

.) The Initial Calibration of 08/26/92 failed the QC criteria for an cceptable heated calibration. The samples were analyzed anyway in order to achieve the contract required hold times. The purge and trap was then repaired and a second and third initial calibration was analyzed which passed the criteria. Additionally, it was necessary to calibrate the 09/02/92 analyses against the 08/26/92 initial calibration. Both data packages for all of the above samples will be submitted for review.

3.) EPA Sample No.'s "CGG72,CGG73,CGG81,CGGMS,CGGMSD" were analyzed twice because of Internal Standards and SMC's that were beyond the QC limits. In both cases, the second analysis was identical. Both data packages are submitted for review.

4.) EPA Sample No.'s "CGG79,CGG80" were analyzed twice because the first analysis had Internal Standards and SMC's that were beyond the QC limits. However, upon reanalysis, the QC was in control but the samples were analyzed beyond the contract required holding times. Both data packages are submitted for review. The contractor will only be invoiced for the second analysis.

ref.9 000100

8A

# VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: PRECISION A L  Contract: _____

Lab Code: PRECIS  Case No.: SM0002  SAS No.: 7453C01  SDG No.: CGG72

Lab File ID (Standard): A9029  Date Analyzed: 09/02/92

Instrument ID: HPVOA  Time Analyzed: 1254

GC Column: DB-624  ID: 0.530(mm)  Heated Purge: (Y/N) Y

| | | IS1(BCM) AREA # | RT # | IS2(DFB) AREA # | RT # | IS3(CBZ) AREA # | RT # |
|---|---|---|---|---|---|---|---|
| | 12 HOUR STD | 41746 | 9.11 | 80830 | 11.53 | 104305 | 17.38 |
| | UPPER LIMIT | 83492 | 9.61 | 161660 | 12.03 | 208610 | 17.88 |
| | LOWER LIMIT | 20873 | 8.61 | 40415 | 11.03 | 52152 | 16.88 |
| | EPA SAMPLE NO. | | | | | | |
| 01 | CGG72RE | 67% 28093 | 9.09 | 68664 | 11.54 | 38% 40021 * | 17.35 |
| 02 | CGG73RE | 22481 | 9.09 | 46810 | 11.53 | 22% 22585 * | 17.35 |
| 03 | CGG79 | 28942 | 9.09 | 69373 | 11.53 | 38% 39146 * | 17.36 |
| 04 | CGG80 | 29915 | 9.09 | 69072 | 11.54 | 39% 40646 * | 17.36 |
| 05 | CGG81RE | 20950 | 9.09 | 66415 | 11.54 | 28% 28719 * | 17.36 |
| 06 | CGG81MSDRE | 22675 | 9.10 | 62119 | 11.52 | 31% 32563 * | 17.35 |
| 07 | CGG81MSRE | 32% 13527 * | 9.07 | 57344 | 11.53 | 34% 35820 * | 17.35 |
| 08 | VBLK02 | 40476 | 9.12 | 82276 | 11.54 | 75069 | 17.34 |

IS1 (BCM) = Bromochloromethane
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = + 100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = +0.50 minutes of internal standard RT.
RT LOWER LIMIT = -0.50 minutes of internal standard RT.

# Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

ref.10 000113

2B

SOIL VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SM0002 SAS No.: 7453C01 SDG No.: CGG72

Level:(low/med) LOW

| | EPA SAMPLE NO. | SMC1 (TOL)# | SMC2 (BFB)# | SMC3 (DCE)# | OTHER | TOT OUT |
|---|---|---|---|---|---|---|
| 01 | CGG72 | 115 | 107 | 240 * | 0 | 1 |
| 02 | CGG72RE similar | 110 | 112 | 154 * | 0 | 1 |
| 03 | CGG73 | 119 | 83 | 248 * | 0 | 1 |
| 04 | CGG73RE similar | 135 | 86 | 155 * | 0 | 1 |
| 05 | CGG79 | 105 | 112 | 155 * | 0 | 1 |
| 06 | CGG79RE better | 113 | 108 | 110 | 0 | 0 |
| 07 | CGG80 | 103 | 119 * | 156 * | 0 | 2 |
| 08 | CGG80RE better | 113 | 112 | 119 | 0 | 0 |
| 09 | CGG81 | 109 | 104 | 116 | 0 | 0 |
| 10 | CGG81RE worse | 120 | 95 | 155 * | 0 | 1 |
| 11 | CGG81MS | 106 | 94 | 160 * | 0 | 1 |
| 12 | CGG81MSD | 103 | 87 | 226 * | 0 | 1 |
| 13 | CGG81MSDRE | 115 | 99 | 146 * | 0 | 1 |
| 14 | CGG81MSRE | 109 | 85 | 272 * | 0 | 1 |
| 15 | VBLK10 | 108 | 108 | 112 | 0 | 0 |
| 16 | VBLK02 | 116 | 110 | 115 | 0 | 0 |
| 17 | VBLK05 | 110 | 102 | 111 | 0 | 0 |

| | | QC LIMITS |
|---|---|---|
| SMC1 (TOL) | = Toluene-d8 | ( 84-138) |
| SMC2 (BFB) | = Bromofluorobenzene | ( 59-113) |
| SMC3 (DCE) | = 1,2-Dichloroethane-d4 | ( 70-121) |

# Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

## ANALYSIS RESULTS FOR TENTATIVELY IDENTIFIED COMPOUNDS

ALL TENTATIVELY IDENTIFIED COMPOUNDS FOUND IN BLANK ANALYSES ARE LISTED BELOW: ref. 8

| SAMPLE # | FRACTION | SCAN #(S) OR (R.T) | ESTIMATED CONCENTRATION | COMPOUND NAME | COMMENTS |
|---|---|---|---|---|---|
| SBLK27 | BNA | 4.22 | 170 ug/kg | 2-hydroxy propanoic acid, methyl ester | |
| | BNA | 4.97 | 100 ug/kg | 4-methyl-3-penten-2-one | |
| | BNA | 5.35 | 180 ug/kg | unknown | |
| | | | | spec 43, 45, 58, 84, 69 | |
| | BNA | 5.78 | 5500 ug/kg | unknown | |
| | | | | spec 43, 59, 58, 101 | |
| | | | | poss. 4-hydroxy-4-methyl-2-pentanone | |
| | | 7.10 | est. Amt. = 3.2 mg | No LIB search (8.0% IS1) probable 1122 PCA | |
| | BNA | 29.62 | 270 ug/kg | 4,5-dimethyl-2,6-octadiene | |
| SBLK01 | BNA | 12.19 | 22 ug/kg | unknown | |
| | | | 7.25 RT | spec 136, 43, [104, 57] | |
| | | 7.25 | est. Amt. = 2.7 mg | NO LIB search. Probable 1122 PCA (6.8% IS1) | |
| | BNA | 29.96 | 9 ug/kg | 2,6,10,15,19,23-hexamethyl-2,6,10-14,18,22-tetracosahexaene | |
| SBLK02 | BNA | 12.2 | 21 ug/kg | unknown | |
| | | | | spec 136, 54, 78, 118, 40, 138 | |
| | | 7.25 | est. Amt. = 3.2 mg | No lib search (7.9% IS1) probable 1122 PCA | |
| SBLK03 | BNA | 10.49 | 5 ug/kg | unknown | |
| | | | | spec 40, 49, 43, 82, 128, 67, 55, 134 | |
| | | 12.19 | 24 ug/kg | unknown | |
| | | | | spec 55, 70, 43, 84, 102, 136, 90 | |
| | | 18.91 | 4 ug/kg | unknown | |
| | | | | spec. 41, 301, 152, 69, 132, 199, 84 | |
| | | | | *CONC. to be questioned of 1122 PCA in sample CGG73RE IS BASED upon instr. level ng, & spl/wt/vol. From CGG73RE | |
| | | | | $\frac{3.2\ ng \times 0.5\ ml}{2\ ul} \times \left(\frac{10}{1.5}\right) \times \frac{1}{0.0307} \times \frac{1}{.93}$ X 5 multiplier | |
| | | | | 560 = max level questioned by blk, so 120 ug/kg is considered questioned by Blanks | |

ND = none detected
NLS = no library search conducted
(....) = primary ions

IS = internal standards

ref.8 BLANK ANALYSIS RESULTS FOR TARGET COMPOUNDS ref.8

| FRACTION | TYPE | CONC | MATRIX | SAMPLE # | SOURCE OF $H_2O$ | CONTAMINANTS (CONCENTRATION / DETECTION LIMIT |
|---|---|---|---|---|---|---|
| BNA | | | | SBLK27 | | di-n-butyl phthalate (0.619 ng)(1) |
| BNA | | | | SBLK01 | | di-n-butyl phthalate (52.96 ng)(1)<br>bis(2-ethylhexyl)phthalate (28.13 ng)(1) |
| BNA | | | | SBLK02 | | bis(2-ethylhexyl)phthalate (25.26 ng)(1)<br>di-n-octyl phthalate (1.5 ng)(1)<br>butylbenzyl phthalate (0.386 ng)(2) |
| BNA | | | | SBLK03 | | bis(2-ethylhexyl)phthalate (1.35 ng)(1) |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

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

COMMENTS:

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

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

U.S. EPA - CLP

8

STANDARD ADDITION RESULTS

Ref. 7

Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0109

Code: SKINER Case No.: 18622 SAS No.: SDG No.: MCHG01

Concentration Units: ug/L

| EPA Sample No. | An | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| HG02 | AS | 0.027 | 10.00 | 0.058 | 20.00 | 0.088 | 30.00 | 0.118 | 9.0 | 1.0000 | |
| HG01 | SE | 0.011 | 5.00 | 0.034 | 10.00 | 0.041 | 15.00 | 0.063 | 3.9 | 0.9823 | * |
| HG01 | SE | 0.016 | 5.00 | 0.024 | 10.00 | 0.036 | 15.00 | 0.048 | 6.9 | 0.9959 | |
| HG07 | SE | 0.026 | 5.00 | 0.046 | 10.00 | 0.054 | 15.00 | 0.073 | 9.2 | 0.9882 | * |
| HG07 | SE | 0.026 | 5.00 | 0.040 | 10.00 | 0.056 | 15.00 | 0.072 | 8.2 | 0.9995 | |
| HG08 | SE | 0.026 | 5.00 | 0.042 | 10.00 | 0.059 | 15.00 | 0.071 | 8.8 | 0.9975 | |

* Result not used; no action

035

TPO: [ ] ACTION [X] FYI

Region III

## INORGANIC REGIONAL DATA ASSESSMENT SUMMARY

CASE NO. SAS 7453-C

LABORATORY Precision

SDG NO. MCHG03

DATA USER Pat Churilla, TPO, EPA R. III ESD

SOW 3/90

REVIEW COMPLETION DATE 1/13/93

NO. OF SAMPLES 3 MATRIX Rocky/Solid waste

REVIEWER [ ] ESD [ ] ESAT [X] OTHER, CONTRACT/CONTRACTOR ARCSIII/Halliburton NUS

| | ICP | AA | Hg | CYANIDE |
|---|---|---|---|---|
| 1. HOLDING TIMES | O | O | O | O |
| 2. INITIAL CALIBRATIONS | O | O | O | O |
| 3. CONTINUING CALIBRATIONS | O | O | O | O |
| 4. FIELD BLANKS ("F" = not applicable) | F | F | F | F |
| 5. LABORATORY BLANKS | M[1] | X[2] | O | O |
| 6. ICS | O | | | |
| 7. LCS | O | O | | |
| 8. DUPLICATE ANALYSIS | O | O | O | O |
| 9. MATRIX SPIKE & GFAA PDS | X[3] | M[4] | O | M[5] |
| 10. MSA | | O | | |
| 11. SERIAL DILUTION | M[6] | | | |
| 12. SAMPLE VERIFICATION | O | O[8] | O | O |
| 13. REGIONAL QC ("F" = not applicable) | F | F | F | F |
| 14. OVERALL ASSESSMENT | O[7] | O | O[9] | O |

O = No problems or minor problems that do not affect data usability.
X = No more than *about* 5% of the data points are qualified as either estimated or unusable.
M = More than *about* 5% of the data points are qualified as estimated.
Z = More than *about* 5% of the data points are qualified as unusable.
A = DPO action requested; use in conjunction with one of the above codes.

TPO ACTION ITEMS:

AREAS OF CONCERN: M[1] = See Note 1. X[2] = See Note 2. X[3] = See Note 3. M[4] = See Note 4. M[5] = See Note 5. M[6] = See Note 6. O[7] = See Note 7. O[8] = See Note 8. O[9] = See Note 9.

# CASE NARRATIVE

Lab Name: PRECISION_A_L
Case No.: SMO002
SDG No.: CGG72

Contract:
SAS No: 7453-C-01
Sample Analysis Price:

## SEMIVOLATILE ORGANIC ANALYSIS

| Sample No. | EPA Sample No. | Lab Sample ID |
|---|---|---|
| CGG72 | CGG72 | 9208251-2 |
| CGG73 | CGG73 | 9208251-3 |
| CGG73RE | CGG73RE | 9208251-3RE |
| CGG79 | CGG79 | 9208303-1 |
| CGG80 | CGG80 | 9208303-2 |
| CGG81 | CGG81 | 9208251-1 |
| CGG81RE | CGG81RE | 9208251-1RE |
| CGG81MS | CGG81MS | 9208251-1MS |
| CGG81MSD | CGG81MSD | 9208251-1MSD |
| CGG81MSDRE | CGG81MSDRE | 9208251-1MSDRE |
| CGG81MSRE | CGG81MSRE | 9208251-1MSRE |
| SBLK27 | SBLK27 | MBLK0826 |
| SBLK01 | SBLK01 | MBLK0828 |
| SBLK02 | SBLK02 | MBLK0831 |
| SBLK03 | SBLK03 | MBLK0827 |

1.) The instrument ID for Semivolatile Organic Analysis is HPBNA.

2.) EPA Sample No. "CGG73" was analyzed twice because the first analysis had surrogates that were beyond the QC limits. However, upon reanalysis, the QC was in control but the samples were extracted beyond the contract required holding times. Both data packages are submitted for review. The contractor will only be invoiced for the second analysis.

3.) EPA Sample No.'s "SBLK01, SBLK02" were all inadvertantly fortified with two times the Internal standard amount required for analysis. After adjusting for the internal standard and recalculating the concentration, the surrogates were within QC limits. SBLK03 had two Base Neutral surrogates that were beyond the QC limits. No further action was taken.

4.) EPA Sample No. "CGG81" was reextracted due to surrogates that were outside the QC limits. The associated MS/MSD also had the same surrogates out of QC compliance. The reextraction and analysis came into QC compliance, but the 6th internal standard was out of control for CGG81RE and CGG81MSRE. This was labeled a matrix effect. Both data packages were submitted for review. The invoice will only be for the second analysis.

ref.8

000558
EPA SAMPLE NO.

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SBLK01

Lab Name: PRECISION A L Contract: _____

Lab Code: PRECIS Case No.: SMO002 SAS No.: _____ SDG No.: CGG72

Matrix: (soil/water) SOIL Lab Sample ID: MBLK0828

Sample wt/vol: 30.00 (g/mL) G Lab File ID: B9005

Level: (low/med) LOW Date Received: _____

% Moisture: _____ decanted: (Y/N) N Date Extracted: 08/28/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 09/02/92

Injection Volume: 2.0 (uL) Dilution Factor: 2.0

GPC Cleanup: (Y/N) Y pH: _____

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 51-28-5 | 2,4-Dinitrophenol | 800 | U |
| 100-02-7 | 4-Nitrophenol | 800 | U |
| 132-64-9 | Dibenzofuran | 330 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 330 | U |
| 84-66-2 | Diethylphthalate | 330 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 330 | U |
| 86-73-7 | Fluorene | 330 | U |
| 100-01-6 | 4-Nitroaniline | 800 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 800 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 330 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 330 | U |
| 118-74-1 | Hexachlorobenzene | 330 | U |
| 87-86-5 | Pentachlorophenol | 800 | U |
| 85-01-8 | Phenanthrene | 330 | U |
| 120-12-7 | Anthracene | 330 | U |
| 86-74-8 | Carbazole | 330 | U |
| 84-74-2 | Di-n-Butylphthalate | 53 | J |
| 206-44-0 | Fluoranthene | 330 | U |
| 129-00-0 | Pyrene | 330 | U |
| 85-68-7 | Butylbenzylphthalate | 330 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 330 | U |
| 56-55-3 | Benzo(a)Anthracene | 330 | U |
| 218-01-9 | Chrysene | 330 | U |
| 117-81-7 | bis(2-Ethylhexyl)Phthalate | 28 | J |
| 117-84-0 | Di-n-Octyl Phthalate | 330 | U |
| 205-99-2 | Benzo(b)Fluoranthene | 330 | U |
| 207-08-9 | Benzo(k)Fluoranthene | 330 | U |
| 50-32-8 | Benzo(a)Pyrene | 330 | U |
| 193-39-5 | Indeno(1,2,3-cd)Pyrene | 330 | U |
| 53-70-3 | Dibenz(a,h)Anthracene | 330 | U |
| 191-24-2 | Benzo(g,h,i)Perylene | 330 | U |

(1) - Cannot be separated from Diphenylamine

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CGG70

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: SDG No.: CGG70

Matrix: (soil/water) WATER Lab Sample ID: 9207956

Sample wt/vol: 1000 (g/mL) ML Lab File ID: E2957

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 08/24/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/27/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.0

| 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 |
| 95-50-1 | 1,2-Dichlorobenzene | 10 | U |
| 95-48-7 | 2-Methylphenol | 10 | U |
| 108-60-1 | 2,2'-oxybis(1-Chloropropane) | 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 |
| 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 | 25 | U |
| 91-58-7 | 2-Chloronaphthalene | 10 | U |
| 88-74-4 | 2-Nitroaniline | 25 | U |
| 131-11-3 | Dimethylphthalate | 10 | U |
| 208-96-8 | Acenaphthylene | 10 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 10 | U |
| 99-09-2 | 3-Nitroaniline | 25 | U |
| 83-32-9 | Acenaphthene | 10 | U |

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CGG70

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: _____ SDG No.: CGG70

Matrix: (soil/water) WATER Lab Sample ID: 9207956

Sample wt/vol: 1000 (g/mL) ML Lab File ID: E2957

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 08/24/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/27/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q. |
|---|---|---|---|
| 51-28-5 | 2,4-Dinitrophenol | 25 | U |
| 100-02-7 | 4-Nitrophenol | 25 | 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-phenylether | 10 | U |
| 86-73-7 | Fluorene | 10 | U |
| 100-01-6 | 4-Nitroaniline | 25 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 25 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 10 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 10 | U |
| 118-74-1 | Hexachlorobenzene | 10 | U |
| 87-86-5 | Pentachlorophenol | 25 | U |
| 85-01-8 | Phenanthrene | 10 | U |
| 120-12-7 | Anthracene | 10 | U |
| 86-74-8 | Carbazole | 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 | 10 | U |
| 56-55-3 | Benzo(a)anthracene | 10 | U |
| 218-01-9 | Chrysene | 10 | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 1 | J |
| 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

# SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

CGG70

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: _____ SDG No.: CGG70

Matrix: (soil/water) WATER Lab Sample ID: 9207956

Sample wt/vol: 1000 (g/mL) ML Lab File ID: E2957

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 08/24/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/27/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.0

Number TICs found: 7

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | UNKNOWN | 6.72 | 4 | JNB |
| 2. | UNKNOWN | 15.51 | 2 | JN |
| 3. | UNKNOWN | 28.69 | 8 | JN |
| 4. | UNKNOWN | 31.87 | 12 | JN |
| 5. | UNKNOWN | 34.68 | 18 | JN |
| 6. | UNKNOWN | 38.14 | 17 | JN |
| 7. | UNKNOWN | 43.43 | 16 | JN |

1B

# SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CGG71

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: _____ SDG No.: CGG70

Matrix: (soil/water) WATER Lab Sample ID: 9207957

Sample wt/vol: 1000 (g/mL) ML Lab File ID: E2958

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 08/24/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/27/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.0

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

| CAS NO. | COMPOUND | | 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 |
| 95-50-1 | 1,2-Dichlorobenzene | 10 | U |
| 95-48-7 | 2-Methylphenol | 10 | U |
| 108-60-1 | 2,2'-oxybis(1-Chloropropane) | 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 |
| 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 | 25 | U |
| 91-58-7 | 2-Chloronaphthalene | 10 | U |
| 88-74-4 | 2-Nitroaniline | 25 | U |
| 131-11-3 | Dimethylphthalate | 10 | U |
| 208-96-8 | Acenaphthylene | 10 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 10 | U |
| 99-09-2 | 3-Nitroaniline | 25 | U |
| 83-32-9 | Acenaphthene | 10 | U |

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

CGG71

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: _____ SDG No.: CGG70

Matrix: (soil/water) WATER Lab Sample ID: 9207957

Sample wt/vol: 1000 (g/mL) ML Lab File ID: E2958

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 08/24/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/27/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.0

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q. |
|---|---|---|---|
| 51-28-5 | 2,4-Dinitrophenol | 25 | U |
| 100-02-7 | 4-Nitrophenol | 25 | 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-phenylether | 10 | U |
| 86-73-7 | Fluorene | 10 | U |
| 100-01-6 | 4-Nitroaniline | 25 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 25 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 10 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 10 | U |
| 118-74-1 | Hexachlorobenzene | 10 | U |
| 87-88-5 | Pentachlorophenol | 25 | U |
| 85-01-8 | Phenanthrene | 10 | U |
| 120-12-7 | Anthracene | 10 | U |
| 86-74-8 | Carbazole | 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 | 10 | U |
| 56-55-3 | Benzo(a)anthracene | 10 | U |
| 218-01-9 | Chrysene | 10 | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 2 | J |
| 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

# SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

CGG71

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 18622 SAS No.: _____ SDG No.: CGG70

Matrix: (soil/water) WATER Lab Sample ID: 9207957

Sample wt/vol: 1000 (g/mL) ML Lab File ID: E2958

Level: (low/med) LOW Date Received: 08/20/92

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 08/24/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/27/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 6.0

Number TICs found: 10

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. 123422 | 2-Pentanone, 4-hydroxy-4-met | 6.29 | 34 | JNA |
| 2. | UNKNOWN | 6.72 | 3 | JNB |
| 3. | UNKNOWN | 15.52 | 2 | JN |
| 4. | UNKNOWN | 28.54 | 2 | JN |
| 5. | UNKNOWN | 28.67 | 10 | JN |
| 6. | UNKNOWN | 31.81 | 16 | JN |
| 7. | UNKNOWN | 32.50 | 2 | JN |
| 8. | UNKNOWN | 34.66 | 25 | JN |
| 9. | UNKNOWN | 38.13 | 20 | JN |
| 10. | UNKNOWN | 43.43 | 21 | JN |

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1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MCHG02

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0109

Lab Code: SKINER Case No.: 18622 SAS No.: SDG No.: MCHG01

Matrix (soil/water): WATER Lab Sample ID: 08231-02S

Level (low/med): LOW Date Received: 08/20/92

% 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 | 18500 | | | P |
| 7440-36-0 | Antimony | 16.5 | U | | P |
| 7440-38-2 | Arsenic | 9.0 | B | S | F |
| 7440-39-3 | Barium | 321 | | | P |
| 7440-41-7 | Beryllium | 1.8 | B | | P |
| 7440-43-9 | Cadmium | 1.4 | U | | P |
| 7440-70-2 | Calcium | 112000 | | | P |
| 7440-47-3 | Chromium | 39.5 | | | P |
| 7440-48-4 | Cobalt | 23.5 | B | | P |
| 7440-50-8 | Copper | 43.2 | | | P |
| 7439-89-6 | Iron | 40000 | | N | P |
| 7439-92-1 | Lead | 39.1 | | N* | F |
| 7439-95-4 | Magnesium | 36100 | | | P |
| 7439-96-5 | Manganese | 1010 | | | P |
| 7439-97-6 | Mercury | 0.35 | | | CV |
| 7440-02-0 | Nickel | 37.5 | B | | P |
| 7440-09-7 | Potassium | 151000 | | | P |
| 7782-49-2 | Selenium | 3.7 | U | | F |
| 7440-22-4 | Silver | 2.3 | U | | P |
| 7440-23-5 | Sodium | 122000 | | | P |
| 7440-28-0 | Thallium | 8.0 | U | EN | F |
| 7440-62-2 | Vanadium | 37.6 | B | | P |
| 7440-66-6 | Zinc | 121 | | | P |
| | Cyanide | 79.0 | | | CA |

Color Before: BROWN Clarity Before: OPAQUE Texture:

Color After: BROWN Clarity After: OPAQUE Artifacts:

Comments:

003

# INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MCHG05

ab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0109

.ab Code: SKINER Case No.: 18622 SAS No.: SDG No.: MCHG01

Matrix (soil/water): WATER Lab Sample ID: 08231-03S

Level (low/med): LOW Date Received: 08/20/92

% 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 | 473 | | | P |
| 7440-36-0 | Antimony | 16.5 | U | | P |
| 7440-38-2 | Arsenic | 2.6 | U | | F |
| 7440-39-3 | Barium | 36.6 | B | | P |
| 7440-41-7 | Beryllium | 0.40 | U | | P |
| 7440-43-9 | Cadmium | 1.4 | U | | P |
| 7440-70-2 | Calcium | 56900 | | | P |
| 7440-47-3 | Chromium | 3.7 | U | | P |
| 7440-48-4 | Cobalt | 2.3 | B | | P |
| 7440-50-8 | Copper | 12.2 | B | | P |
| 7439-89-6 | Iron | 646 | | N | P |
| 7439-92-1 | Lead | 3.5 | | N* | F |
| 7439-95-4 | Magnesium | 13900 | | | P |
| 7439-96-5 | Manganese | 29.2 | | | P |
| 7439-97-6 | Mercury | 0.20 | U | | CV |
| 7440-02-0 | Nickel | 6.0 | U | | P |
| 7440-09-7 | Potassium | 2910 | B | | P |
| 7782-49-2 | Selenium | 3.7 | U | | F |
| 7440-22-4 | Silver | 2.3 | U | | P |
| 7440-23-5 | Sodium | 32800 | | | P |
| 7440-28-0 | Thallium | 1.6 | U | WN | F |
| 7440-62-2 | Vanadium | 3.3 | U | | P |
| 7440-66-6 | Zinc | 10.4 | B | | P |
| | Cyanide | 10.0 | U | | CA |

Color Before: COLORLESS Clarity Before: CLOUDY Texture:

Color After: COLORLESS Clarity After: CLOUDY Artifacts:

Comments:

004

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1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MCHG06

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0109

Lab Code: SKINER Case No.: 18622 SAS No.: SDG No.: MCHG01

Matrix (soil/water): WATER Lab Sample ID: 08231-04S

Level (low/med): LOW Date Received: 08/20/92

% 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 | 178 | B | | P |
| 7440-36-0 | Antimony | 16.5 | U | | P |
| 7440-38-2 | Arsenic | 2.6 | U | | F |
| 7440-39-3 | Barium | 58.8 | B | | P |
| 7440-41-7 | Beryllium | 0.40 | U | | P |
| 7440-43-9 | Cadmium | 1.4 | U | | P |
| 7440-70-2 | Calcium | 87700 | | | P |
| 7440-47-3 | Chromium | 3.7 | U | | P |
| 7440-48-4 | Cobalt | 2.3 | U | | P |
| 7440-50-8 | Copper | 7.1 | B | | P |
| 7439-89-6 | Iron | 241 | | N | P |
| 7439-92-1 | Lead | 6.3 | | N* | F |
| 7439-95-4 | Magnesium | 14100 | | | P |
| 7439-96-5 | Manganese | 15.0 | B | | P |
| 7439-97-6 | Mercury | 0.20 | U | | CV |
| 7440-02-0 | Nickel | 6.0 | U | | P |
| 7440-09-7 | Potassium | 3230 | B | | P |
| 7782-49-2 | Selenium | 3.7 | U | | F |
| 7440-22-4 | Silver | 2.3 | U | | P |
| 7440-23-5 | Sodium | 28700 | | | P |
| 7440-28-0 | Thallium | 1.6 | U | WN | F |
| 7440-62-2 | Vanadium | 3.3 | U | | P |
| 7440-66-6 | Zinc | 10.1 | U | | P |
| | Cyanide | 10.0 | U | | CA |

Color Before: COLORLESS Clarity Before: CLOUDY Texture:

Color After: COLORLESS Clarity After: CLOUDY Artifacts:

Comments:

005

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MCHG07

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0109

Lab Code: SKINER Case No.: 18622 SAS No.: SDG No.: MCHG01

Matrix (soil/water): WATER Lab Sample ID: 08231-05S

Level (low/med): LOW Date Received: 08/20/92

% 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 | 516 | | | P |
| 7440-36-0 | Antimony | 16.5 | U | | P |
| 7440-38-2 | Arsenic | 6.2 | B | W | F |
| 7440-39-3 | Barium | 163 | B | | P |
| 7440-41-7 | Beryllium | 0.40 | U | | P |
| 7440-43-9 | Cadmium | 1.4 | U | | P |
| 7440-70-2 | Calcium | 96700 | | | P |
| 7440-47-3 | Chromium | 3.7 | U | | P |
| 7440-48-4 | Cobalt | 2.3 | U | | P |
| 7440-50-8 | Copper | 6.6 | B | | P |
| 7439-89-6 | Iron | 1090 | | N | P |
| 7439-92-1 | Lead | 3.0 | | N* | F |
| 7439-95-4 | Magnesium | 49400 | | | P |
| 7439-96-5 | Manganese | 619 | | | P |
| 7439-97-6 | Mercury | 0.21 | | | CV |
| 7440-02-0 | Nickel | 6.8 | B | | P |
| 7440-09-7 | Potassium | 400000 | | | P |
| 7782-49-2 | Selenium | 8.2 | | S | F |
| 7440-22-4 | Silver | 2.3 | U | | P |
| 7440-23-5 | Sodium | 161000 | | | P |
| 7440-28-0 | Thallium | 8.0 | U | EN | F |
| 7440-62-2 | Vanadium | 4.9 | B | | P |
| 7440-66-6 | Zinc | 10.1 | U | | P |
| | Cyanide | 572 | | | CA |

Color Before: BROWN Clarity Before: CLOUDY Texture:

Color After: BROWN Clarity After: CLOUDY Artifacts:

Comments:

006

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1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MCHG08

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0109

Lab Code: SKINER Case No.: 18622 SAS No.: SDG No.: MCHG01

Matrix (soil/water): WATER Lab Sample ID: 08231-06S

Level (low/med): LOW Date Received: 08/20/92

% 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 | 490 | | | P |
| 7440-36-0 | Antimony | 16.5 | U | | P |
| 7440-38-2 | Arsenic | 4.9 | B | | F |
| 7440-39-3 | Barium | 163 | B | | P |
| 7440-41-7 | Beryllium | 0.40 | U | | P |
| 7440-43-9 | Cadmium | 1.4 | U | | P |
| 7440-70-2 | Calcium | 96600 | | | P |
| 7440-47-3 | Chromium | 3.7 | U | | P |
| 7440-48-4 | Cobalt | 2.3 | U | | P |
| 7440-50-8 | Copper | 13.6 | B | | P |
| 7439-89-6 | Iron | 1110 | | N | P |
| 7439-92-1 | Lead | 2.2 | U | N* | F |
| 7439-95-4 | Magnesium | 49600 | | | P |
| 7439-96-5 | Manganese | 617 | | | P |
| 7439-97-6 | Mercury | 0.20 | U | | CV |
| 7440-02-0 | Nickel | 8.0 | B | | P |
| 7440-09-7 | Potassium | 364000 | | | P |
| 7782-49-2 | Selenium | 8.8 | | S | F |
| 7440-22-4 | Silver | 2.3 | U | | P |
| 7440-23-5 | Sodium | 157000 | | | P |
| 7440-28-0 | Thallium | 8.0 | U | EN | F |
| 7440-62-2 | Vanadium | 4.3 | B | | P |
| 7440-66-6 | Zinc | 13.7 | B | | P |
| | Cyanide | 592 | | | CA |

Color Before: BROWN Clarity Before: CLOUDY Texture:

Color After: BROWN Clarity After: CLOUDY Artifacts:

Comments:

007

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MCHG13

ab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0109

ab Code: SKINER Case No.: 18622 SAS No.: SDG No.: MCHG01

atrix (soil/water): WATER Lab Sample ID: 08231-07S

evel (low/med): LOW Date Received: 08/20/92

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 | 641 | | | P |
| 7440-36-0 | Antimony | 16.5 | U | | P |
| 7440-38-2 | Arsenic | 2.6 | U | | F |
| 7440-39-3 | Barium | 101 | B | | P |
| 7440-41-7 | Beryllium | 0.40 | U | | P |
| 7440-43-9 | Cadmium | 1.4 | U | | P |
| 7440-70-2 | Calcium | 103000 | | | P |
| 7440-47-3 | Chromium | 3.7 | U | | P |
| 7440-48-4 | Cobalt | 2.3 | B | | P |
| 7440-50-8 | Copper | 6.2 | B | | P |
| 7439-89-6 | Iron | 1110 | | N | P |
| 7439-92-1 | Lead | 11.0 | | *N | F |
| 7439-95-4 | Magnesium | 29400 | | | P |
| 7439-96-5 | Manganese | 122 | | | P |
| 7439-97-6 | Mercury | 0.20 | U | | CV |
| 7440-02-0 | Nickel | 6.0 | U | | P |
| 7440-09-7 | Potassium | 2550 | B | | P |
| 7782-49-2 | Selenium | 3.7 | U | | F |
| 7440-22-4 | Silver | 2.3 | U | | P |
| 7440-23-5 | Sodium | 152000 | | | P |
| 7440-28-0 | Thallium | 8.0 | U | EN | F |
| 7440-62-2 | Vanadium | 3.3 | U | | P |
| 7440-66-6 | Zinc | 37.2 | | | P |
| | Cyanide | 10.0 | U | | CA |

olor Before: COLORLESS Clarity Before: CLOUDY Texture:

olor After: COLORLESS Clarity After: CLOUDY Artifacts:

omments:

008

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MCHG14

ab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0109

ab Code: SKINER Case No.: 18622 SAS No.: SDG No.: MCHG01

atrix (soil/water): WATER Lab Sample ID: 08231-08S

evel (low/med): LOW Date Received: 08/20/92

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 | 21.0 | B | | P |
| 7440-36-0 | Antimony | 16.5 | U | | P |
| 7440-38-2 | Arsenic | 2.6 | U | | F |
| 7440-39-3 | Barium | 1.0 | U | | P |
| 7440-41-7 | Beryllium | 0.40 | U | | P |
| 7440-43-9 | Cadmium | 1.4 | U | | P |
| 7440-70-2 | Calcium | 78.8 | B | | P |
| 7440-47-3 | Chromium | 3.7 | U | | P |
| 7440-48-4 | Cobalt | 2.3 | U | | P |
| 7440-50-8 | Copper | 2.4 | U | | P |
| 7439-89-6 | Iron | 16.3 | U | N | P |
| 7439-92-1 | Lead | 5.7 | | N* | F |
| 7439-95-4 | Magnesium | 35.0 | B | | P |
| 7439-96-5 | Manganese | 1.3 | U | | P |
| 7439-97-6 | Mercury | 0.20 | U | | CV |
| 7440-02-0 | Nickel | 6.0 | U | | P |
| 7440-09-7 | Potassium | 77.1 | U | | P |
| 7782-49-2 | Selenium | 3.7 | U | | F |
| 7440-22-4 | Silver | 2.3 | U | | P |
| 7440-23-5 | Sodium | 87.2 | B | | P |
| 7440-28-0 | Thallium | 1.6 | U | N | F |
| 7440-62-2 | Vanadium | 3.3 | U | | P |
| 7440-66-6 | Zinc | 10.1 | U | | P |
| | Cyanide | 10.0 | U | | CA |

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

009

# INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MCHG16

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0109

Lab Code: SKINER Case No.: 18622 SAS No.: SDG No.: MCHG01

Matrix (soil/water): WATER Lab Sample ID: 08231-09S

Level (low/med): LOW Date Received: 08/20/92

% 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 | 635 | | | P |
| 7440-36-0 | Antimony | 17.0 | B | | P |
| 7440-38-2 | Arsenic | 4.8 | B | W | F |
| 7440-39-3 | Barium | 101 | B | | P |
| 7440-41-7 | Beryllium | 0.40 | U | | P |
| 7440-43-9 | Cadmium | 1.4 | U | | P |
| 7440-70-2 | Calcium | 77200 | | | P |
| 7440-47-3 | Chromium | 9.1 | B | | P |
| 7440-48-4 | Cobalt | 2.3 | U | | P |
| 7440-50-8 | Copper | 15.4 | B | | P |
| 7439-89-6 | Iron | 5300 | | N | P |
| 7439-92-1 | Lead | 11.9 | | N* | F |
| 7439-95-4 | Magnesium | 15600 | | | P |
| 7439-96-5 | Manganese | 1910 | | | P |
| 7439-97-6 | Mercury | 0.20 | U | | CV |
| 7440-02-0 | Nickel | 10.8 | B | | P |
| 7440-09-7 | Potassium | 5840 | | | P |
| 7782-49-2 | Selenium | 3.7 | U | | F |
| 7440-22-4 | Silver | 2.3 | U | | P |
| 7440-23-5 | Sodium | 34500 | | | P |
| 7440-28-0 | Thallium | 8.0 | U | WN | F |
| 7440-62-2 | Vanadium | 3.4 | B | | P |
| 7440-66-6 | Zinc | 93.2 | | | P |
| | Cyanide | 10.0 | U | | CA |

Color Before: BROWN Clarity Before: CLOUDY Texture:

Color After: BROWN Clarity After: CLOUDY Artifacts:

Comments:

010

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MCHG22

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0109

Lab Code: SKINER Case No.: 18622 SAS No.: SDG No.: MCHG09

Matrix (soil/water): SOIL Lab Sample ID: 08232-08S

Level (low/med): LOW Date Received: 08/20/92

% Solids: 75.0

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 11400 | | | P |
| 7440-36-0 | Antimony | 4.2 | U | N | P |
| 7440-38-2 | Arsenic | 10.3 | | S | F |
| 7440-39-3 | Barium | 93.7 | | | P |
| 7440-41-7 | Beryllium | 0.39 | B | | P |
| 7440-43-9 | Cadmium | 0.39 | U | | P |
| 7440-70-2 | Calcium | 649 | B | | P |
| 7440-47-3 | Chromium | 19.1 | | | P |
| 7440-48-4 | Cobalt | 12.8 | B | | P |
| 7440-50-8 | Copper | 16.9 | | | P |
| 7439-89-6 | Iron | 22100 | | | P |
| 7439-92-1 | Lead | 66.2 | | | F |
| 7439-95-4 | Magnesium | 2130 | | | P |
| 7439-96-5 | Manganese | 1020 | | | P |
| 7439-97-6 | Mercury | 0.12 | B | N | CV |
| 7440-02-0 | Nickel | 18.8 | | | P |
| 7440-09-7 | Potassium | 692 | B | | P |
| 7782-49-2 | Selenium | 1.6 | | N* | F |
| 7440-22-4 | Silver | 1.3 | B | | P |
| 7440-23-5 | Sodium | 66.2 | B | | P |
| 7440-28-0 | Thallium | 0.70 | B | | F |
| 7440-62-2 | Vanadium | 25.2 | | | P |
| 7440-66-6 | Zinc | 84.3 | | | P |
| | Cyanide | 0.67 | U | * | CA |

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts: YES

Comments:
ROCKS, ROOTS

009

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1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MCHG15

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0109

Lab Code: SKINER Case No.: 18622 SAS No.: SDG No.: MCHG15

Matrix (soil/water): WATER Lab Sample ID: 08233-01S

Level (low/med): LOW Date Received: 08/20/92

% 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 | 40.3 | B | N | P |
| 7440-36-0 | Antimony | 16.5 | U | | P |
| 7440-38-2 | Arsenic | 2.4 | U | | F |
| 7440-39-3 | Barium | 4.5 | B | | P |
| 7440-41-7 | Beryllium | 0.40 | U | | P |
| 7440-43-9 | Cadmium | 1.4 | U | | P |
| 7440-70-2 | Calcium | 2360 | B | | P |
| 7440-47-3 | Chromium | 3.7 | U | | P |
| 7440-48-4 | Cobalt | 2.3 | U | | P |
| 7440-50-8 | Copper | 3.0 | B | | P |
| 7439-89-6 | Iron | 45.7 | B | | P |
| 7439-92-1 | Lead | 2.2 | U | * | F |
| 7439-95-4 | Magnesium | 687 | B | | P |
| 7439-96-5 | Manganese | 2.0 | B | | P |
| 7439-97-6 | Mercury | 0.20 | U | N | CV |
| 7440-02-0 | Nickel | 6.0 | U | | P |
| 7440-09-7 | Potassium | 2930 | B | | P |
| 7782-49-2 | Selenium | 3.1 | U | M | F |
| 7440-22-4 | Silver | 2.3 | U | | P |
| 7440-23-5 | Sodium | 2910 | B | | P |
| 7440-28-0 | Thallium | 1.6 | U | N | F |
| 7440-62-2 | Vanadium | 3.3 | U | | P |
| 7440-66-6 | Zinc | 10.2 | B | | P |
| | Cyanide | | | | NR |

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

000

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1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MCHG17

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0109

Lab Code: SKINER Case No.: 18622 SAS No.: SDG No.: MCHG01

Matrix (soil/water): WATER Lab Sample ID: 08231-10S

Level (low/med): LOW Date Received: 08/20/92

% 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 | 108 | B | | P |
| 7440-36-0 | Antimony | 16.5 | U | | P |
| 7440-38-2 | Arsenic | 2.6 | U | | F |
| 7440-39-3 | Barium | 82.3 | B | | P |
| 7440-41-7 | Beryllium | 0.40 | U | | P |
| 7440-43-9 | Cadmium | 1.4 | U | | P |
| 7440-70-2 | Calcium | 88500 | | | P |
| 7440-47-3 | Chromium | 3.7 | U | | P |
| 7440-48-4 | Cobalt | 2.3 | U | | P |
| 7440-50-8 | Copper | 4.4 | B | | P |
| 7439-89-6 | Iron | 278 | | N | P |
| 7439-92-1 | Lead | 9.1 | | N* | F |
| 7439-95-4 | Magnesium | 18000 | | | P |
| 7439-96-5 | Manganese | 418 | | | P |
| 7439-97-6 | Mercury | 0.21 | | | CV |
| 7440-02-0 | Nickel | 6.0 | U | | P |
| 7440-09-7 | Potassium | 34000 | | | P |
| 7782-49-2 | Selenium | 3.7 | U | | F |
| 7440-22-4 | Silver | 2.3 | U | | P |
| 7440-23-5 | Sodium | 62500 | | | P |
| 7440-28-0 | Thallium | 8.0 | U | EN | F |
| 7440-62-2 | Vanadium | 3.3 | U | | P |
| 7440-66-6 | Zinc | 10.1 | U | | P |
| | Cyanide | 50.6 | | | CA |

Color Before: BROWN Clarity Before: CLOUDY Texture:

Color After: BROWN Clarity After: CLOUDY Artifacts:

Comments:

011

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1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MCHG03

Lab Name: PRECISION_ANALYTICAL_LABS Contract: _____

Lab Code: PRE___ Case No.: _____ SAS No.: 7453-C SDG No.: MCHG03

Matrix (soil/water): SOIL_ Lab Sample ID: MCHG03____

Level (low/med): MED__ Date Received: 08/19/92

% Solids: _54.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 10300 | | | P |
| 7440-36-0 | Antimony | 11.1 | U | | P |
| 7440-38-2 | Arsenic | 12.2 | | | F |
| 7440-39-3 | Barium | 137 | | | P |
| 7440-41-7 | Beryllium | 1.7 | B | | P |
| 7440-43-9 | Cadmium | 3.5 | | | P |
| 7440-70-2 | Calcium | 214000 | | | P |
| 7440-47-3 | Chromium | 11.6 | | | P |
| 7440-48-4 | Cobalt | 14.8 | U | | P |
| 7440-50-8 | Copper | 13.3 | | | P |
| 7439-89-6 | Iron | 8380 | | | P |
| 7439-92-1 | Lead | 59.9 | | | P |
| 7439-95-4 | Magnesium | 8370 | | | P |
| 7439-96-5 | Manganese | 186 | | | P |
| 7439-97-6 | Mercury | 0.07 | | | AV |
| 7440-02-0 | Nickel | 14.6 | B | | P |
| 7440-09-7 | Potassium | 1430 | B | | P |
| 7782-49-2 | Selenium | 12.0 | | S | F |
| 7440-22-4 | Silver | 1.7 | B | | P |
| 7440-23-5 | Sodium | 271 | B | | P |
| 7440-28-0 | Thallium | 2.1 | B | W | F |
| 7440-62-2 | Vanadium | 19.5 | | | P |
| 7440-66-6 | Zinc | 114 | | | P |
| | Cyanide | 0.09 | U | | C |
| | | | | | |

Color Before: BLACK____ Clarity Before: OPAQUE Texture: MEDIUM

Color After: YELLOW___ Clarity After: CLEAR_ Artifacts: _____

Comments:

FORM I - IN

ILM02.1

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2B

CRDL STANDARD FOR AA AND ICP

Ref. 1

ab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0109

ab Code: SKINER Case No.: 18622 SAS No.: SDG No.: MCHG09

A CRDL Standard Source: SKINER

CP CRDL Standard Source:

Concentration Units: ug/L

| Analyte | CRDL Standard for AA | | | CRDL Standard for ICP | | | | |
|---|---|---|---|---|---|---|---|---|
| | True | Found | %R | True | Initial Found | %R | Final Found | %R |
| Aluminum | | | | | | | | |
| Antimony | | | | | | | | |
| Arsenic | 10.0 | 11.17 | 111.7 | | | | | |
| Barium | | | | | | | | |
| Beryllium | | | | | | | | |
| Cadmium | | | | | | | | |
| Calcium | | | | | | | | |
| Chromium | | | | | | | | |
| Cobalt | | | | | | | | |
| Copper | | | | | | | | |
| Iron | | | | | | | | |
| Lead | | | | | | | | |
| Magnesium | | | | | | | | |
| Manganese | | | | | | | | |
| Mercury | | | | | | | | |
| Nickel | | | | | | | | |
| Potassium | | | | | | | | |
| Selenium | 5.0 | 6.28 | 125.6 | | | | | |
| Silver | | | | | | | | |
| Sodium | | | | | | | | |
| Thallium | | | | | | | | |
| Vanadium | | | | | | | | |
| Zinc | | | | | | | | |

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2B
CRDL STANDARD FOR AA AND ICP

Ref. 1

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0109

Lab Code: SKINER Case No.: 18622 SAS No.: SDG No.: MCHG09

AA CRDL Standard Source: SKINER

ICP CRDL Standard Source:

Concentration Units: ug/L

| Analyte | CRDL Standard for AA | | | CRDL Standard for ICP | | | | |
|---|---|---|---|---|---|---|---|---|
| | True | Found | %R | True | Initial Found | %R | Final Found | %R |
| Aluminum | | | | | | | | |
| Antimony | | | | | | | | |
| Arsenic | 10.0 | 8.43 | 84.3 | | | | | |
| Barium | | | | | | | | |
| Beryllium | | | | | | | | |
| Cadmium | | | | | | | | |
| Calcium | | | | | | | | |
| Chromium | | | | | | | | |
| Cobalt | | | | | | | | |
| Copper | | | | | | | | |
| Iron | | | | | | | | |
| Lead | | | | | | | | |
| Magnesium | | | | | | | | |
| Manganese | | | | | | | | |
| Mercury | | | | | | | | |
| Nickel | | | | | | | | |
| Potassium | | | | | | | | |
| Selenium | 5.0 | 10.61 | 212.2 | | | | | |
| Silver | | | | | | | | |
| Sodium | | | | | | | | |
| Thallium | | | | | | | | |
| Vanadium | | | | | | | | |
| Zinc | | | | | | | | |

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3
BLANKS

Ref.2

ıb Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0109

ıb Code: SKINER Case No.: 18622 SAS No.: SDG No.: MCHG09

ˈeparation Blank Matrix (soil/water):

ˈeparation 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 | | | 23.9 | U | | | | | | | P |
| Antimony | | | 16.3 | U | | | | | | | P |
| Arsenic | | | 2.4 | U | | | | | | | F |
| Bar | | | 4.6 | U | | | | | | | P |
| Beryllium | | | 0.7 | U | | | | | | | P |
| Cadmium | | | 1.5 | U | | | | | | | P |
| Calcium | | | 19.6 | B | | | | | | | P |
| Chromium | | | 4.9 | U | | | | | | | P |
| Cobalt | | | 3.5 | U | | | | | | | P |
| Copper | | | 3.8 | U | | | | | | | P |
| Iron | | | 16.0 | B | | | | | | | P |
| Lead | | | 1.4 | B | 1.5 | B | 1.0 | U | | | F |
| Magnesium | | | 62.1 | B | | | | | | | P |
| Manganese | | | 4.4 | U | | | | | | | P |
| Mercury | | | 0.1 | U | 0.1 | U | 0.1 | U | | | CV |
| Nickel | | | 3.9 | U | | | | | | | P |
| Potassium | | | 265.5 | U | | | | | | | P |
| Selenium | | | 3.6 | U | | | | | | | F |
| Silver | | | 4.8 | U | | | | | | | P |
| Sod | | | 89.8 | B | | | | | | | P |
| Thallium | | | 0.9 | U | 0.9 | U | 0.9 | U | | | F |
| Vanadium | | | 2.4 | U | | | | | | | P |
| Zinc | | | 2.9 | U | | | | | | | P |
| Cyanide | | | 10.0 | U | 10.0 | U | 10.0 | U | | | CA |

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3
BLANKS

Ref. 2

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0109

Lab Code: SKINER Case No.: 18622 SAS No.: SDG No.: MCHG09

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 | 2.4 | U | 2.4 | U | 2.4 | U | 2.4 | 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 | | | | | F |
| Magnesium | | | | | | | | | | | NR |
| Manganese | | | | | | | | | | | NR |
| Mercury | | | 0.1 | U | | | | | | | CV |
| Nickel | | | | | | | | | | | NR |
| Potassium | | | | | | | | | | | NR |
| Selenium | 3.6 | U | 3.6 | U | 3.6 | U | 3.6 | U | | | F |
| Silver | | | | | | | | | | | NR |
| Sodium | | | | | | | | | | | NR |
| Thallium | | | | | | | | | | | NR |
| Vanadium | | | | | | | | | | | NR |
| Zinc | | | | | | | | | | | NR |
| Cyanide | | | | | | | | | | | NR |

# SUMMARY OF BLANK ANALYSES

(Highest values for each category)

(Units = ug/l)

Ref. 2

Case: 18622

SDGs: MCH615 (Filt)
MCH601 (aq)
MCH609 (soil)
POS BLANKS

| Metal | INITIAL CALIB. BLANKS | | | CONT. CALIB. BLANKS | | | PREP. BLANKS | | | FIELD BLANKS | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | AQ SDG# 01 | FILT SDG# 15 | SOL SDG# 09 | AQ SDG# 01 | FILT SDG# 15 | SOL SDG# 09 | AQ SDG# 01 | FILT SDG# 15 | SOL SDG# 09 | AQ SPL# 01 | FILT SPL# 15 | SOL SPL# 09 |
| Al | | | | 37 [2] | 37 | 25 | 22.69 | | | 21 | 40.3 [2] | |
| As | | | | | | | | | | | | |
| Sb | | | | 19.3 | 19.3 | | | | | | [3] | |
| Ba | | | | 1.1 [1,2] | 1.1 | | | | | | 4.5 [3] | |
| Be | | | | | | | | | | | | |
| Cd | | | | 1.4 | 1.4 | 2 | | | | | | |
| Ca | | | | 29.3 | 29.3 | 33.4 | 66.52 | 23.52 | 80.77 [1,3] | 78.8 | 2360 [2] | |
| Cr | | | | | | 7.1 | | | 4.98 | | | |
| Co | 2.6 | 2.6 | | 3 | 3 | | | | | | | |
| Cu | | | | | | 1,3,2 | | | | | 3 [2] | |
| Fe | | | | | | 25.4 | 21.65 | | 16.83 | | 45.7 [2] | |
| Pb | | | | | | 2.6 | | | | 5.7 | | |
| Mg | 26.4 | 26.4 | | 46.4 | 46.4 | 88.7 [3] | 28.54 | 23.54 | | 35 | 687 [2] | |
| Mn | | | | | | | | | | | 2 [2] | |
| Hg | | | | | | | | | | | | |
| Ni | | | | | | | | | 4.79 | | | |
| K | | | | | | | | | | | 2930 [2] | |
| Se | | | | | | | | | | | | |
| Ag | 3.2 | 3.2 | | 3.7 | 3.7 | 1,3,2 | | | | | | |
| Na | | | 32.8 | | | 111.4 | 98.39 | | ~~18.464~~ 42.42 | 87.2 | 2910 [2] | |
| Tl | | | | | | 5.6 | | | | | | |
| V | | | | | | 3 | | | | | | |
| Zn | | | 3.4 | | | | | | 10.73 | | 10.2 | |

Comments: 1- Qualifies unfiltered aqueous samples
2- Qualifies filtered aqueous samples
3- Qualifies solid samples
Action level for blanks = Max. blank x 5 x Dilution factor, adjusted for appropriate matrix. Field blanks not used to qualify themselves. Filtered field blanks applied only to filtered samples.

# SUMMARY OF BLANK ANALYSES

(Highest values for each category)

(Units = ug/l)

Ref. 2

Case: 18622

SDGs: MC1615 (filt)
MC1601 (aq)
MC1609 (sol)
NEG BLANKS

| Metal | INITIAL CALIB. BLANKS | | | CONT. CALIB. BLANKS | | | PREP. BLANKS | | | FIELD BLANKS | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | AQ SDG# | FILT SDG# | SOL SDG# | AQ SDG# | FILT SDG# | SOL SDG# | AQ SDG# | FILT SDG# | SOL SDG# | AQ SPL# | FILT SPL# | SOL SPL# |
| units - | 01 | 15 | 09 | 01 | 15 | 09 | 01 | 15 | 09 | 01 | 15 | 09 |
| Al | | | | | | | | | | | | |
| As | | | | | | | | | | | | |
| Sb | | | | | | | | | | | | |
| Ba | | | | | | | | | | | | |
| Be | | | | | | | | | | | | |
| Cd | | | | | | | | | | | | |
| Ca | | | | | | | | | | | | |
| Cr | | | | | | | | | | | | |
| Co | | | | | | | | | | | | |
| Cu | | | | | | | | | | | | |
| Fe | | | | | | | | | | | | |
| Pb | | | | | | | | | | | | |
| Mg | | | | | | | | | | | | |
| Mn | | | | | | | | | | | | |
| Hg | | | | | | | | | | | | |
| Ni | | | | | | | | | | | | |
| K | | | | | | | | | | | | |
| Se | | | | | | | | -3.49 | | | | |
| Ag | | | | | | | | | | | | |
| Na | | | | -35.8 | -35.8 | | | | | | | |
| Tl | | | | -1.8 | -1.8 | | -1.679 | | | | | |
| V | | | | | | | | | | | | |
| Zn | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

Comments: All absolute values < CRDL; no action

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3
BLANKS

Ref. 2

ab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0109

ab Code: SKINER Case No.: 18622 SAS No.: SDG No.: MCHG09

-eparation Blank Matrix (soil/water):

-eparation 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 | | | 2.4 | U | 2.4 | U | | | | | F |
| Bar a | | | | | | | | | | | 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 | 3.6 | U | 3.6 | U | 3.6 | U | 3.6 | U | | | F |
| Silver | | | | | | | | | | | NR |
| Sod a | | | | | | | | | | | NR |
| Thallium | | | | | | | | | | | NR |
| Vanadium | | | | | | | | | | | NR |
| Zinc | | | | | | | | | | | NR |
| Cyanide | | | | | | | | | | | NR |

023

U.S. EPA - CLP

3
BLANKS

Ref. 2

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0109

Lab Code: SKINER Case No.: 18622 SAS No.: SDG No.: MCHG09

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 | 2.4 | U | 2.4 | U | 2.4 | U | 2.4 | 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 | | | | | | | | | | | NR |
| Silver | | | | | | | | | | | NR |
| Sodium | | | | | | | | | | | NR |
| Thallium | | | | | | | | | | | NR |
| Vanadium | | | | | | | | | | | NR |
| Zinc | | | | | | | | | | | NR |
| Cyanide | | | | | | | | | | | NR |

U.S. EPA - CLP

3
BLANKS

Ref. 2

Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0109

Code: SKINER Case No.: 18622 SAS No.: SDG No.: MCHG01

paration Blank Matrix (soil/water): WATER

paration Blank Concentration Units (ug/L or mg/kg): UG/L

| alyte | Initial Calib. Blank (ug/L) | C | Continuing Calibration Blank (ug/L) 1 | C | 2 | C | 3 | C | Prepa-ration Blank | C | M |
|---|---|---|---|---|---|---|---|---|---|---|---|
| uminum | | | 17.3 | U | 24.7 | B | | | | | P |
| timony | | | 19.3 | B | 16.5 | U | | | | | P |
| senic | | | 2.6 | U | 2.6 | U | 2.6 | U | | | F |
| um | | | 1.1 | B | 1.1 | B | | | | | P |
| ryllium | | | 0.4 | U | 0.4 | U | | | | | P |
| dmium | | | 1.4 | B | 1.4 | U | | | | | P |
| lcium | | | 14.3 | U | 29.3 | B | | | | | P |
| romium | | | 3.7 | U | 3.7 | U | | | | | P |
| balt | | | 3.0 | B | 2.3 | B | | | | | P |
| pper | | | 2.4 | U | 2.4 | U | | | | | P |
| on | | | 16.3 | U | 16.3 | U | | | | | P |
| ad | | | 2.2 | U | | | | | | | F |
| gnesium | | | 32.1 | B | 46.4 | B | | | | | P |
| nganese | | | 1.3 | U | 1.3 | U | | | | | P |
| rcury | | | 0.2 | U | 0.2 | U | 0.2 | U | 0.200 | U | CV |
| ckel | | | 6.0 | U | 6.0 | U | | | | | P |
| tassium | | | 77.1 | U | 77.1 | U | | | | | P |
| lenium | | | 3.7 | U | 3.7 | U | 3.7 | U | | | F |
| lver | | | 2.3 | U | 3.7 | B | | | | | P |
| um | | | 29.7 | U | -35.8 | B | | | | | P |
| allium | | | 1.6 | U | -1.8 | B | 1.6 | U | | | F |
| nadium | | | 3.3 | U | 3.3 | U | | | | | P |
| nc | | | 10.1 | U | 10.1 | U | | | | | P |
| anide | 10.0 | U | 10.0 | U | 10.0 | U | | | | | CA |

024

U.S. EPA - CLP

3
BLANKS

Ref. 2

Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0109

Code: SKINER Case No.: 18622 SAS No.: SDG No.: MCHG01

paration Blank Matrix (soil/water):

paration Blank Concentration Units (ug/L or mg/kg):

| alyte | Initial Calib. Blank (ug/L) | C | Continuing Calibration Blank (ug/L) 1 | C | 2 | C | 3 | C | Prepa-ration Blank | C | M |
|---|---|---|---|---|---|---|---|---|---|---|---|
| uminum | | | | | | | | | | | NR |
| timony | | | | | | | | | | | NR |
| senic | | | | | | | | | | | NR |
| rium | | | | | | | | | | | NR |
| yllium | | | | | | | | | | | NR |
| dmium | | | | | | | | | | | NR |
| lcium | | | | | | | | | | | NR |
| romium | | | | | | | | | | | NR |
| balt | | | | | | | | | | | NR |
| pper | | | | | | | | | | | NR |
| on | | | | | | | | | | | NR |
| ad | | | | | | | | | | | NR |
| gnesium | | | | | | | | | | | NR |
| nganese | | | | | | | | | | | NR |
| rcury | | | 0.2 | U | 0.2 | U | 0.2 | U | | | CV |
| ckel | | | | | | | | | | | NR |
| tassium | | | | | | | | | | | NR |
| lenium | | | 3.7 | U | | | | | | | F |
| lver | | | | | | | | | | | NR |
| dium | | | | | | | | | | | NR |
| allium | | | | | | | | | | | NR |
| nadium | | | | | | | | | | | NR |
| nc | | | | | | | | | | | NR |
| anide | | | | | | | | | | | NR |

025

U.S. EPA - CLP

3
BLANKS

Ref. 2

ıb Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0109

ıb Code: SKINER Case No.: 18622 SAS No.: SDG No.: MCHG09

'eparation Blank Matrix (soil/water):

'eparation Blank Concentration Units (ug/L or mg/kg):

| ınalyte | Initial Calib. Blank (ug/L) | C | Continuing Calibration Blank (ug/L) 1 | C | 2 | C | 3 | C | Prepa-ration Blank | C | M |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ıluminum | | | | | | | | | | | NR |
| ıntimony | | | | | | | | | | | NR |
| ırse ic | | | 2.4 | U | | | | | | | F |
| ıar | | | | | | | | | | | NR |
| ıeryllium | | | | | | | | | | | NR |
| ıadmium | | | | | | | | | | | NR |
| ıalcium | | | | | | | | | | | NR |
| ıhromium | | | | | | | | | | | NR |
| ıobalt | | | | | | | | | | | NR |
| ıopper | | | | | | | | | | | NR |
| ıron | | | | | | | | | | | NR |
| ıead | | | | | | | | | | | NR |
| ıagnesium | | | | | | | | | | | NR |
| ıanganese | | | | | | | | | | | NR |
| ıercury | | | | | | | | | | | NR |
| ıickel | | | | | | | | | | | NR |
| ıotassium | | | | | | | | | | | NR |
| ıelenium | | | | | | | | | | | NR |
| ıilver | | | | | | | | | | | NR |
| ıodı | | | | | | | | | | | NR |
| ıhallium | | | | | | | | | | | NR |
| ıanadium | | | | | | | | | | | NR |
| ıinc | | | | | | | | | | | NR |
| ıyanide | | | | | | | | | | | NR |

025

U.S. EPA - CLP

3
BLANKS

Ref. 2

Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0109

Code: SKINER Case No.: 18622 SAS No.: SDG No.: MCHG01

paration Blank Matrix (soil/water): WATER

paration Blank Concentration Units (ug/L or mg/kg): UG/L

| alyte | Initial Calib. Blank (ug/L) | C | Continuing Calibration Blank (ug/L) 1 | C | 2 | C | 3 | C | Prepa-ration Blank | C | M |
|---|---|---|---|---|---|---|---|---|---|---|---|
| uminum | 17.3 | U | 37.0 | B | 17.3 | U | 17.3 | U | 22.690 | B | P |
| timony | 16.5 | U | 16.5 | U | 16.5 | U | 16.5 | U | 16.500 | U | P |
| senic | 2.6 | U | 2.6 | U | 2.6 | U | 2.6 | U | 2.600 | U | F |
| rium | 1.0 | U | 1.0 | U | 1.0 | U | 1.0 | U | 1.000 | U | P |
| ryllium | 0.4 | U | 0.4 | U | 0.4 | U | 0.4 | U | 0.400 | U | P |
| dmium | 1.4 | U | 1.4 | U | 1.4 | U | 1.4 | U | 1.400 | U | P |
| lcium | 14.3 | U | 27.6 | B | 25.7 | B | 22.2 | B | 66.520 | B | P |
| romium | 3.7 | U | 3.7 | U | 3.7 | U | 3.7 | U | 3.700 | U | P |
| balt | 2.6 | B | 2.3 | U | 2.3 | U | 2.3 | B | 2.300 | U | P |
| pper | 2.4 | U | 2.4 | U | 2.4 | U | 2.4 | U | 2.400 | U | P |
| on | 16.3 | U | 16.3 | U | 16.3 | U | 16.3 | U | 21.650 | B | P |
| ad | 2.2 | U | 2.2 | U | 2.2 | U | 2.2 | U | 2.200 | U | F |
| gnesium | 26.4 | B | 31.4 | B | 20.7 | B | 20.7 | B | 28.540 | B | P |
| nganese | 1.3 | U | 1.3 | U | 1.3 | U | 1.3 | U | 1.300 | U | P |
| rcury | 0.2 | U | 0.2 | U | 0.2 | U | 0.2 | U | 0.200 | U | CV |
| ckel | 6.0 | U | 6.0 | U | 6.0 | U | 6.0 | U | 6.000 | U | P |
| tassium | 77.1 | U | 77.1 | U | 77.1 | U | 77.1 | U | 77.100 | U | P |
| lenium | 3.7 | U | 3.7 | U | 3.7 | U | 3.7 | U | 3.700 | U | F |
| lver | 3.2 | B | 2.3 | U | 2.3 | U | 2.3 | U | 2.300 | U | P |
| dium | 29.7 | U | 29.7 | U | 29.7 | U | 29.7 | U | 98.390 | B | P |
| allium | 1.6 | U | -1.8 | B | 1.6 | U | 1.6 | U | -1.679 | B | F |
| nadium | 3.3 | U | 3.3 | U | 3.3 | U | 3.3 | U | 3.300 | U | P |
| nc | 10.1 | U | 10.1 | U | 10.1 | U | 10.1 | U | 10.100 | U | P |
| anide | 10.0 | U | 10.0 | U | 10.0 | U | 10.0 | U | 10.000 | U | CA |

U.S. EPA - CLP

3
BLANKS

Ref.2

Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0109

Code: SKINER Case No.: 18622 SAS No.: SDG No.: MCHG01

paration Blank Matrix (soil/water):

paration Blank Concentration Units (ug/L or mg/kg):

| alyte | Initial Calib. Blank (ug/L) | C | Continuing Calibration Blank (ug/L) 1 | C | 2 | C | 3 | C | Prepa-ration Blank | C | M |
|---|---|---|---|---|---|---|---|---|---|---|---|
| uminum | | | | | | | | | | | NR |
| timony | | | | | | | | | | | NR |
| enic | | | | | | | | | | | NR |
| um | | | | | | | | | | | NR |
| ryllium | | | | | | | | | | | NR |
| dmium | | | | | | | | | | | NR |
| lcium | | | | | | | | | | | NR |
| romium | | | | | | | | | | | NR |
| balt | | | | | | | | | | | NR |
| pper | | | | | | | | | | | NR |
| on | | | | | | | | | | | NR |
| ad | | | | | | | | | | | NR |
| gnesium | | | | | | | | | | | NR |
| nganese | | | | | | | | | | | NR |
| rcury | | | 0.2 | U | 0.2 | U | 0.2 | U | | | CV |
| ckel | | | | | | | | | | | NR |
| tassium | | | | | | | | | | | NR |
| lenium | | | | | | | | | | | NR |
| lver | | | | | | | | | | | NR |
| um | | | | | | | | | | | NR |
| allium | | | | | | | | | | | NR |
| nadium | | | | | | | | | | | NR |
| nc | | | | | | | | | | | NR |
| anide | | | | | | | | | | | NR |

026

U.S. EPA - CLP

3
BLANKS

Ref.2

Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0109

Code: SKINER Case No.: 18622 SAS No.: SDG No.: MCHG01

aration Blank Matrix (soil/water):

aration Blank Concentration Units (ug/L or mg/kg):

| lyte | Initial Calib. Blank (ug/L) | C | Continuing Calibration Blank (ug/L) 1 | C | 2 | C | 3 | C | Prepa-ration Blank | C | M |
|---|---|---|---|---|---|---|---|---|---|---|---|
| minum | | | | | | | | | | | NR |
| imony | | | | | | | | | | | NR |
| enic | | | | | | | | | | | NR |
| ium | | | | | | | | | | | NR |
| yllium | | | | | | | | | | | NR |
| mium | | | | | | | | | | | NR |
| cium | | | | | | | | | | | NR |
| omium | | | | | | | | | | | NR |
| alt | | | | | | | | | | | NR |
| per | | | | | | | | | | | NR |
| n | | | | | | | | | | | NR |
| d | | | | | | | | | | | NR |
| nesium | | | | | | | | | | | NR |
| ganese | | | | | | | | | | | NR |
| cury | | | 0.2 | U | | | | | | | CV |
| kel | | | | | | | | | | | NR |
| assium | | | | | | | | | | | NR |
| enium | | | | | | | | | | | NR |
| ver | | | | | | | | | | | NR |
| ium | | | | | | | | | | | NR |
| llium | | | | | | | | | | | NR |
| adium | | | | | | | | | | | NR |
| c | | | | | | | | | | | NR |
| nide | | | | | | | | | | | NR |

027

U.S. EPA - CLP

3
BLANKS

Refiz

Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0109

Code: SKINER Case No.: 18622 SAS No.: SDG No.: MCHG01

aration Blank Matrix (soil/water):

aration Blank Concentration Units (ug/L or mg/kg):

| lyte | Initial Calib. Blank (ug/L) | C | Continuing Calibration Blank (ug/L) 1 | C | 2 | C | 3 | C | Prepa-ration Blank | C | M |
|---|---|---|---|---|---|---|---|---|---|---|---|
| minum | | | | | | | | | | | NR |
| imony | | | | | | | | | | | NR |
| enic | | | | | | | | | | | NR |
| m | | | | | | | | | | | NR |
| llium | | | | | | | | | | | NR |
| mium | | | | | | | | | | | NR |
| lcium | | | | | | | | | | | NR |
| omium | | | | | | | | | | | NR |
| balt | | | | | | | | | | | NR |
| pper | | | | | | | | | | | NR |
| on | | | | | | | | | | | NR |
| ad | | | | | | | | | | | NR |
| gnesium | | | | | | | | | | | NR |
| nganese | | | | | | | | | | | NR |
| cury | 0.2 | U | 0.2 | U | 0.2 | U | 0.2 | U | | | CV |
| kel | | | | | | | | | | | NR |
| assium | | | | | | | | | | | NR |
| lenium | | | | | | | | | | | NR |
| lver | | | | | | | | | | | NR |
| m | | | | | | | | | | | NR |
| dium | | | | | | | | | | | NR |
| nadium | | | | | | | | | | | NR |
| nc | | | | | | | | | | | NR |
| anide | | | | | | | | | | | NR |

028

U.S. EPA - CLP

3
BLANKS

Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0109

Code: SKINER Case No.: 18622 SAS No.: SDG No.: MCHG01

paration Blank Matrix (soil/water):

paration Blank Concentration Units (ug/L or mg/kg):

| alyte | Initial Calib. Blank (ug/L) | C | Continuing Calibration Blank (ug/L) 1 | C | 2 | C | 3 | C | Prepa-ration Blank | C | M |
|---|---|---|---|---|---|---|---|---|---|---|---|
| uminum | | | | | | | | | | | NR |
| timony | | | | | | | | | | | NR |
| senic | | | | | | | | | | | NR |
| rium | | | | | | | | | | | NR |
| ryllium | | | | | | | | | | | NR |
| dmium | | | | | | | | | | | NR |
| lcium | | | | | | | | | | | NR |
| romium | | | | | | | | | | | NR |
| balt | | | | | | | | | | | NR |
| pper | | | | | | | | | | | NR |
| on | | | | | | | | | | | NR |
| ad | | | | | | | | | | | NR |
| gnesium | | | | | | | | | | | NR |
| nganese | | | | | | | | | | | NR |
| rcury | | | 0.2 | U | 0.2 | U | 0.2 | U | | | CV |
| ckel | | | | | | | | | | | NR |
| tassium | | | | | | | | | | | NR |
| lenium | | | | | | | | | | | NR |
| lver | | | | | | | | | | | NR |
| dium | | | | | | | | | | | NR |
| ailium | | | | | | | | | | | NR |
| nadium | | | | | | | | | | | NR |
| nc | | | | | | | | | | | NR |
| anide | | | | | | | | | | | NR |

029

| HALLIBURTON NUS Environmental Corporation and Subsidiaries | Ref. 1 | STANDARD CALCULATION SHEET |
|---|---|---|

| CLIENT: | FILE NO.: | BY: | PAGE OF |
|---|---|---|---|
| SUBJECT: | | CHECKED BY: | DATE: |

Bis(2-ethylhexyl)phthalate (DEHP)

Peak identified in CGG70 as DEHP exactly matches RT of peak in SBLK24

$$\text{Effective IL}_{Blank} = IL_{sample} \times \frac{H_{BLK\ DEHP}}{H_{BLK\ IS}} \times \frac{H_{sample\ IS}}{H_{sample\ DEHP}}$$

$$= 2.16\,ng \times \frac{0.6}{17.7} \times \frac{17}{1.4}$$

$$= 0.889\,ng \approx 0.9\,ng$$

$$\frac{0.9\,ng}{2\,uL} \times \frac{1\,g}{10^9\,ng} \times \frac{10^6\,ug}{g} \times \frac{10^6\,uL}{L} \div 1000\,uL\,(volume) = 0.45\,ug/L$$

Same situation with ~~SB~~ CGG83 (field blank)

$$\text{Eff IL}_B = IL_S \times \frac{H_{B\ DEHP}}{H_{B\ IS}} \times \frac{H_{sample\ IS}}{H_{sample\ DEHP}}$$

$$= 2.16\,ng \times \frac{2.2}{18.3} \times \frac{17}{1.4}$$

$$= 3.15\,ng \approx 3\,ng$$

$$\frac{3.15\,ng}{2\,uL} \times \frac{1\,g}{10^9\,ng} \times \frac{10^6\,ug}{g} \times \frac{10^6\,uL}{L} \div 1000\,uL\,(vol.) = 1.6\,ug/L$$

Ref. 1

# BLANK ANALYSIS RESULTS FOR TENTATIVELY IDENTIFIED COMPOUNDS

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

| SAMPLE # | FRACTION | SCAN #(S) RT | SPECTRUM MATCH INDICES TYPE | SCORE | TYPE | SCORE | ESTIMATED CONCENTRATION | COMPOUND NAME | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|
| TB PG691 | VOA | 21.68 | | | | | 11 ug/L | Trichlorobenzene isc | carryover from CC |
| | | | | | | | spec 182, 145, 109, 74, 184 | | |
| SBLK24 | BNA | 6.71 | | | | | 4 ug/L | unknown | |
| | | | | | | | spec 41, 83, 54, 44, 69, 70, 97 | | |
| SBLK25 | BNA | 5.33 | | | | | 230 ug/kg | 4-methyl-3-penten-2-one | |
| | | | | | | | spec 55, 83, 43, 98, 44, 56, 67, 70, 79 | | |
| | BNA | 6.09 | | | | | ~~600~~ 4700 ug/kg | unknown | |
| | | | | | | | spec 43, 45, 58, 84, 69 | | |
| | BNA | 6.70 | | | | | 34000 ug/kg | 4-hydroxy-4-methyl-2-pentanone | |
| | | | | | | | spec 43, 59, 101, 83, 56 | | |
| | BNA | 7.06 | | | | | 98 ug/kg | 3-methylactone | |
| | | | | | | | spec 55, 41, 39, 98, 99, 43 | | |
| | BNA | 7.44 | | | | | 72 ug/kg | unknown | |
| | | | | | | | spec 43, 59, 70, 53 | | |
| | BNA | 8.23 | | | | | 1300 ug/kg | unknown | |
| | | | | | | | spec 43, 58, 27, 42 | | |
| | BNA | 8.96 | | | | | 240 ug/kg | 3-hexene-2,5-dione | |
| | | | | | | | spec 43, 97, 69, 55, 112 | | |
| | BNA | 10.58 | | | | | 180 ug/kg | unknown | |
| | | | | | | | spec 43, 87, 44, 55, 70 | | |
| | BNA | 16.72 | | | | | 65 ug/kg | unknown | |
| | | | | | | | spec 43, 71, 110, 58, 85, 95, 128 | | |
| CGG83 | BNA | 6.70 | | | | | 6 ug/L | unknown | |
| | | | | | | | spec 41, 83, 54, 69, 97 | | |
| | | 34.08 | | | | | 34 ug/L | unknown | |
| | | | | | | | spec 149, 59, 41, 71, 89, 163, 167 | | |

U.S. EPA - CLP

SB

POST DIGEST SPIKE SAMPLE RECOVERY

Ref. 5

EPA SAMPLE NO.

MCHG13A

Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0109

Code: SKINER Case No.: 18622 SAS No.: SDG No.: MCHG01

Matrix: 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 | | 3462.40 | | 1106.40 | | 2200.0 | 107.1 | | P |
| 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:

032

Metal As
IDL F1: 2.6 ug/l
F4: 2.4
U = < IDL F5: 2.4

# Graphite Furnace Spike Recovery Evaluation Form

Ref. 6

| | 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 | |
|---|---|---|---|---|---|---|---|---|
| F4 | MCHG 15 | 0.8843 ~~05.24~~ | 94.86 | | | | 2.4U | ✓ |
| | 23 | 0.8833 ~~10.634~~ | 83.17 | | | | 2.4U | ✓ |
| | 24 | -1.258 | 82.52 | | | | 2.4U | ✓ |
| | 25 | -.3775 | 76.68 | | | | 2.4U | ✓ |
| F1 | 01 | 7.2745 ~~28.7105~~ | 95.17 | | | | 7.3 | ✓ |
| | 02 | 6.623 | 62.63 | | | 9.01 | 9.0 | ✓ |
| | 05 | 1.129 | 93.66 | | | | 2.6U | ✓ |
| | 06 | 1.635 | 92.96 | | | | 2.6U | ✓ |
| | 07 | 6.238 | 82.96 | | | | 6.2 | ✓ |
| | 08 | 4.944 | 87.31 | | | | 4.9 | ✓ |
| | 13 | 0.7525 | 90.87 | | | | 2.6U | ✓ |
| | 14 | 0.6265 | 96.49 | | | | 2.6U | ✓ |
| | 16 | 4.816 | 82.95 | | | | 4.8 | ✓ |
| | 17 | 2.3415 | 97.85 | | | | 2.6U | ✓ |
| F5 .721 | 09 | 33.1705 | 77.72 | | | 44.924 | 11.7 | ✓ |
| .773 | 10 | 20.1555 | 78.5 | | | 37.733 | 8.9 | ✓ |
| .739 | 11 | 18.9325 | 78.94 | | | 19.358 31.023 | 5.0 | ✓ |
| .672 | 18 | 29.675 | 90.1 | | | | 8.7 | ✓ |
| .798 | 19 | 33.875 | 88.24 | | | | 8.3 | ✓ |
| .817 | 20 | 39.568 | 73.15 | | | 36.452 | 8.6 | ✓ |
| .751 | 21 | 64.825 | 74.92 | | | 43.073 31.409 | 26.8 | ✓ |
| .75 | 22 | 34.7385 | 76.52 | | | 39.932 38.841 | 10.3 | ✓ |
| F5 | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
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U.S. EPA - CLP

6
DUPLICATES

Ref. 4

EPA SAMPLE NO.

MCHG13D

lame: SKINNER & SHERMAN LABS. Contract: 68-D0-0109

:ode: SKINER Case No.: 18622 SAS No.: SDG No.: MCHG01

x (soil/water): WATER Level (low/med): LOW

ids 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 | |
|---|---|---|---|---|---|---|---|---|---|
| Alur um | 200.0 | 640.7700 | | 777.3600 | | 19.3 | | P | |
| Ant ny | | 16.5000 | U | 16.5000 | U | | | P | |
| Arsenic | | 2.6000 | U | 2.6000 | U | | | F | |
| Barium | | 101.1300 | B | 103.7400 | B | 2.5 | | P | |
| Beryllium | | 0.4000 | U | 0.4000 | U | | | P | |
| Cadmium | | 1.4000 | U | 1.4000 | U | | | P | |
| Calcium | | 103150.0000 | | 104610.0000 | | 1.4 | | P | |
| Chromium | | 3.7000 | U | 3.7000 | U | | | P | |
| Cobalt | | 2.3100 | B B | 2.6400 | B | ~~13.3~~ | | P | IN |
| Copper | | 6.2400 | B | 3.5600 | B | 54.7 | | P | |
| Iron | | 1106.4000 | | 1200.9000 | | 8.2 | | P | |
| Lead | 3.0 | 11.0455 | B | 8.0075 | | ~~31.9~~ | * | F | IN |
| Magnesium | | 29405.0000 | | 29837.0000 | | 1.5 | | P | |
| Manganese | | 121.5200 | | 121.2000 | | 0.3 | | P | |
| Mercury | | 0.2000 | U | 0.2000 | U | | | CV | |
| Nickel | | 6.0000 | U | 6.0000 | U | | | P | |
| Pota sium | | 2547.9000 | B | 2489.5000 | B | 2.3 | | P | |
| Sel um | | 3.7000 | U | 3.7000 | U | | | F | |
| Silver | | 2.3000 | U | 2.3000 | U | | | P | |
| Sodium | | 152440.0000 | | 154860.0000 | | 1.6 | | P | |
| Thallium | | 8.0000 | U | 8.0000 | U | | | F | |
| Vanadium | | 3.3000 | U | 3.3000 | U | | | P | |
| Zinc | 20.0 | 37.2000 | B | 28.3500 | | ~~27.0~~ | | P | IN |
| Cyanide | | 10.0000 | U | 10.0000 | U | | | CA | |

IN = Indeterminate

033

U.S. EPA - CLP

6
DUPLICATES

Ref. 4

EPA SAMPLE NO.

MCHG18D

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0109

Lab Code: SKINER Case No.: 18622 SAS No.: SDG No.: MCHG09

Matrix (soil/water): SOIL Level (low/med): LOW

% Solids for Sample: 67.2 % Solids for Duplicate: 66.9

Concentration Units (ug/L or mg/kg dry weight): MG/KG

| Analyte | Control Limit | Sample (S) | C | Duplicate (D) | C | RPD | Q | M |
|---|---|---|---|---|---|---|---|---|
| Aluminum | | 10353.0174 | | 11047.2821 | | 6.5 | | P |
| Antimony | | 4.8032 | U | 4.5766 | U | | | P |
| Arsenic | 2.9 | 8.7422 | | 10.7850 | | 20.9 | | F |
| Barium | 58.9 | 185.6966 | | 191.0939 | | 2.9 | | P |
| Beryllium | | 1.3054 | B | 1.3674 | B | 4.6 | | P |
| Cadmium | | 0.4420 | U | 0.4212 | U | | | P |
| Calcium | | 25160.5964 | | 26492.0261 | | 5.2 | | P |
| Chromium | | 21.8087 | | 22.2063 | | 1.8 | | P |
| Cobalt | | 8.8166 | B | 9.5631 | B | 8.1 | | P |
| Copper | | 43.7029 | | 46.0945 | | 5.3 | | P |
| Iron | | 21956.0349 | | 21918.5198 | | 0.2 | | P |
| Lead | | 242.8100 | | 206.8600 | | 16.0 | | F |
| Magnesium | 1473.4 | 4789.6040 | | 4760.7817 | | 0.6 | | P |
| Manganese | | 991.6902 | | 1081.2837 | | 8.6 | | P |
| Mercury | 0.1 | 0.3351 | | 0.3226 | | 3.8 | | CV |
| Nickel | 11.8 | 20.0525 | | 20.4543 | | 2.0 | | P |
| Potassium | | 1249.9116 | B | 1324.6013 | B | 5.8 | | P |
| Selenium | 1.5 | 1.9154 | | 1.0608 | U | 200.0 | * | F |
| Silver | | 1.5146 | B | 1.4151 | B | 6.8 | | P |
| Sodium | | 286.4657 | B | 316.0097 | B | 9.8 | | P |
| Thallium | | 0.2816 | B | 0.4508 | B | 46.2 | | F |
| Vanadium | 14.7 | 20.5180 | | 21.0299 | | 2.5 | | P |
| Zinc | | 200.8693 | | 191.0630 | | 5.0 | | P |
| Cyanide | | 5.9587 | | 7.5796 | | 23.9 | * | CA |

lead 579 however within range affected by low level variation near ID no action

029

U.S. EPA - CLP
1

Ref. 2

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MCHG15

ab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0109

ab Code: SKINER Case No.: 18622 SAS No.: SDG No.: MCHG15

atrix (soil/water): WATER Lab Sample ID: 08233-01S

evel (low/med): LOW Date Received: 08/20/92

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 | 40.3 | B | N | P |
| 7440-36-0 | Antimony | 16.5 | U | | P |
| 7440-38-2 | Arsenic | 2.4 | U | | F |
| 7440-39-3 | Barium | 4.5 | B | | P |
| 7440-41-7 | Beryllium | 0.40 | U | | P |
| 7440-43-9 | Cadmium | 1.4 | U | | P |
| 7440-70-2 | Calcium | 2360 | B | | P |
| 7440-47-3 | Chromium | 3.7 | U | | P |
| 7440-48-4 | Cobalt | 2.3 | U | | P |
| 7440-50-8 | Copper | 3.0 | B | | P |
| 7439-89-6 | Iron | 45.7 | B | | P |
| 7439-92-1 | Lead | 2.2 | U | * | F |
| 7439-95-4 | Magnesium | 687 | B | | P |
| 7439-96-5 | Manganese | 2.0 | B | | P |
| 7439-97-6 | Mercury | 0.20 | U | N | CV |
| 7440-02-0 | Nickel | 6.0 | U | | P |
| 7440-09-7 | Potassium | 2930 | B | | P |
| 7782-49-2 | Selenium | 3.1 | U | M | F |
| 7440-22-4 | Silver | 2.3 | U | | P |
| 7440-23-5 | Sodium | 2910 | B | | P |
| 7440-28-0 | Thallium | 1.6 | U | N | F |
| 7440-62-2 | Vanadium | 3.3 | U | | P |
| 7440-66-6 | Zinc | 10.2 | B | | P |
| | Cyanide | | | | NR |

olor Before: COLORLESS Clarity Before: CLEAR Texture:

olor After: COLORLESS Clarity After: CLEAR Artifacts:

omments:

FILTERED FB

0002

U.S. EPA - CLP
1

Ref. 2

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MCHG14

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0109

Lab Code: SKINER Case No.: 18622 SAS No.: SDG No.: MCHG01

Matrix (soil/water): WATER Lab Sample ID: 08231-08S

Level (low/med): LOW Date Received: 08/20/92

% 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 | 21.0 | B | | P |
| 7440-36-0 | Antimony | 16.5 | U | | P |
| 7440-38-2 | Arsenic | 2.6 | U | | F |
| 7440-39-3 | Barium | 1.0 | U | | P |
| 7440-41-7 | Beryllium | 0.40 | U | | P |
| 7440-43-9 | Cadmium | 1.4 | U | | P |
| 7440-70-2 | Calcium | 78.8 | B | | P |
| 7440-47-3 | Chromium | 3.7 | U | | P |
| 7440-48-4 | Cobalt | 2.3 | U | | P |
| 7440-50-8 | Copper | 2.4 | U | | P |
| 7439-89-6 | Iron | 16.3 | U | N | P |
| 7439-92-1 | Lead | 5.7 | | N* | F |
| 7439-95-4 | Magnesium | 35.0 | B | | P |
| 7439-96-5 | Manganese | 1.3 | U | | P |
| 7439-97-6 | Mercury | 0.20 | U | | CV |
| 7440-02-0 | Nickel | 6.0 | U | | P |
| 7440-09-7 | Potassium | 77.1 | U | | P |
| 7782-49-2 | Selenium | 3.7 | U | | F |
| 7440-22-4 | Silver | 2.3 | U | | P |
| 7440-23-5 | Sodium | 87.2 | B | | P |
| 7440-28-0 | Thallium | 1.6 | U | N | F |
| 7440-62-2 | Vanadium | 3.3 | U | | P |
| 7440-66-6 | Zinc | 10.1 | U | | P |
| | Cyanide | 10.0 | U | | CA |

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

UF FB

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MCHG23

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0109

Lab Code: SKINER Case No.: 18622 SAS No.: SDG No.: MCHG15

Matrix (soil/water): WATER Lab Sample ID: 08233-02S

Level (low/med): LOW Date Received: 08/20/92

% 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 | 45.5 | B | N | P |
| 7440-36-0 | Antimony | 16.5 | U | | P |
| 7440-38-2 | Arsenic | 2.4 | U | W | F |
| 7440-39-3 | Barium | 91.6 | B | | P |
| 7440-41-7 | Beryllium | 0.40 | U | | P |
| 7440-43-9 | Cadmium | 1.4 | U | | P |
| 7440-70-2 | Calcium | 106000 | | | P |
| 7440-47-3 | Chromium | 3.7 | U | | P |
| 7440-48-4 | Cobalt | 2.3 | U | | P |
| 7440-50-8 | Copper | 3.7 | B | | P |
| 7439-89-6 | Iron | 69.0 | B | | P |
| 7439-92-1 | Lead | 2.2 | U | * | F |
| 7439-95-4 | Magnesium | 30400 | | | P |
| 7439-96-5 | Manganese | 144 | | | P |
| 7439-97-6 | Mercury | 0.20 | U | N | CV |
| 7440-02-0 | Nickel | 6.0 | U | | P |
| 7440-09-7 | Potassium | 142000 | | | P |
| 7782-49-2 | Selenium | 3.1 | U | | F |
| 7440-22-4 | Silver | 2.3 | U | | P |
| 7440-23-5 | Sodium | 119000 | | | P |
| 7440-28-0 | Thallium | 8.0 | U | EN | F |
| 7440-62-2 | Vanadium | 3.3 | U | | P |
| 7440-66-6 | Zinc | 17.9 | B | | P |
| | Cyanide | | | | NR |

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

0003

# INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MCHG24

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0109

Lab Code: SKINER Case No.: 18622 SAS No.: SDG No.: MCHG15

Matrix (soil/water): WATER Lab Sample ID: 08233-03S

Level (low/med): LOW Date Received: 08/20/92

% 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 | 32.2 | B | N | P |
| 7440-36-0 | Antimony | 17.1 | B | | P |
| 7440-38-2 | Arsenic | 2.4 | U | W | F |
| 7440-39-3 | Barium | 93.1 | B | | P |
| 7440-41-7 | Beryllium | 0.40 | U | | P |
| 7440-43-9 | Cadmium | 1.4 | U | | P |
| 7440-70-2 | Calcium | 110000 | | | P |
| 7440-47-3 | Chromium | 3.7 | U | | P |
| 7440-48-4 | Cobalt | 3.0 | B | | P |
| 7440-50-8 | Copper | 4.7 | B | | P |
| 7439-89-6 | Iron | 62.6 | B | | P |
| 7439-92-1 | Lead | 2.2 | U | * | F |
| 7439-95-4 | Magnesium | 31600 | | | P |
| 7439-96-5 | Manganese | 178 | | | P |
| 7439-97-6 | Mercury | 0.20 | U | N | CV |
| 7440-02-0 | Nickel | 6.0 | U | | P |
| 7440-09-7 | Potassium | 144000 | | | P |
| 7782-49-2 | Selenium | 3.1 | U | W | F |
| 7440-22-4 | Silver | 2.3 | U | | P |
| 7440-23-5 | Sodium | 125000 | | | P |
| 7440-28-0 | Thallium | 8.0 | U | EN | F |
| 7440-62-2 | Vanadium | 3.3 | U | | P |
| 7440-66-6 | Zinc | 23.6 | | | P |
| | Cyanide | | | | NR |

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

00

U.S. EPA - CLP

SA

SPIKE SAMPLE RECOVERY

Ref.5

EPA SAMPLE NO.

MCHG25S

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0109

Lab Code: SKINER Case No.: 18622 SAS No.: SDG No.: MCHG15

Matrix: WATER Level (low/med): LOW

% Solids for Sample: 0.0

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 | 2802.0000 | | 41.6500 | B | 2000.00 | 138.0 | N | P |
| Antimony | 75-125 | 505.6300 | | 16.5000 | U | 500.00 | 101.1 | | P |
| Arsenic | 75-125 | 38.1545 | | 2.4000 | U | 40.00 | 95.4 | | F |
| Barium | 75-125 | 2045.3000 | | 93.8700 | B | 2000.00 | 97.6 | | P |
| Beryllium | 75-125 | 50.9800 | | 0.4000 | U | 50.00 | 102.0 | | P |
| Cadmium | 75-125 | 48.8100 | | 1.4000 | U | 50.00 | 97.6 | | P |
| Calcium | | | | | | | | | NR |
| Chromium | 75-125 | 196.6100 | | 3.7000 | U | 200.00 | 98.3 | | P |
| Cobalt | 75-125 | 480.0400 | | 2.9800 | B | 500.00 | 95.4 | | P |
| Copper | 75-125 | 250.5900 | | 6.0600 | B | 250.00 | 97.8 | | P |
| Iron | 75-125 | 1073.2000 | | 19.8100 | B | 1000.00 | 105.3 | | P |
| Lead | 75-125 | 20.7795 | | 3.7790 | | 20.00 | 85.0 | | F |
| Magnesium | | | | | | | | | NR |
| Manganese | 75-125 | 519.3300 | | 12.4500 | B | 500.00 | 101.4 | | P |
| Mercury | 75-125 | 1.4262 | | 0.2000 | U | 1.00 | 142.6 | N | CV |
| Nickel | 75-125 | 467.2800 | | 6.0000 | U | 500.00 | 93.5 | | P |
| Potassium | | | | | | | | | NR |
| Selenium | 75-125 | 8.6185 | | 3.1000 | U | 10.00 | 86.2 | | F |
| Silver | 75-125 | 47.2800 | | 2.3000 | U | 50.00 | 94.6 | | P |
| Sodium | | | | | | | | | NR |
| Thallium | 75-125 | 6.0060 | B | 8.0000 | U | 50.00 | 12.0 | N | F |
| Vanadium | 75-125 | 487.5000 | | 3.3000 | U | 500.00 | 97.5 | | P |
| Zinc | 75-125 | 509.6000 | | 38.2000 | | 500.00 | 94.3 | | P |
| Cyanide | | | | | | | | | NR |

Comments:

0015

U.S. EPA - CLP

5A

SPIKE SAMPLE RECOVERY Ref. 5

EPA SAMPLE NO.

MCHG13S

Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0109

Code: SKINER Case No.: 18622 SAS No.: SDG No.: MCHG01

-ix: WATER Level (low/med): LOW

olids for Sample: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

| nalyte | Control Limit %R | Spiked Sample Result (SSR) | C | Sample Result (SR) | C | Spike Added (SA) | %R | Q | M |
|---|---|---|---|---|---|---|---|---|---|
| uminum | 75-125 | 2939.1000 | | 640.7700 | | 2000.00 | 114.9 | | P |
| timony | 75-125 | 481.5800 | | 16.5000 | U | 500.00 | 96.3 | | P |
| senic | 75-125 | 36.4745 | | 2.6000 | U | 40.00 | 91.2 | | F |
| rium | 75-125 | 1998.2000 | | 101.1300 | B | 2000.00 | 94.9 | | P |
| ryllium | 75-125 | 50.0500 | | 0.4000 | U | 50.00 | 100.1 | | P |
| dmium | 75-125 | 47.8200 | | 1.4000 | U | 50.00 | 95.6 | | P |
| lcium | | | | | | | | | NR |
| romium | 75-125 | 190.8800 | | 3.7000 | U | 200.00 | 95.4 | | P |
| balt | 75-125 | 462.1600 | | 2.3100 | B | 500.00 | 92.0 | | P |
| pper | 75-125 | 242.7400 | | 6.2400 | B | 250.00 | 94.6 | | P |
| on | 75-125 | 2418.5000 | | 1106.4000 | | 1000.00 | 131.2 | N | P |
| ad | 75-125 | 25.4705 | | 11.0455 | | 20.00 | 72.1 | N | F |
| gnesium | | | | | | | | | NR |
| nganese | 75-125 | 581.1300 | | 121.5200 | | 500.00 | 91.9 | | P |
| rcury | 75-125 | 0.9274 | | 0.2000 | U | 1.00 | 92.7 | | CV |
| ckel | 75-125 | 455.9600 | | 6.0000 | U | 500.00 | 91.2 | | P |
| tassium | | | | | | | | | NR |
| lenium | 75-125 | 8.5700 | | 3.7000 | U | 10.00 | 85.7 | | F |
| lver | 75-125 | 44.4900 | | 2.3000 | U | 50.00 | 89.0 | | P |
| dium | | | | | | | | | NR |
| allium | 75-125 | 8.6805 | B | 8.0000 | U | 50.00 | 17.4 | N | F |
| nadium | 75-125 | 474.3800 | | 3.3000 | U | 500.00 | 94.9 | | P |
| nc | 75-125 | 491.5200 | | 37.2000 | | 500.00 | 90.9 | | P |
| anide | 75-125 | 484.6000 | | 10.0000 | U | 500.00 | 96.9 | | CA |

ments:

** No action since RPD of SR and [SSR-SA] ≈ 25%, acceptable for water matrix; may be due to imprecision

031

U.S. EPA - CLP

DUPLICATES

Ref. 4

EPA SAMPLE NO.

MCHG25D

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0109

Lab Code: SKINER Case No.: 18622 SAS No.: SDG No.: MCHG15

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 | | 41.6500 | B B | 29.3000 | B | ~~34.8~~ | | P | IN |
| Antimony | | 16.5000 | U | 16.5000 | U | | | P | |
| Arsenic | | 2.4000 | U | 2.4000 | U | | | F | |
| Barium | | 93.8700 | B | 93.6900 | B | 0.2 | | P | |
| Beryllium | | 0.4000 | U | 0.4000 | U | | | P | |
| Cadmium | | 1.4000 | U | 1.4000 | U | | | P | |
| Calcium | | 106000.0000 | | 106430.0000 | | 0.4 | | P | |
| Chromium | | 3.7000 | U | 3.7000 | U | | | P | |
| Cobalt | | 2.9800 | B B | 2.3000 | U | ~~200.0~~ | | P | IN |
| Copper | | 6.0600 | B B | 4.0400 | B | ~~40.0~~ | | P | IN |
| Iron | | 19.8100 | B B | 16.9400 | B | ~~15.6~~ | | P | IN |
| Lead | 3.0 | 3.7790 | B | 2.2000 | U | ~~200.0~~ | * | F | IN |
| Magnesium | | 29881.0000 | | 29961.0000 | | 0.3 | | P | |
| Manganese | | 12.4500 | B | 12.4500 | B | 0.0 | | P | |
| Mercury | | 0.2000 | U | 0.2000 | U | | | CV | |
| Nickel | | 6.0000 | U | 6.0000 | U | | | P | |
| Potassium | | 2352.2000 | B B | 2340.5000 | B | ~~0.5~~ | | P | IN |
| Selenium | | 3.1000 | U | 3.1000 | U | | | F | |
| Silver | | 2.3000 | U | 2.3000 | U | | | P | |
| Sodium | | 155110.0000 | | 155900.0000 | | 0.5 | | P | |
| Thallium | | 8.0000 | U | 8.0000 | U | | | F | |
| Vanadium | | 3.3000 | U | 3.3000 | U | | | P | |
| Zinc | 20.0 | 38.2000 | B | 34.5100 | | ~~10.1~~ | | P | IN |
| Cyanide | | | | | | | | NR | |

IN = Indeterminate

0017

U.S. EPA - CLP

5A

SPIKE SAMPLE RECOVERY

Ref. 5

EPA SAMPLE NO.

MCHG18S

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0109

Lab Code: SKINER Case No.: 18622 SAS No.: SDG No.: MCHG09

Matrix: SOIL Level (low/med): LOW

% Solids for Sample: 67.2

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 | | | | | | | | | |
| Antimony | 75-125 | 47.9847 | | 4.8032 | U | 141.72 | 33.9 | N | P |
| Arsenic | 75-125 | 17.8437 | | 8.7422 | | 11.56 | 78.7 | | F |
| Barium | 75-125 | 854.4501 | | 185.6966 | | 566.89 | 118.0 | | P |
| Beryllium | 75-125 | 15.4705 | | 1.3054 | B | 14.17 | 100.0 | | P |
| Cadmium | 75-125 | 13.4354 | | 0.4420 | U | 14.17 | 94.8 | | P |
| Calcium | | | | | | | | | NR |
| Chromium | 75-125 | 76.8736 | | 21.8087 | | 56.69 | 97.1 | | P |
| Cobalt | 75-125 | 139.7562 | | 8.8166 | B | 141.72 | 92.4 | | P |
| Copper | 75-125 | 114.4643 | | 43.7029 | | 70.86 | 99.9 | | P |
| Iron | | | | | | | | | NR |
| Lead | | 170.0329 | | 242.8100 | | 5.78 | -1259.1 | * | F |
| Magnesium | | | | | | | | | NR |
| Manganese | | 1238.0952 | | 991.6902 | | 141.72 | 173.9 | * | P |
| Mercury | 75-125 | 1.2741 | | 0.3351 | | 0.71 | 132.3 | N** | CV |
| Nickel | 75-125 | 152.2449 | | 20.0525 | | 141.72 | 93.3 | | P |
| Potassium | | | | | | | | | |
| Selenium | 75-125 | 2.6887 | | 1.9154 | | 2.89 | 26.8 | N | F |
| Silver | 75-125 | 14.1780 | | 1.5146 | B | 14.17 | 89.4 | | P |
| Sodium | | | | | | | | | NR |
| Thallium | 75-125 | 13.3942 | | 0.2816 | B | 14.45 | 90.7 | | F |
| Vanadium | 75-125 | 154.0051 | | 20.5180 | | 141.72 | 94.2 | | P |
| Zinc | 75-125 | 321.6553 | | 200.8693 | | 141.72 | 85.2 | | P |
| Cyanide | 75-125 | 35.7440 | | 5.9587 | | 34.45 | 86.5 | | CA |

Comments:

* SR > 4 X SA; no action

** No action since RPD of SR and [SSR-SA] = 50% acceptable for soil matrix; may be due to imprecision

027

# INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MCHG25

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0109

Lab Code: SKINER Case No.: 18622 SAS No.: SDG No.: MCHG15

Matrix (soil/water): WATER Lab Sample ID: 08233-04S

Level (low/med): LOW Date Received: 08/20/92

% 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 | 41.6 | B | N | P |
| 7440-36-0 | Antimony | 16.5 | U | | P |
| 7440-38-2 | Arsenic | 2.4 | U | W | F |
| 7440-39-3 | Barium | 93.9 | B | | P |
| 7440-41-7 | Beryllium | 0.40 | U | | P |
| 7440-43-9 | Cadmium | 1.4 | U | | P |
| 7440-70-2 | Calcium | 106000 | | | P |
| 7440-47-3 | Chromium | 3.7 | U | | P |
| 7440-48-4 | Cobalt | 3.0 | B | | P |
| 7440-50-8 | Copper | 6.1 | B | | P |
| 7439-89-6 | Iron | 19.8 | B | | P |
| 7439-92-1 | Lead | 3.8 | | * | F |
| 7439-95-4 | Magnesium | 29900 | | | P |
| 7439-96-5 | Manganese | 12.4 | B | | P |
| 7439-97-6 | Mercury | 0.20 | U | N | CV |
| 7440-02-0 | Nickel | 6.0 | U | | P |
| 7440-09-7 | Potassium | 2350 | B | | P |
| 7782-49-2 | Selenium | 3.1 | U | W | F |
| 7440-22-4 | Silver | 2.3 | U | | P |
| 7440-23-5 | Sodium | 155000 | | | P |
| 7440-28-0 | Thallium | 8.0 | U | EN | F |
| 7440-62-2 | Vanadium | 3.3 | U | | P |
| 7440-66-6 | Zinc | 38.2 | | | P |
| | Cyanide | | | | NR |

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

0005

EPA SAMPLE NO.

MCHG01

# INORGANIC ANALYSIS DATA SHEET

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0109

Lab Code: SKINER Case No.: 18622 SAS No.: SDG No.: MCHG01

Matrix (soil/water): WATER Lab Sample ID: 08231-01S

Level (low/med): LOW Date Received: 08/20/92

% 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 | 20300 | | | P |
| 7440-36-0 | Antimony | 16.5 | U | | P |
| 7440-38-2 | Arsenic | 7.3 | B | | F |
| 7440-39-3 | Barium | 305 | | | P |
| 7440-41-7 | Beryllium | 2.3 | B | | P |
| 7440-43-9 | Cadmium | 1.4 | U | | P |
| 7440-70-2 | Calcium | 115000 | | | P |
| 7440-47-3 | Chromium | 43.9 | | | P |
| 7440-48-4 | Cobalt | 29.8 | B | | P |
| 7440-50-8 | Copper | 54.7 | | | P |
| 7439-89-6 | Iron | 40600 | | N | P |
| 7439-92-1 | Lead | 53.5 | | N* | F |
| 7439-95-4 | Magnesium | 36200 | | | P |
| 7439-96-5 | Manganese | 1380 | | | P |
| 7439-97-6 | Mercury | 0.71 | | | CV |
| 7440-02-0 | Nickel | 39.5 | B | | P |
| 7440-09-7 | Potassium | 150000 | | | P |
| 7782-49-2 | Selenium | 6.9 | | S | F |
| 7440-22-4 | Silver | 2.3 | U | | P |
| 7440-23-5 | Sodium | 120000 | | | P |
| 7440-28-0 | Thallium | 8.0 | U | EN | F |
| 7440-62-2 | Vanadium | 43.1 | B | | P |
| 7440-66-6 | Zinc | 136 | | | P |
| | Cyanide | 68.6 | | | CA |

Color Before: BROWN Clarity Before: OPAQUE Texture:

Color After: BROWN Clarity After: OPAQUE Artifacts:

Comments:

002

Site Name: Phillips Landfill
Project No.: 3738-06

## IRDAS NOTES

1. Positive results for selenium for which the CRDL standard recovery exceeded 125 percent and the results were less than five times the difference between the true and observed values were qualified (K), biased high, or (L), biased low, if also affected by low matrix spike recovery. See the support documentation, ref. 1.

2. Results for aluminum, iron, and potassium that were less than five times the maximum field blank contamination (the action level), adjusted for matrix and dilutions, were qualified (B). See the support documentation, ref. 2.

3. Results for lead that were less than five times the maximum field blank contamination (the action level), adjusted for matrix and dilutions, were qualified (B), except for solid samples (see the narrative). See the support documentation, ref. 2.

4. Results for aluminum, antimony, cobalt, chromium, nickel, silver, sodium, vanadium, and zinc that were less than five times the maximum laboratory blank contamination (the action level), adjusted for matrix and dilutions, were qualified (B). See the support documentation, ref. 2.

5. Results for thallium that were less than five times the maximum laboratory blank contamination (the action level), adjusted for matrix and dilutions, were qualified (B). See the support documentation, ref. 2.

6. Positive results for several elements in aqueous and solid samples were qualified (J), estimated, because RPDs of field duplicates were greater than 40 percent or 60 percent, respectively. See the support documentation, ref. 3.

7. Due to low matrix spike recoveries, positive results for selenium in solid samples were qualified (L), biased low, and detection limits for antimony in solid samples were considered biased low. Positive results for arsenic and selenium for which the GFAA PDS recovery was less than 85 percent were qualified (J), estimated. See the support documentation, refs. 5 and 6.

8. Positive results for arsenic and selenium for which the MSA correlation coefficient was less than 0.995 were qualified (J), estimated, unless superceded by the (B) qualifier. See the support documentation, ref. 7.

9. Laboratory duplicate imprecision caused unfiltered aqueous sample results for copper to be qualified (J), estimated. See the support documentation, ref. 4.

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Ref. 1

2B

CRDL STANDARD FOR AA AND ICP

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0109

Lab Code: SKINER Case No.: 18622 SAS No.: SDG No.: MCHG09

AA CRDL Standard Source: SKINER

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 | 120.33 | 100.3 | 111.66 | 93.0 |
| Arsenic | 10.0 | 11.28 | 112.8 | | | | | |
| Barium | | | | | | | | |
| Beryllium | | | | 10.0 | 10.04 | 100.4 | 10.04 | 100.4 |
| Cadmium | | | | 10.0 | 10.79 | 107.9 | 10.27 | 102.7 |
| Calcium | | | | | | | | |
| Chromium | | | | 20.0 | 24.05 | 120.2 | 23.33 | 116.6 |
| Cobalt | | | | 100.0 | 93.45 | 93.4 | 95.75 | 95.8 |
| Copper | | | | 50.0 | 50.04 | 100.1 | 49.18 | 98.4 |
| Iron | | | | | | | | |
| Lead | 3.0 | 7.44 | 248.0 * | | | | | |
| Magnesium | | | | | | | | |
| Manganese | | | | 30.0 | 29.38 | 97.9 | 29.87 | 99.6 |
| Mercury | | | | | | | | |
| Nickel | | | | 80.0 | 79.24 | 99.0 | 76.36 | 95.4 |
| Potassium | | | | | | | | |
| Selenium | 5.0 | 7.75 | 155.0 | | | | | |
| Silver | | | | 20.0 | 20.28 | 101.4 | 18.89 | 94.4 |
| Sodium | | | | | | | | |
| Thallium | 10.0 | 8.66 | 86.6 | | | | | |
| Vanadium | | | | 100.0 | 99.92 | 99.9 | 99.91 | 99.9 |
| Zinc | | | | 40.0 | 47.69 | 119.2 | 45.16 | 112.9 |

* All results B, ND, or above 5 x IDL - Found!; no qualifiers

017

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3
BLANKS

Ref.2

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0109

Lab Code: SKINER Case No.: L8622 SAS No.: SDG No.: MCHG15

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 | 17.3 | U | 37.0 | B | 17.3 | U | 17.3 | U | 17.300 | U | P |
| Antimony | 16.5 | U | 16.5 | U | 16.5 | U | 16.5 | U | 16.500 | U | P |
| Arsenic | 2.4 | U | 2.4 | U | 2.4 | U | 2.4 | U | 2.400 | U | F |
| Barium | 1.0 | U | 1.0 | U | 1.0 | U | 1.0 | U | 1.000 | U | P |
| Beryllium | 0.4 | U | 0.4 | U | 0.4 | U | 0.4 | U | 0.400 | U | P |
| Cadmium | 1.4 | U | 1.4 | U | 1.4 | U | 1.4 | U | 1.400 | U | P |
| Calcium | 14.3 | U | 27.6 | B | 25.7 | B | 22.2 | B | 23.520 | B | P |
| Chromium | 3.7 | U | 3.7 | U | 3.7 | U | 3.7 | U | 3.700 | U | P |
| Cobalt | 2.6 | B | 2.3 | U | 2.3 | U | 2.3 | B | 2.300 | U | P |
| Copper | 2.4 | U | 2.4 | U | 2.4 | U | 2.4 | U | 2.400 | U | P |
| Iron | 16.3 | U | 16.3 | U | 16.3 | U | 16.3 | U | 16.300 | U | P |
| Lead | 2.2 | U | 2.2 | U | 2.2 | U | 2.2 | U | 2.200 | U | F |
| Magnesium | 26.4 | B | 31.4 | B | 20.7 | B | 20.7 | B | 23.540 | B | P |
| Manganese | 1.3 | U | 1.3 | U | 1.3 | U | 1.3 | U | 1.300 | U | P |
| Mercury | 0.2 | U | 0.2 | U | 0.2 | U | 0.2 | U | 0.200 | U | CV |
| Nickel | 6.0 | U | 6.0 | U | 6.0 | U | 6.0 | U | 6.000 | U | P |
| Potassium | 77.1 | U | 77.1 | U | 77.1 | U | 77.1 | U | 77.100 | U | P |
| Selenium | 3.1 | U | 3.1 | U | 3.1 | U | 3.1 | U | -3.490 | B | F |
| Silver | 3.2 | B | 2.3 | U | 2.3 | U | 2.3 | U | 2.300 | U | P |
| Sodium | 29.7 | U | 29.7 | U | 29.7 | U | 29.7 | U | 29.700 | U | P |
| Thallium | 1.6 | U | 1.6 | U | 1.6 | U | 1.6 | U | 1.600 | U | F |
| Vanadium | 3.3 | U | 3.3 | U | 3.3 | U | 3.3 | U | 3.300 | U | P |
| Zinc | 10.1 | U | 10.1 | U | 10.1 | U | 10.1 | U | 10.100 | U | P |
| Cyanide | | | | | | | | | | | NR |

0011

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3
BLANKS

Ref. 2

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0109

Lab Code: SKINER Case No.: 18622 SAS No.: SDG No.: MCH615

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 | | | 17.3 | U | 24.7 | B | | | | | P |
| Antimony | | | 19.3 | B | 16.5 | U | | | | | P |
| Arsenic | | | 2.4 | U | 2.4 | U | 2.4 | U | | | F |
| Barium | | | 1.1 | B | 1.1 | B | | | | | P |
| Beryllium | | | 0.4 | U | 0.4 | U | | | | | P |
| Cadmium | | | 1.4 | B | 1.4 | U | | | | | P |
| Calcium | | | 14.3 | U | 29.3 | B | | | | | P |
| Chromium | | | 3.7 | U | 3.7 | U | | | | | P |
| Cobalt | | | 3.0 | B | 2.3 | B | | | | | P |
| Copper | | | 2.4 | U | 2.4 | U | | | | | P |
| Iron | | | 16.3 | U | 16.3 | U | | | | | P |
| Lead | | | 2.2 | U | | | | | | | F |
| Magnesium | | | 32.1 | B | 46.4 | B | | | | | P |
| Manganese | | | 1.3 | U | 1.3 | U | | | | | P |
| Mercury | | | 0.2 | U | 0.2 | U | 0.2 | U | | | CV |
| Nickel | | | 6.0 | U | 6.0 | U | | | | | P |
| Potassium | | | 77.1 | U | 77.1 | U | | | | | P |
| Selenium | | | 3.1 | U | 3.1 | U | 3.1 | U | | | F |
| Silver | | | 2.3 | U | 3.7 | B | | | | | P |
| Sodium | | | 29.7 | U | -35.8 | B | | | | | P |
| Thallium | | | 1.6 | U | | | | | | | F |
| Vanadium | | | 3.3 | U | 3.3 | U | | | | | P |
| Zinc | | | 10.1 | U | 10.1 | U | | | | | P |
| Cyanide | | | | | | | | | | | NR |

0012

U.S. EPA - CLP

3
BLANKS

Ref.2

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0109

Lab Code: SKINER Case No.: 18622 SAS No.: SDG No.: MCHG15

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 | | | | | | | | | | | NR |
| Barium | | | | | | | | | | | NR |
| Beryllium | | | | | | | | | | | NR |
| Cadmium | | | | | | | | | | | NR |
| Calcium | | | | | | | | | | | NR |
| Chromium | | | | | | | | | | | NR |
| Cobalt | | | | | | | | | | | NR |
| Copper | | | | | | | | | | | NR |
| Iron | | | | | | | | | | | NR |
| Lead | | | | | | | | | | | NR |
| Magnesium | | | | | | | | | | | NR |
| Manganese | | | | | | | | | | | NR |
| Mercury | | | 0.2 | U | 0.2 | U | | | | | CV |
| Nickel | | | | | | | | | | | NR |
| Potassium | | | | | | | | | | | NR |
| Selenium | | | | | | | | | | | NR |
| Silver | | | | | | | | | | | NR |
| Sodium | | | | | | | | | | | NR |
| Thallium | | | | | | | | | | | NR |
| Vanadium | | | | | | | | | | | NR |
| Zinc | | | | | | | | | | | NR |
| Cyanide | | | | | | | | | | | NR |

0013

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3
BLANKS

Ref. 2

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0109

Lab Code: SKINER Case No.: 18622 SAS No.: SDG No.: MCHG09

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 | 23.9 | U | 23.9 | U | 25.0 | B | 23.9 | U | 4.780 | U | P |
| Antimony | 16.3 | U | 16.3 | U | 16.3 | U | 16.3 | U | 3.260 | U | P |
| Arsenic | 2.4 | U | 2.4 | U | 2.4 | U | 2.4 | U | 0.480 | U | F |
| Barium | 4.6 | U | 4.6 | U | 4.6 | U | 4.6 | U | 0.920 | U | P |
| Beryllium | 0.7 | U | 0.7 | U | 0.7 | U | 0.7 | U | 0.140 | U | P |
| Cadmium | 1.5 | U | 2.0 | B | 1.5 | U | 1.6 | B | 0.300 | U | P |
| Calcium | 15.5 | U | 33.4 | B | 25.1 | B | 30.5 | B | 16.154 | B | P |
| Chromium | 4.9 | U | 6.4 | B | 7.1 | B | 4.9 | U | 0.996 | B | P |
| Cobalt | 3.5 | U | 3.5 | U | 3.5 | U | 3.5 | U | 0.700 | U | P |
| Copper | 3.8 | U | 3.8 | U | 3.8 | U | 3.8 | U | 0.760 | U | P |
| Iron | 7.6 | U | 19.6 | B | 20.4 | B | 25.4 | B | 3.366 | B | P |
| Lead | 1.0 | U | 2.6 | B | 1.4 | B | 1.5 | B | 0.200 | U | F |
| Magnesium | 40.1 | U | 88.7 | B | 79.8 | B | 62.1 | B | 8.020 | U | P |
| Manganese | 4.4 | U | 4.4 | U | 4.4 | U | 4.4 | U | 0.880 | U | P |
| Mercury | 0.1 | U | 0.1 | U | 0.1 | U | 0.1 | U | 0.050 | U | CV |
| Nickel | 3.9 | U | 3.9 | U | 3.9 | U | 3.9 | U | 0.958 | B | P |
| Potassium | 265.5 | U | 265.5 | U | 265.5 | U | 265.5 | U | 53.100 | U | P |
| Selenium | 3.6 | U | 3.6 | U | 3.6 | U | 3.6 | U | 0.720 | U | F |
| Silver | 4.8 | U | 4.8 | U | 4.8 | U | 4.8 | U | 0.960 | U | P |
| Sodium | 32.8 | B | 78.7 | B | 111.4 | B | 97.0 | B | 18.484 | B | P |
| Thallium | 0.9 | U | 1.3 | B | 0.9 | U | 5.6 | B | 0.180 | U | F |
| Vanadium | 2.4 | U | 3.0 | B | 2.4 | U | 2.9 | B | 0.480 | U | P |
| Zinc | 3.4 | B | 2.9 | U | 2.9 | U | 2.9 | U | 0.146 | B | P |
| Cyanide | 10.0 | U | 10.0 | U | 10.0 | U | 10.0 | U | 0.500 | U | CA |

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1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MCHG04

Lab Name: PRECISION_ANALYTICAL_LABS Contract: _____

Lab Code: PRE___ Case No.: _____ SAS No.: 7453-C SDG No.: MCHG03

Matrix (soil/water): SOIL_ Lab Sample ID: MCHG04___

Level (low/med): MED__ Date Received: 08/19/92

% Solids: _94.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 7930 | | | P |
| 7440-36-0 | Antimony | 6.4 | U | | P |
| 7440-38-2 | Arsenic | 2.8 | B | S | F |
| 7440-39-3 | Barium | 17.7 | B | | P |
| 7440-41-7 | Beryllium | 0.64 | U | | P |
| 7440-43-9 | Cadmium | 0.85 | U | | P |
| 7440-70-2 | Calcium | 1790 | | | P |
| 7440-47-3 | Chromium | 49.0 | | | P |
| 7440-48-4 | Cobalt | 8.5 | U | | P |
| 7440-50-8 | Copper | 7.3 | | | P |
| 7439-89-6 | Iron | 18200 | | | P |
| 7439-92-1 | Lead | 18.6 | | S | F |
| 7439-95-4 | Magnesium | 340 | B | | P |
| 7439-96-5 | Manganese | 155 | | | P |
| 7439-97-6 | Mercury | 0.06 | | | AV |
| 7440-02-0 | Nickel | 21.2 | | | P |
| 7440-09-7 | Potassium | 472 | B | | P |
| 7782-49-2 | Selenium | 0.21 | U | | F |
| 7440-22-4 | Silver | 0.85 | U | | P |
| 7440-23-5 | Sodium | 140 | B | | P |
| 7440-28-0 | Thallium | 0.43 | U | | F |
| 7440-62-2 | Vanadium | 13.3 | | | P |
| 7440-66-6 | Zinc | 5.3 | | | P |
| | Cyanide | 0.05 | U | | C |

Color Before: BROWN___ Clarity Before: OPAQUE Texture: MEDIUM

Color After: CLEAR___ Clarity After: CLEAR_ Artifacts: _____

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MCHG12

Lab Name: PRECISION_ANALYTICAL_LABS Contract: _____

Lab Code: PRE___ Case No.: _____ SAS No.: 7453-C SDG No.: MCHG03

Matrix (soil/water): SOIL_ Lab Sample ID: MCHG12____

Level (low/med): MED__ Date Received: 08/19/92

% Solids: _94.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 15000 | | E | P |
| 7440-36-0 | Antimony | 6.4 | U | N | P |
| 7440-38-2 | Arsenic | 7.3 | | | F |
| 7440-39-3 | Barium | 170 | | | P |
| 7440-41-7 | Beryllium | 1.3 | | | P |
| 7440-43-9 | Cadmium | 0.85 | U | | P |
| 7440-70-2 | Calcium | 50600 | | E | P |
| 7440-47-3 | Chromium | 71.4 | | EN | P |
| 7440-48-4 | Cobalt | 9.0 | B | | P |
| 7440-50-8 | Copper | 29.6 | | * | P |
| 7439-89-6 | Iron | 29600 | | E | P |
| 7439-92-1 | Lead | 159 | | * | F |
| 7439-95-4 | Magnesium | 9220 | | E* | P |
| 7439-96-5 | Manganese | 1410 | | E | P |
| 7439-97-6 | Mercury | 0.28 | | | AV |
| 7440-02-0 | Nickel | 33.7 | | | P |
| 7440-09-7 | Potassium | 1860 | | | P |
| 7782-49-2 | Selenium | 0.41 | B | N | F |
| 7440-22-4 | Silver | 0.85 | U | N | P |
| 7440-23-5 | Sodium | 344 | B | | P |
| 7440-28-0 | Thallium | 0.43 | U | WN | F |
| 7440-62-2 | Vanadium | 25.9 | | | P |
| 7440-66-6 | Zinc | 96.2 | | | P |
| | Cyanide | 2.4 | | N* | C |

Color Before: BROWN____ Clarity Before: OPAQUE Texture: MEDIUM

Color After: YELLOW___ Clarity After: CLEAR_ Artifacts: _____

Comments:

FORM I - IN

ILM02.1

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MCHG12

Ref. 5

Lab Name: PRECISION_ANALYTICAL_LABS Contract: _____

Lab Code: PRE___ Case No.: _____ SAS No.: 7453-C SDG No.: MCHG03

Matrix (soil/water): SOIL_ Lab Sample ID: MCHG12___

Level (low/med): MED__ Date Received: 08/19/92

% Solids: _94.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 15000 | | E | P |
| 7440-36-0 | Antimony | 6.4 | U | N | P |
| 7440-38-2 | Arsenic | 7.3 | | | F |
| 7440-39-3 | Barium | 170 | | | P |
| 7440-41-7 | Beryllium | 1.3 | | | P |
| 7440-43-9 | Cadmium | 0.85 | U | | P |
| 7440-70-2 | Calcium | 50600 | | E | P |
| 7440-47-3 | Chromium | 71.4 | | EN | P |
| 7440-48-4 | Cobalt | 9.0 | B | | P |
| 7440-50-8 | Copper | 29.6 | | * | P |
| 7439-89-6 | Iron | 29600 | | E | P |
| 7439-92-1 | Lead | 159 | | | F |
| 7439-95-4 | Magnesium | 9220 | | E* | P |
| 7439-96-5 | Manganese | 1410 | | E | P |
| 7439-97-6 | Mercury | 0.28 | | | AV |
| 7440-02-0 | Nickel | 33.7 | | | P |
| 7440-09-7 | Potassium | 1860 | | | P |
| 7782-49-2 | Selenium | 0.41 | B | N | F |
| 7440-22-4 | Silver | 0.85 | U | N | P |
| 7440-23-5 | Sodium | 344 | B | | P |
| 7440-28-0 | Thallium | 0.43 | U | WN | F |
| 7440-62-2 | Vanadium | 25.9 | | | P |
| 7440-66-6 | Zinc | 96.2 | | | P |
| | Cyanide | 2.4 | | N* | C |

Color Before: BROWN___ Clarity Before: OPAQUE Texture: MEDIUM

Color After: YELLOW___ Clarity After: CLEAR_ Artifacts: _____

Comments:

Pb: 745.1 ug/L x .2 L / 1 g ÷ 0.94 = 158.5 ug/g ≈ 159 ug/g

ug/g = mg/kg

FORM I - IN

ILM02.1

U.S. EPA - CLP

14

ANALYSIS RUN LOG

Ref.5

000042

Lab Name: PRECISION_ANALYTICAL_LABS  Contract: _____

Lab Code: PRE___  Case No.: _____  SAS No.: 7453-C  SDG No.:MCHG03

Instrument ID Number: AA1_____  Method: F_

Start Date: 00/00/00  End Date: 10/16/92

| EPA Sample No. | D/F | Time | % R | Analytes | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | ALB | SBS | ASA | BEB | CDA | CAR | CRO | CUM | FE | PB | MG | MN | HG | NI | KE | SEL | AGL | ANL | TL | VN | ZN | CN |
| MCHG12A | 1.00 | 0000 | -3276.7 | | | | | | | | | | | | | | | | | | | | | | |
| ICV | 1.00 | 1620 | | | | | | | | | | | | | | | | | | | | | | | |
| ICB | 1.00 | 1625 | | | | | | | | | | | | | | | | | | | | | | | |
| CRA | 1.00 | 1630 | | | | | | | | | | | | | | | | | | | | | | | |
| LCS | 200.00 | 1636 | | | | | | | | | | | | | | | | | | | | | | | |
| LCSA | 200.00 | 1641 | 104.9 | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 1647 | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZA | 1.00 | 1652 | 110.7 | | | | | | | | | | | | | | | | | | | | | | |
| MCHG12 | 10.00 | 1658 | | | | | | | | | | | | | | | | | | | | | | | |
| MCHG12A | 10.00 | 1703 | -9999.9 | | | | | | | | | | | | | | | | | | | | | | |
| MCHG12 | 10.00 | 1708 | | | | | | | | | | | | | | | | | | | | | | | |
| MCHG12 | 10.00 | 1714 | | | | | | | | | | | | | | | | | | | | | | | |
| CCB | 1.00 | 1724 | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 1730 | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZA | 1.00 | 1735 | 86.3 | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 1740 | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZA | 1.00 | 1745 | -9999.9 | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 1750 | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZA | 1.00 | 1756 | 111.2 | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 1801 | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZA | 1.00 | 1806 | 0.0 | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 1811 | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 1816 | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 1822 | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 1827 | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 1833 | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZA | 1.00 | 1838 | 0.0 | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 1843 | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZA | 1.00 | 1849 | 0.0 | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 1854 | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZA | 1.00 | 1900 | 0.0 | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | 1.00 | 1905 | | | | | | | | | | | | | | | | | | | | | | | |

Ref. 1

U.S. EPA - CLP

3
BLANKS

Lab Name: PRECISION_ANALYTICAL_LABS Contract: _____

Lab Code: PRE___ Case No.: _____ SAS No.: 7453-C SDG No.: MCHG03

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 | 100.0 | U | 100.0 | U | 100.0 | U | 100.0 | U | 0.100 | U | P |
| Antimony | 30.0 | U | 30.0 | U | 30.0 | U | 30.0 | U | 0.030 | U | P |
| Arsenic | 2.0 | U | 2.0 | U | 2.0 | U | 2.0 | U | 0.400 | U | F |
| Barium | 40.0 | U | 40.0 | U | 40.0 | U | 40.0 | U | 0.040 | U | P |
| Beryllium | 3.0 | U | 3.0 | U | 3.0 | U | 3.3 | B | 0.003 | U | P |
| Cadmium | 4.0 | U | 4.0 | U | 4.0 | U | 6.2 | | 0.004 | U | P |
| Calcium | 200.0 | U | 322.7 | B | 322.7 | B | 200.0 | U | 0.200 | U | P |
| Chromium | 6.0 | U | 6.0 | U | 6.0 | U | 6.0 | U | 0.006 | U | P |
| Cobalt | 40.0 | U | 40.0 | U | 40.0 | U | 40.0 | U | 0.040 | U | P |
| Copper | 8.0 | U | 8.0 | U | 8.0 | U | 8.0 | U | 0.008 | U | P |
| Iron | -67.5 | B | -71.9 | B | -71.9 | B | -95.3 | B | -0.085 | B | P |
| Lead | 30.0 | U | 30.0 | U | 30.0 | U | 30.0 | U | 0.030 | U | P |
| Magnesium | 200.0 | U | 200.0 | U | 200.0 | U | 200.0 | U | 0.200 | U | P |
| Manganese | 9.0 | U | 9.0 | U | 9.0 | U | 9.0 | U | 0.009 | U | P |
| Mercury | 0.2 | U | 0.2 | U | 0.2 | U | | | 0.000 | U | AV |
| Nickel | 31.0 | B | 257.8 | | 257.8 | | 30.0 | U | 0.030 | U | P |
| Potassium | 400.0 | U | 400.0 | U | 400.0 | U | 400.0 | U | 0.400 | U | P |
| Selenium | 1.3 | B | 1.4 | B | 1.4 | B | 1.0 | U | 0.280 | B | F |
| Silver | 4.0 | U | 47.1 | | 47.1 | | 48.0 | | 0.004 | U | P |
| Sodium | 400.0 | U | 400.0 | U | 400.0 | U | 400.0 | U | 0.400 | U | P |
| Thallium | 2.0 | U | 2.0 | U | 2.0 | U | 2.0 | U | 0.002 | U | F |
| Vanadium | 10.0 | U | 10.0 | U | 10.0 | U | 10.0 | U | 0.010 | U | P |
| Zinc | -28.8 | | 20.0 | U | 20.0 | U | -28.7 | | -0.032 | | P |
| Cyanide | | | | | | | | | 0.050 | U | C |

*Abs. value of negative blank < CRDL; no action

U.S. EPA - CLP

Ref 1 000016

3

BLANKS

Lab Name: PRECISION_ANALYTICAL_LABS Contract: _____

Lab Code: PRE__ Case No.: _____ SAS No.: 7453-C SDG No.: MCHG03

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 | 100.0 | U | 100.0 | U | 100.0 | U | 100.0 | U | | | P |
| Antimony | 30.0 | U | 30.0 | U | 30.0 | U | 30.0 | U | | | P |
| Arsenic | | | 2.0 | U | | | | | | | F |
| Barium | 40.0 | U | 40.0 | U | 40.0 | U | 40.0 | U | | | P |
| Beryllium | 3.0 | U | 3.0 | U | 3.0 | U | 3.3 | B | | | P |
| Cadmium | 4.0 | U | 4.0 | U | 4.0 | U | 6.2 | | | | P |
| Calcium | 200.0 | U | 322.7 | B | 322.7 | B | 200.0 | U | | | P |
| Chromium | 6.0 | U | 6.0 | U | 6.0 | U | 6.0 | U | | | P |
| Cobalt | 40.0 | U | 40.0 | U | 40.0 | U | 40.0 | U | | | P |
| Copper | 8.0 | U | 8.0 | U | 8.0 | U | 8.0 | U | | | P |
| Iron | -67.5 | B | -71.9 * | B | -71.9 * | B | -95.3 * | B | | | P |
| Lead | 30.0 | U | 30.0 | U | 30.0 | U | 30.0 | U | | | P |
| Magnesium | 200.0 | U | 200.0 | U | 200.0 | U | 200.0 | U | | | P |
| Manganese | 9.0 | U | 9.0 | U | 9.0 | U | 9.0 | U | | | P |
| Mercury | 0.2 | U | 0.2 | U | 0.2 | U | | | | | AV |
| Nickel | 31.0 | B | 257.8 | | 257.8 | | 30.0 | U | | | P |
| Potassium | 400.0 | U | 400.0 | U | 400.0 | U | 400.0 | U | | | P |
| Selenium | 1.3 | B | 1.0 | U | 1.4 | B | 1.0 | U | | | F |
| Silver | 4.0 | U | 47.1 | | 47.1 | | 48.0 | | | | P |
| Sodium | 400.0 | U | 400.0 | U | 400.0 | U | 400.0 | U | | | P |
| Thallium | 2.0 | U | 2.0 | U | 2.0 | U | 2.0 | U | | | F |
| Vanadium | 10.0 | U | 10.0 | U | 10.0 | U | 10.0 | U | | | P |
| Zinc | -28.8 | | 20.0 | U | 20.0 | U | -28.7 | | | | P |
| Cyanide | | | | | | | | | | | NR |

* Abs. value of neg. blank <CRDL; no action

U.S. EPA - CLP

3
BLANKS

Ref.) 000017

Lab Name: PRECISION_ANALYTICAL_LABS Contract: _____

Lab Code: PRE___ Case No.: _____ SAS No.: 7453-C SDG No.: MCHG03

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 | 100.0 | U | 100.0 | U | 100.0 | U | 100.0 | U | | | P |
| Antimony | 30.0 | U | 30.0 | U | 30.0 | U | 30.0 | U | | | P |
| Arsenic | 2.0 | U | 2.0 | U | 2.0 | U | 2.0 | U | | | F |
| Barium | 40.0 | U | 40.0 | U | 40.0 | U | 40.0 | U | | | P |
| Beryllium | 3.0 | U | 3.0 | U | 3.0 | U | 3.3 | B | | | P |
| Cadmium | 4.0 | U | 4.0 | U | 4.0 | U | 6.2 | | | | P |
| Calcium | 200.0 | U | 322.7 | B | 322.7 | B | 200.0 | U | | | P |
| Chromium | 6.0 | U | 6.0 | U | 6.0 | U | 6.0 | U | | | P |
| Cobalt | 40.0 | U | 40.0 | U | 40.0 | U | 40.0 | U | | | P |
| Copper | 8.0 | U | 8.0 | U | 8.0 | U | 8.0 | U | | | P |
| Iron | -67.5 | B * | -71.9 | B * | -71.9 | B * | -95.3 | B * | | | P |
| Lead | 30.0 | U | 30.0 | U | 30.0 | U | 30.0 | U | | | P |
| Magnesium | 200.0 | U | 200.0 | U | 200.0 | U | 200.0 | U | | | P |
| Manganese | 9.0 | U | 9.0 | U | 9.0 | U | 9.0 | U | | | P |
| Mercury | 0.2 | U | 0.2 | U | 0.2 | U | | | | | AV |
| Nickel | 31.0 | B | 257.8 | | 257.8 | | 30.0 | U | | | P |
| Potassium | 400.0 | U | 400.0 | U | 400.0 | U | 400.0 | U | | | P |
| Selenium | 1.3 | B | 1.8 | B | 1.4 | B | 1.0 | U | | | F |
| Silver | 4.0 | U | 47.1 | | 47.1 | | 48.0 | | | | P |
| Sodium | 400.0 | U | 400.0 | U | 400.0 | U | 400.0 | U | | | P |
| Thallium | 2.0 | U | 2.0 | U | 2.0 | U | 2.0 | U | | | F |
| Vanadium | 10.0 | U | 10.0 | U | 10.0 | U | 10.0 | U | | | P |
| Zinc | -28.8 | | 20.0 | U | 20.0 | U | -28.7 | | | | P |
| Cyanide | | | | | | | | | | | NR |

* Abs. value of negative blank < CRDL; no action

U.S. EPA - CLP

Ref. 1

3
BLANKS

Lab Name: PRECISION_ANALYTICAL_LABS Contract: _____

Lab Code: PRE___ Case No.: _____ SAS No.: 7453-C SDG No.: MCHG03

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 | | | 100.0 | U | 100.0 | U | | | | | P |
| Antimony | | | 30.0 | U | 30.0 | U | | | | | P |
| Arsenic | | | 2.0 | U | | | | | | | F |
| Barium | | | 40.0 | U | 40.0 | U | | | | | P |
| Beryllium | | | 3.0 | U | 3.3 | B | | | | | P |
| Cadmium | | | 4.0 | U | 6.2 | | | | | | P |
| Calcium | | | 322.7 | B | 200.0 | U | | | | | P |
| Chromium | | | 6.0 | U | 6.0 | U | | | | | P |
| Cobalt | | | 40.0 | U | 40.0 | U | | | | | P |
| Copper | | | 8.0 | U | 8.0 | U | | | | | P |
| Iron | | | -71.9 | B | -95.3 | B | | | | | P |
| Lead | | | 30.0 | U | 30.0 | U | | | | | P |
| Magnesium | | | 200.0 | U | 200.0 | U | | | | | P |
| Manganese | | | 9.0 | U | 9.0 | U | | | | | P |
| Mercury | | | 0.2 | U | | | | | | | AV |
| Nickel | | | 257.8 | | 30.0 | U | | | | | P |
| Potassium | | | 400.0 | U | 400.0 | U | | | | | P |
| Selenium | | | 1.4 | B | 1.0 | U | | | | | F |
| Silver | | | 47.1 | | 48.0 | | | | | | P |
| Sodium | | | 400.0 | U | 400.0 | U | | | | | P |
| Thallium | | | 2.0 | U | 2.0 | U | | | | | F |
| Vanadium | | | 10.0 | U | 10.0 | U | | | | | P |
| Zinc | | | 20.0 | U | -28.7 | | | | | | P |
| Cyanide | | | | | | | | | | | NR |

* Abs. value of negative blank <CRDL; no action

U.S. EPA - CLP

3
BLANKS

000019

Ref. 1

Lab Name: PRECISION_ANALYTICAL_LABS Contract: _____

Lab Code: PRE___ Case No.: _____ SAS No.: 7453-C SDG No.: MCHG03

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 | 2.0 | U | 2.0 | U | 2.0 | U | 2.0 | U | | | F |
| Barium | | | | | | | | | | | NR |
| Beryllium | | | | | | | | | | | NR |
| Cadmium | | | | | | | | | | | NR |
| Calcium | | | | | | | | | | | NR |
| Chromium | | | | | | | | | | | NR |
| Cobalt | | | | | | | | | | | NR |
| Copper | | | | | | | | | | | NR |
| Iron | | | | | | | | | | | NR |
| Lead | 2.0 | B | 1.6 | B | 1.0 | U | | | | | F |
| Magnesium | | | | | | | | | | | NR |
| Manganese | | | | | | | | | | | NR |
| Mercury | | | | | | | | | | | NR |
| Nickel | | | | | | | | | | | NR |
| Potassium | | | | | | | | | | | NR |
| Selenium | | | | | | | | | | | NR |
| Silver | | | | | | | | | | | NR |
| Sodium | | | | | | | | | | | NR |
| Thallium | | | | | | | | | | | NR |
| Vanadium | | | | | | | | | | | NR |
| Zinc | | | | | | | | | | | NR |
| Cyanide | | | | | | | | | | | NR |

U.S. EPA - CLP

3
BLANKS

Ref. 1

000020

Lab Name: PRECISION_ANALYTICAL_LABS Contract: _____

Lab Code: PRE___ Case No.: _____ SAS No.: 7453-C SDG No.: MCHG03

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 | | | 2.0 | U | | | | | | | F |
| Barium | | | | | | | | | | | NR |
| Beryllium | | | | | | | | | | | NR |
| Cadmium | | | | | | | | | | | NR |
| Calcium | | | | | | | | | | | NR |
| Chromium | | | | | | | | | | | NR |
| Cobalt | | | | | | | | | | | NR |
| Copper | | | | | | | | | | | NR |
| Iron | | | | | | | | | | | NR |
| Lead | 2.4 | B | 2.3 | B | 1.0 | U | | | | | F |
| Magnesium | | | | | | | | | | | NR |
| Manganese | | | | | | | | | | | NR |
| Mercury | | | | | | | | | | | NR |
| Nickel | | | | | | | | | | | NR |
| Potassium | | | | | | | | | | | NR |
| Selenium | | | | | | | | | | | NR |
| Silver | | | | | | | | | | | NR |
| Sodium | | | | | | | | | | | NR |
| Thallium | | | | | | | | | | | NR |
| Vanadium | | | | | | | | | | | NR |
| Zinc | | | | | | | | | | | NR |
| Cyanide | | | | | | | | | | | NR |

U.S. EPA - CLP

3
BLANKS

Ref. 1

000021

Lab Name: PRECISION_ANALYTICAL_LABS Contract: _____

Lab Code: PRE___ Case No.: _____ SAS No.: 7453-C SDG No.: MCHG03

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 | | | 2.0 | U | 2.0 | U | 2.0 | U | | | F |
| Barium | | | | | | | | | | | NR |
| Beryllium | | | | | | | | | | | NR |
| Cadmium | | | | | | | | | | | NR |
| Calcium | | | | | | | | | | | NR |
| Chromium | | | | | | | | | | | NR |
| Cobalt | | | | | | | | | | | NR |
| Copper | | | | | | | | | | | NR |
| Iron | | | | | | | | | | | NR |
| Lead | 1.4 | B | 1.0 | U | 1.0 | U | | | | | F |
| Magnesium | | | | | | | | | | | NR |
| Manganese | | | | | | | | | | | NR |
| Mercury | | | | | | | | | | | NR |
| Nickel | | | | | | | | | | | NR |
| Potassium | | | | | | | | | | | NR |
| Selenium | | | | | | | | | | | NR |
| Silver | | | | | | | | | | | NR |
| Sodium | | | | | | | | | | | NR |
| Thallium | | | | | | | | | | | NR |
| Vanadium | | | | | | | | | | | NR |
| Zinc | | | | | | | | | | | NR |
| Cyanide | | | | | | | | | | | NR |

U.S. EPA - CLP

3

BLANKS

Ref. 1

Lab Name: PRECISION_ANALYTICAL_LABS Contract: _____

Lab Code: PRE___ Case No.: _____ SAS No.: 7453-C SDG No.: MCHG03

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 | | | | | | | | | | | NR |
| Barium | | | | | | | | | | | NR |
| Beryllium | | | | | | | | | | | NR |
| Cadmium | | | | | | | | | | | NR |
| Calcium | | | | | | | | | | | NR |
| Chromium | | | | | | | | | | | NR |
| Cobalt | | | | | | | | | | | NR |
| Copper | | | | | | | | | | | NR |
| Iron | | | | | | | | | | | NR |
| Lead | | | 1.0 | U | | | | | | | F |
| Magnesium | | | | | | | | | | | NR |
| Manganese | | | | | | | | | | | NR |
| Mercury | | | | | | | | | | | NR |
| Nickel | | | | | | | | | | | NR |
| Potassium | | | | | | | | | | | NR |
| Selenium | | | | | | | | | | | NR |
| Silver | | | | | | | | | | | NR |
| Sodium | | | | | | | | | | | NR |
| Thallium | | | | | | | | | | | NR |
| Vanadium | | | | | | | | | | | NR |
| Zinc | | | | | | | | | | | NR |
| Cyanide | | | | | | | | | | | NR |

U.S. EPA - CLP

000025

Ref. 2

5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

MCHG12S

Lab Name: PRECISION_ANALYTICAL_LABS Contract: _____

Lab Code: PRE___ Case No.: _____ SAS No.: 7453-C SDG No.: MCHG03

Matrix (soil/water): SOIL__ Level (low/med): MED___

% Solids for Sample: _94.0

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 | 25.8787 | | 6.3830 | U | 106.38 | 24.3 | N | P |
| Arsenic | 75-125 | 14.7787 | | 7.2511 | | 8.51 | 88.5 | | F |
| Barium | 75-125 | 554.3766 | | 169.7872 | | 425.53 | 90.4 | | P |
| Beryllium | 75-125 | 10.6426 | | 1.2702 | | 10.64 | 88.1 | | P |
| Cadmium | 75-125 | 13.2468 | | 0.8511 | U | 10.64 | 124.5 | | P |
| Calcium | | | | | | | | | NR |
| Chromium | 75-125 | 124.9979 | | 71.3745 | | 42.55 | 126.0 | N | P * |
| Cobalt | 75-125 | 101.1872 | | 9.0064 | B | 106.38 | 86.7 | | P |
| Copper | 75-125 | 75.4149 | | 29.6149 | | 53.19 | 86.1 | | P |
| Iron | | | | | | | | | NR |
| Lead | 75-125 | 199.5745 | | 158.5319 | | 42.55 | 96.5 | | F |
| Magnesium | | | | | | | | | NR |
| Manganese | | 1798.8660 | | 1406.0745 | | 106.38 | 369.2 | * | P |
| Mercury | | | | | | | | | NR |
| Nickel | 75-125 | 125.0191 | | 33.6574 | | 106.38 | 85.9 | | P |
| Potassium | | | | | | | | | NR |
| Selenium | 75-125 | 2.0404 | | 0.4064 | B | 8.51 | 19.2 | N | F |
| Silver | 75-125 | 4.1064 | | 0.8511 | U | 10.64 | 38.6 | N | P |
| Sodium | | | | | | | | | NR |
| Thallium | 75-125 | 4.6596 | | 0.4255 | U | 10.64 | 43.8 | N | F |
| Vanadium | 75-125 | 122.3681 | | 25.9128 | | 106.38 | 90.7 | | P |
| Zinc | 75-125 | 188.6362 | | 96.2000 | | 106.38 | 86.9 | | P |
| Cyanide | 75-125 | 3.7234 | | 2.3936 | | 5.32 | 25.0 | N | C |

Comments:

* SR > 4 x SA; no action
** RPD of |SSR-SA| and SR acceptable for matrix (14%); no action (could be due to acceptable duplicate imprecision)

U.S. EPA - CLP

5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

MCHG04S

000024

Ref. 2

Lab Name: PRECISION_ANALYTICAL_LABS Contract: _____

Lab Code: PRE___ Case No.: _____ SAS No.: 7453-C SDG No.: MCHG03

Matrix (soil/water): SOIL__ Level (low/med): MED___

% Solids for Sample: _94.0

Concentration Units (ug/L or mg/kg dry weight): ~~mg/kg~~ UG/L (from raw data)

| 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 | | 52.7 | | 55.3 | | 1.0 | 0.0 | N | NR |
| Nickel | | | | | | | | | NR |
| Potassium | | | | | | | | | NR |
| Selenium | | | | | | | | | NR |
| Silver | | | | | | | | | NR |
| Sodium | | | | | | | | | NR |
| Thallium | | | | | | | | | NR |
| Vanadium | | | | | | | | | NR |
| Zinc | | | | | | | | | NR |
| Cyanide | | | | | | | | | NR |

Comments:

*SR > 4 X SA; no action

U.S. EPA - CLP

5B
POST DIGEST SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

MCHG12A

Ref.2 000026

Lab Name: PRECISION_ANALYTICAL_LABS Contract: _____

Lab Code: PRE___ Case No.: _____ SAS No.: 7453-C SDG No.: MCHG03

Matrix (soil/water) : SOIL__ Level (low/med): MED___

Concentration Units: ug/L

| Analyte | Control Limit %R | Spiked Sample Result (SSR) | C | Sample Result (SR) | C | Added (SA) | %R | Q | M |
|---|---|---|---|---|---|---|---|---|---|
| Aluminum | | | | | | | | | NR |
| Antimony | | 109.95 | | 30.00 | U | 120.0 | 91.6 | | P |
| Arsenic | | | | | | | | | NR |
| Barium | | | | | | | | | NR |
| Beryllium | | | | | | | | | NR |
| Cadmium | | | | | | | | | NR |
| Calcium | | | | | | | | | NR |
| Chromium | | 849.62 | | 335.46 | | 600.0 | 85.7 | | P |
| 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:

Metal As
IDL 2.0 ug/l
U = < IDL

**Graphite Furnace** Spike Recovery Evaluation Form

Ref. 3

| | 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 mg/kg |
|---|---|---|---|---|---|---|---|
| | MCHG12 | 34.08 | 86.7 | | | | 7.3 |
| | MCHG03 | 32.92 | 87.4 | | | | 12.2 |
| | MCHG04 | 10.46 | 63.4 | | | 6.7x2 | 2.8 |
| | | | | | | | |
| | | | | | | | |
| Pb | MCHG12 | 745.1 | 126.6 | | | | 159 |
| IDL=1.0 ug/L | MCHG04 | 77.89 | 64.8 | | | 21.9x4 | 18.6 |
| | | | | | | | |
| | | | | | | | |
| Se | MCHG03 | 30.88 | 79.9 | 27.98 | 76.4 | 16.2x2 | 12.0 |
| IDL=1.0 ug/L | MCHG04 | -0.21 | 100.6 | -0.11 | 90.5 | | 0.21U |
| | MCHG12 | 1.91 | 92.3 | | | | 0.41 |
| | | | | | | | |
| | | | | | | | |
| Tl | MCHG12 | <0.14 | | 0.33 | 61.7 | | 0.43U |
| IDL=2.0 ug/L | MCHG03 | 5.32 | | 5.62 | 84.9 | | 2.1 |
| | MCHG04 | 0.04 | | 0.04 | 85.9 | | 0.43U |
| | | | | | | | |
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| | | | | | | | |

% solids
MCHG12 = 94 MCHG03 = 54 MCHG04 = 94

U.S. EPA - CLP

000032

9

ICP SERIAL DILUTION

EPA SAMPLE NO.

MCHG12 L

Ref. 4

Lab Name: PRECISION_ANALYTICAL_LABS Contract: _____

Lab Code: PRE___ Case No.: _____ SAS No.: 7453-C SDG No.: MCHG03

Matrix (soil/water): SOIL_ Level (low/med): MED__

Concentration Units: ug/L

| Analyte | Initial Sample Result (I) | C | Serial Dilution Result (S) | C | % Difference | Q | M |
|---|---|---|---|---|---|---|---|
| Aluminum | 70521.47 | | 78941.05 | | 11.9 | E | P |
| Antimony | 30.00 | U | 150.00 | U | | | P |
| Arsenic | | | | | | | |
| Barium | 798.00 | | 884.95 | B | 10.9 * | | P |
| Beryllium | 5.97 | | 15.00 | U | 100.0 * | | P |
| Cadmium | 4.00 | U | 20.00 | U | | | P |
| Calcium | 237894.31 | | 271672.20 | | 14.2 | E | P |
| Chromium | 335.46 | | 386.15 | | 15.1 | E | P |
| Cobalt | 42.33 | B | 200.00 | U | 100.0 * | | P |
| Copper | 139.19 | | 312.10 | | 124.2 * | | P |
| Iron | 139076.23 | | 160010.95 | | 15.1 | E | P |
| Lead | 633.13 | | 869.75 | | 37.4 * | | P |
| Magnesium | 43325.94 | | 48891.35 | | 12.8 | E | P |
| Manganese | 6608.55 | | 7549.85 | | 14.2 | E | P |
| Mercury | | | | | | | |
| Nickel | 158.19 | | 238.55 | | 50.8 * | | P |
| Potassium | 8719.12 | | 8443.40 | B | 3.2 | | P |
| Selenium | | | | | | | |
| Silver | 4.00 | U | 20.00 | U | | | P |
| Sodium | 1618.46 | B | 3025.25 | B | 86.9 * | | P |
| Thallium | | | | | | | |
| Vanadium | 121.79 | | 123.20 | B | 1.2 | | P |
| Zinc | 452.14 | | 551.40 | | 22.0 * | | P |

* I < 50 x IDL; no action

Ref 5

Pb ID: PBSS Seq. No.: 00007 A/S Pos.: 7 Date: 10/16/92

Replicate 1 Time: 16:49
Peak Area (A-s): 0.133 Peak Height (A): 0.308
Background Pk Area (A-s): 0.178 Background Pk Height (A): 0.066
Blank Corrected Pk Area (A-s): 0.122
Concentration (ug/L ): 20.78 Corrected Conc (ug/L ): 20.78

Replicate 2 (Peak Stored) Time: 16:52
Peak Area (A-s): 0.149 Peak Height (A): 0.311
Background Pk Area (A-s): 0.167 Background Pk Height (A): 0.068
Blank Corrected Pk Area (A-s): 0.138
Concentration (ug/L ): 23.48 Corrected Conc (ug/L ): 23.48

Mean Conc (ug/L ): 22.13 SD: 1.909 RSD(%): 8.62
Corrected Conc (ug/L ): 22.13

Pb ID: MCHG12 Seq. No.: 00008 A/S Pos.: 8 Date: 10/16/92

Replicate 1 Time: 16:55
Peak Area (A-s): 0.432 Peak Height (A): 0.791
Background Pk Area (A-s): 0.300 Background Pk Height (A): 0.136
Blank Corrected Pk Area (A-s): 0.421
Concentration (ug/L ): 76.19 Corrected Conc (ug/L ): 761.9

Replicate 2 (Peak Stored) Time: 16:58
Peak Area (A-s): 0.416 Peak Height (A): 0.813
Background Pk Area (A-s): 0.301 Background Pk Height (A): 0.142
Blank Corrected Pk Area (A-s): 0.405
Concentration (ug/L ): 72.87 Corrected Conc (ug/L ): 728.7

Mean Conc (ug/L ): 74.51 SD: 2.342 RSD(%): 3.14
Corrected Conc (ug/L ): 745.1

Pb ID: MCHG12DS Seq. No.: 00009 A/S Pos.: 9 Date: 10/ 92

Replicate 1 Time: 17:00
Peak Area (A-s): 0.547 Peak Height (A): 1.039
Background Pk Area (A-s): 0.323 Background Pk Height (A): 0.218
Blank Corrected Pk Area (A-s): 0.536
Concentration (ug/L ): 111.18 Corrected Conc (ug/L ): 1111.8

Replicate 2 (Peak Stored) Time: 17:03
Peak Area (A-s): 0.525 Peak Height (A): 0.974
Background Pk Area (A-s): 0.326 Background Pk Height (A): 0.203
Blank Corrected Pk Area (A-s): 0.514
Concentration (ug/L ): 101.52 Corrected Conc (ug/L ): 1015.2

Mean Conc (ug/L ): 106.35 SD: 6.624 RSD(%): 6.22
Corrected Conc (ug/L ): 1061.5

Pb ID: MCHG12D Seq. No.: 00010 A/S Pos.: 10 Date: 10/16/92

Replicate 1 Time: 17:06
Peak Area (A-s): 0.503 Peak Height (A): 0.940