SCREENING SITE INSPECTION REPORT
FOR
INLAND STEEL MINING CO. ST. PAUL MINE
KEEWATIN, MINNESOTA
U.S. EPA ID: MND980609937
SS ID: NONE
TDD: F05-8802-033
PAN: FMN0163SA

EPA Region 5 Records Ctr.
315327

DECEMBER 30, 1988

ecology and environment, inc.
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International Specialists in the Environment
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# 1. INTRODUCTION

Ecology and Environment, Inc., Field Investigation Team (FIT) was tasked by the United States Environmental Protection Agency (U.S. EPA) to conduct a screening site inspection (SSI) of the Inland Steel Mining Co. St. Paul Mine (St. Paul Mine) site under contract number 68-01-7347.

The site was initially discovered when Inland Steel Mining Co. submitted to the U.S. EPA a Notification of Hazardous Waste Site form for 15 of its mine sites in the state of Minnesota, in accordance with the Superfund regulations (Reipas 1981). The site was evaluated in the form of a preliminary assessment (PA) that was submitted to U.S. EPA. The PA was prepared by Tim Musick of the Minnesota Pollution Control Agency (MPCA), in Duluth, Minnesota, on December 26, 1984.

FIT prepared an SSI work plan for the St. Paul Mine site under technical directive document (TDD) F05-8706-139, issued on June 9, 1987. The SSI work plan was approved by U.S. EPA on February 23, 1988. The SSI of the St. Paul Mine site was conducted on May 4 and 5, 1988, under TDD F05-8802-033, issued on February 23, 1988.

The FIT SSI included an interview with a site representative, a reconnaissance inspection of the site, and the collection of three soil samples, two municipal well samples, and two surface water samples.

The purposes of an SSI have been stated by U.S. EPA in a directive outlining Pre-Remedial Program strategies. The directive states:

> All sites will receive a screening SI to 1) collect additional data beyond the PA to enable a more refined

> preliminary HRS [Hazard Ranking System] score, 2) establish priorities among sites most likely to qualify for the NPL [National Priorities List], and 3) identify the most critical data requirements for the listing SI step. A screening SI will not have rigorous data quality objectives (DQOs). Based on the refined preliminary HRS score and other technical judgement factors, the site will then either be designated as NFRAP [no further remedial action planned], or carried forward as an NPL listing candidate. A listing SI will not automatically be done on these sites, however. First, they will go through a management evaluation to determine whether they can be addressed by another authority such as RCRA [Resource Conservation and Recovery Act].... Sites that are designated NFRAP or deferred to other statutes are not candidates for a listing SI.
>
> The listing SI will address all the data requirements of the revised HRS using field screening and NPL level DQOs. It may also provide needed data in a format to support remedial investigation work plan development. Only sites that appear to score high enough for listing and that have not been deferred to another authority will receive a listing SI. (U.S. EPA 1988)

U.S. EPA Region V has also instructed FIT to identify sites during the SSI that may require removal action to remediate an immediate human health and/or environmental threat.

# 2. SITE BACKGROUND

## 2.1 INTRODUCTION

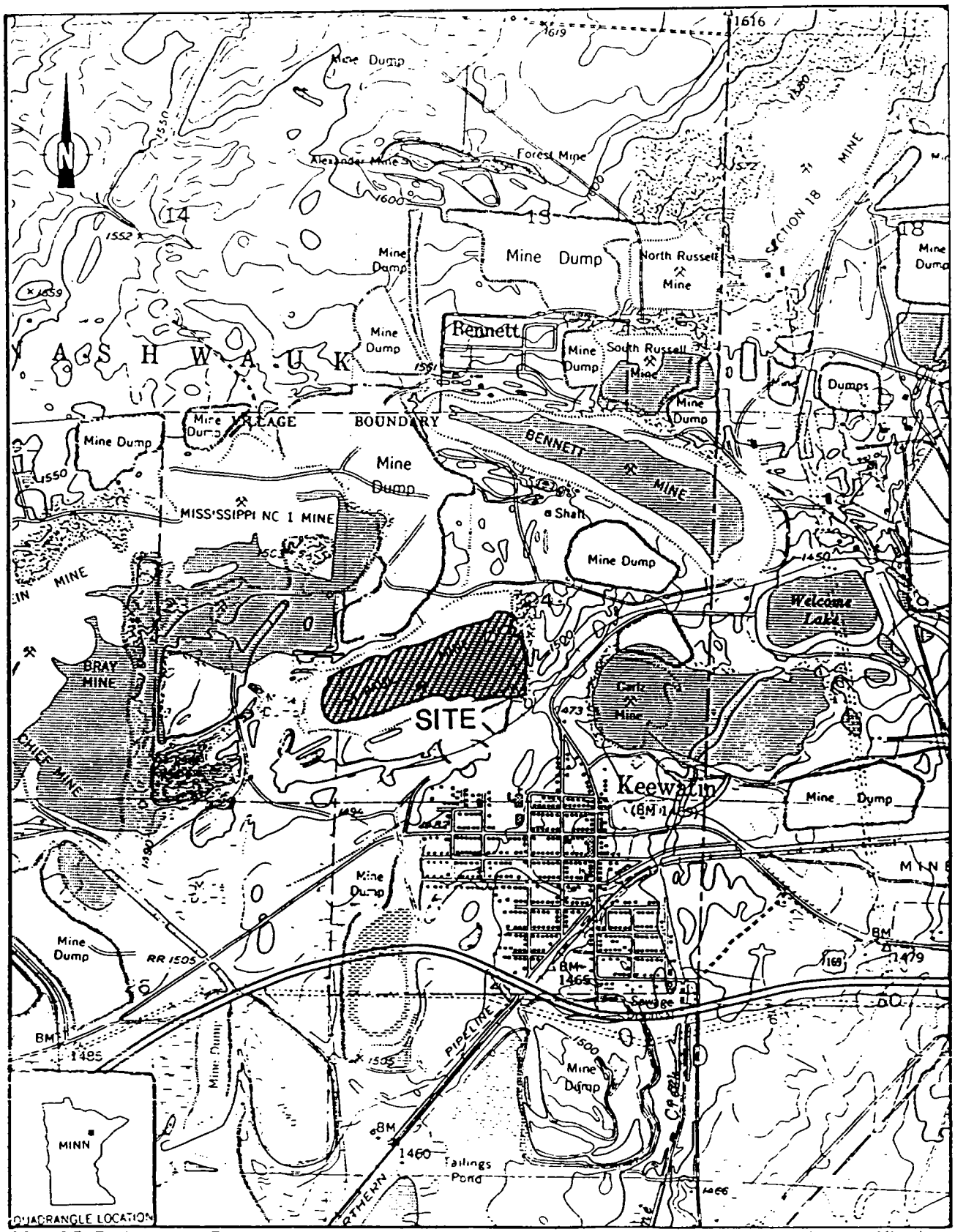
This section includes information obtained from SSI work plan preparation and the site representative interview.

## 2.2 SITE DESCRIPTION

The St. Paul Mine site is an inactive iron ore mine site where, based on present-day mining operations of other Inland Steel mines, spent solvents and leaded greases may have been generated during routine equipment maintenance. The possibility exists that these materials may have been disposed of on-site (MPCA 1984). The mine pit itself has become a lake as a result of groundwater flow into the open pit. The pit occupies approximately 60 acres of the 80-acre site and is situated in a heavily mined, sparsely populated area of Minnesota's Mesabi Iron Range, approximately 1/4 mile northwest of the town of Keewatin, Minnesota, in Itasca County (sec. 24, T.57N., R.22W.) (see Figure 2-1). A 4-mile radius map of the St. Paul Mine site is provided in Appendix A.

## 2.3 SITE HISTORY

The site is currently owned by Inland Steel Mining Company of Virginia, Minnesota. The initial date that the property was acquired by Inland Steel was sometime after 1964, but the specific date is unknown. Previous owners include Pacific Isle Mining Co., from 1956 to 1959, and again in 1964; Republic Steel Corp. in conjunction with St. Paul-Day




SOURCE: Ecology and Environment, Inc., 1988; BASE MAP: USGS, Keewatin, MN Quadrangle, 7.5 Minute Series, 1952.

SCALE
0 0.5 1 MILE

FIGURE 2-1 SITE LOCATION

Mine from 1936 to 1953; and The Corrigan McKinney Steel Co. from 1906 to 1935 (Lake Superior Iron Ore Association 1952).

Beginning in 1906, the site was an open pit iron ore mine. The site was last mined in 1964, and has since filled with groundwater to a depth of approximately 230 feet (Groebe 1987). The ore deposit is exposed at the bottom of the mine pit. The deposit was originally mined by drilling holes into the ore rock and inserting explosives. After the blast, the rock was crushed and then washed to remove silica. A high percentage of this ore was made into pellets (Groebe 1988).

Equipment used to remove the ore, such as mechanical shovels and diesel trucks, routinely required maintenance. For this purpose, solvents and leaded greases were normally used. Spent residues from these products were possibly deposited at the site rather than hauled away (Reipas 1981). It was also a common practice at ore mine sites to take the oily waste from engine oils and spread them on surrounding facility roads to control dust (Bonneville 1988). No remedial actions have been reported at any time in the site's history (Groebe 1988).

# 3. SCREENING SITE INSPECTION PROCEDURES AND FIELD OBSERVATIONS

## 3.1 INTRODUCTION

This section outlines procedures and observations of the SSI of the St. Paul Mine site. Individual subsections address the site representative interview, reconnaissance inspection, and sampling procedures. Rationales for specific FIT activities are also provided. The SSI was conducted in accordance with the U.S. EPA-approved work plan with the exception that two surface water samples were collected instead of four (at one depth only), and two municipal well samples were collected instead of one municipal well sample and two residential well samples.

The U.S. EPA Potential Hazardous Waste Site Inspection Report (Form 2070-13) for the St. Paul Mine site is provided in Appendix B. The U.S. EPA Immediate Removal Action Checksheet for the St. Paul Mine site is provided in Appendix C.

## 3.2 SITE REPRESENTATIVE INTERVIEW

Gerard E. Breen, FIT team leader, conducted an interview with Philip B. Groebe, General Supervisor of Lands and Community Relations for Inland Steel Mining Co., and Dale Bonneville, retired Equipment Mechanic for Pacific Isle Mining Co. Also present at the interview was FIT member Ted Wolff. The interview was conducted on May 3, 1988, at 9:00 a.m. at the Inland Steel Mining Co. Minorca Mine office in Virginia, Minnesota. The interview was conducted to gather information that would aid FIT in conducting SSI activities.

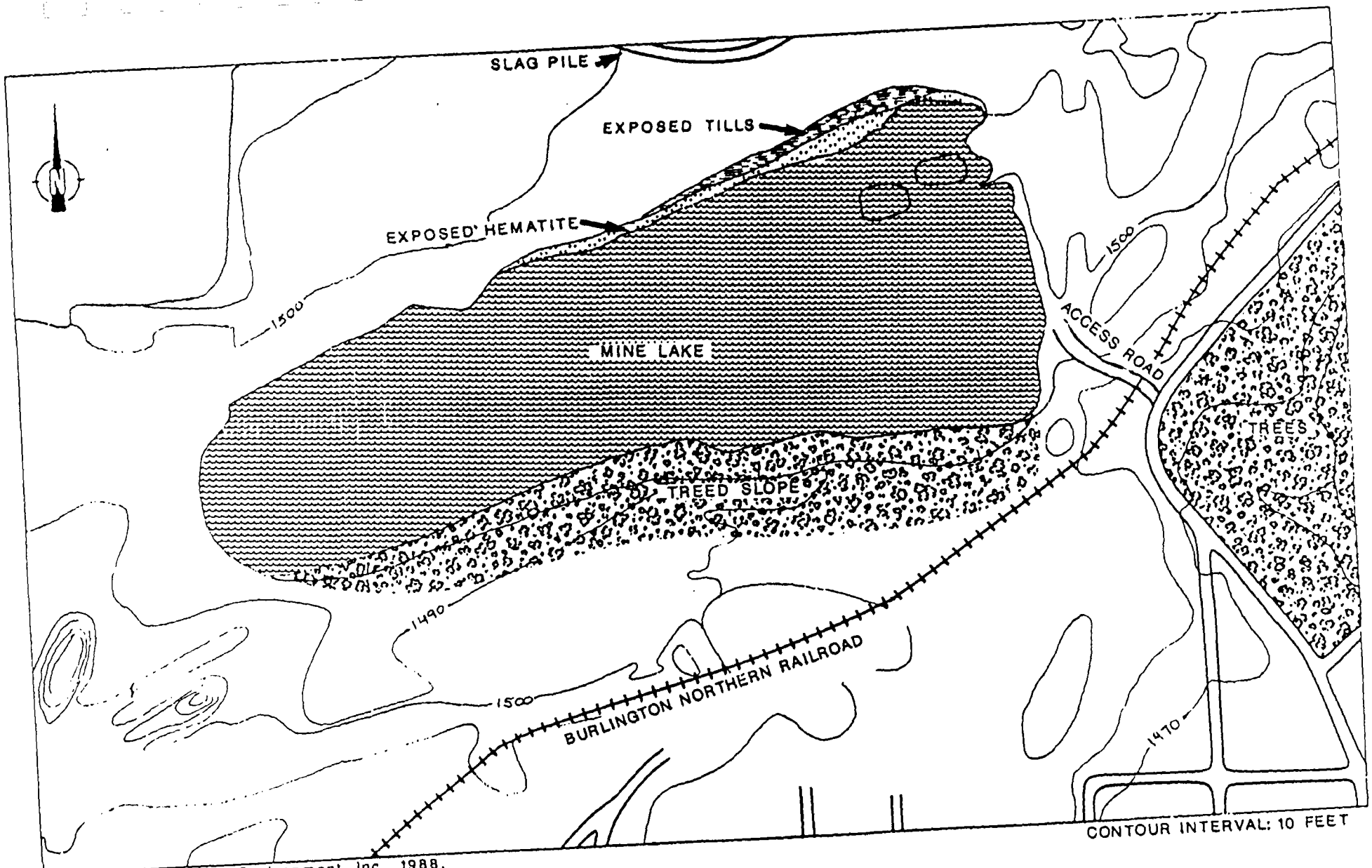
## 3.3 RECONNAISSANCE INSPECTION

Following the site representative interview, FIT conducted a reconnaissance inspection of the St. Paul Mine site and surrounding area in accordance with Ecology and Environment, Inc. (E & E), Health and Safety guidelines. The reconnaissance inspection included a walk-through of the site to determine appropriate health and safety requirements for conducting on-site activities and to make observations to aid in characterizing the site. FIT also determined exact sampling locations during the reconnaissance inspection.

The reconnaissance inspection was begun on May 4, 1988, at 11:00 a.m. Philip Groebe accompanied FIT during the reconnaissance inspection.

Reconnaissance Inspection Observations. The St. Paul Mine site is located approximately 1/4 mile northwest of the town of Keewatin, Minnesota. A large portion of the area within a 3-mile radius of the town of Keewatin is, or has been, heavily mined. Private residences outside of the town are few. The surface topography of the area surrounding the site consists of low hills and ridges which, in great measure, have been created from mine tailings. Several lakes, created by groundwater infiltration after mining operations have ceased, also exist in the vicinity of the site. The St. Paul Mine pit is approximately 230 feet deep, 3,000 feet long, and 1,500 feet wide (USGS 1952). A large tailings pile is situated approximately 600 feet north of the mine lake, and exposed areas of till and hematite are found along the water's edge on the north side of the mine lake (Groebe 1988). The terrain slopes up away from the lake on all sides, but most sharply along the forested south slope, where the average slope is approximately 13%. A fence exists around sections of the site, but is in poor condition and presents no continuous barrier to access by people in the area (see Figure 3-1 for locations of site features).

Vegetation on-site includes trees and low shrubs along all sides of the mine lake, but most abundantly along the south slope. Photographs of the St. Paul Mine site are provided in Appendix D.




SOURCE: Ecology and Environment, Inc., 1988.

FIGURE 3-1 SITE FEATURES

## 3.4 SAMPLING PROCEDURES

Samples were collected by FIT at locations determined during the reconnaissance inspection to determine levels of U.S. EPA Target Compound List (TCL) compounds and U.S. EPA Target Analyte List (TAL) analytes present at the site. The TCL and TAL are provided in Appendix E.

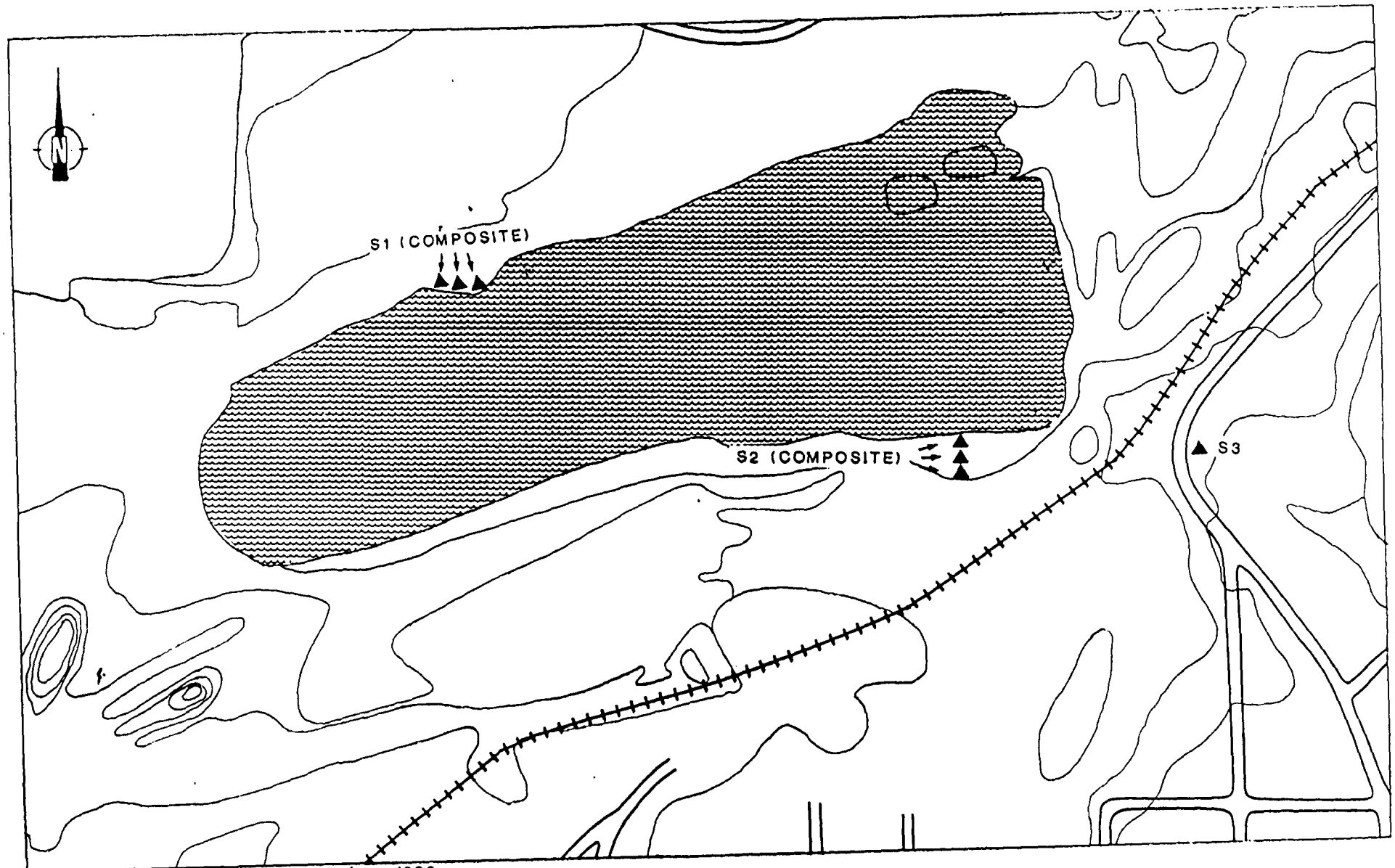
On May 4, 1988, FIT collected two on-site surface soil samples, and one potential background soil sample, and two surface water samples from the mine lake. On May 5, 1988, FIT collected two municipal well samples. An offer to share portions of the samples collected by FIT was extended to the site representative, but was declined.

Soil Sampling Procedures. Surface soil sample S1 was a composite sample collected from three locations approximately 5 feet from the north edge of the mine lake (see Figure 3-2 for soil sampling locations). Surface soil sample S2 was also a composite sample, collected from three locations on the southern slope leading down to the mine lake. Each portion of sample S2 was collected at a different elevation and distance from the lake's edge, the closest being approximately 10 feet from the water. Samples S1 and S2 were collected to determine whether TCL compounds and/or TAL analytes are present at the site. The locations of samples S1 and S2 were selected to best cover the site geographically and to obtain representative samples.

Surface soil samples S1 and S2 were collected using garden trowels to dig to a depth of approximately 6 inches. Material from the three locations used for each sample was mixed in a stainless steel bowl before being placed in sample bottles using stainless steel spoons (E & E 1987).

A potential background soil sample (indicated as S3) was collected from a wooded area 700 feet southeast of the site on the east side of First Street. The potential background soil sample was collected to determine the representative chemical content of the soil in the area surrounding the site.

Standard E & E decontamination procedures were adhered to during the collection of all soil samples. The procedures included the scrubbing of all equipment (e.g., trowels, bowls, and spoons) with a solution of Alconox and distilled water, and triple rinsing the




SOURCE: Ecology and Environment, Inc., 1988.

SCALE
0 500 1000 FEET

FIGURE 3-2 SOIL SAMPLING LOCATIONS

equipment with distilled water before the collection of each sample (E & E 1987). All soil samples were packaged and shipped in accordance with U.S. EPA-required procedures.

As directed by U.S. EPA, samples S1, S2, and S3 were analyzed for TCL compounds by Wan Technologies, Inc., of Atlanta, Georgia, and for TAL analytes by Roy F. Weston, Inc., of Lionville, Pennsylvania.

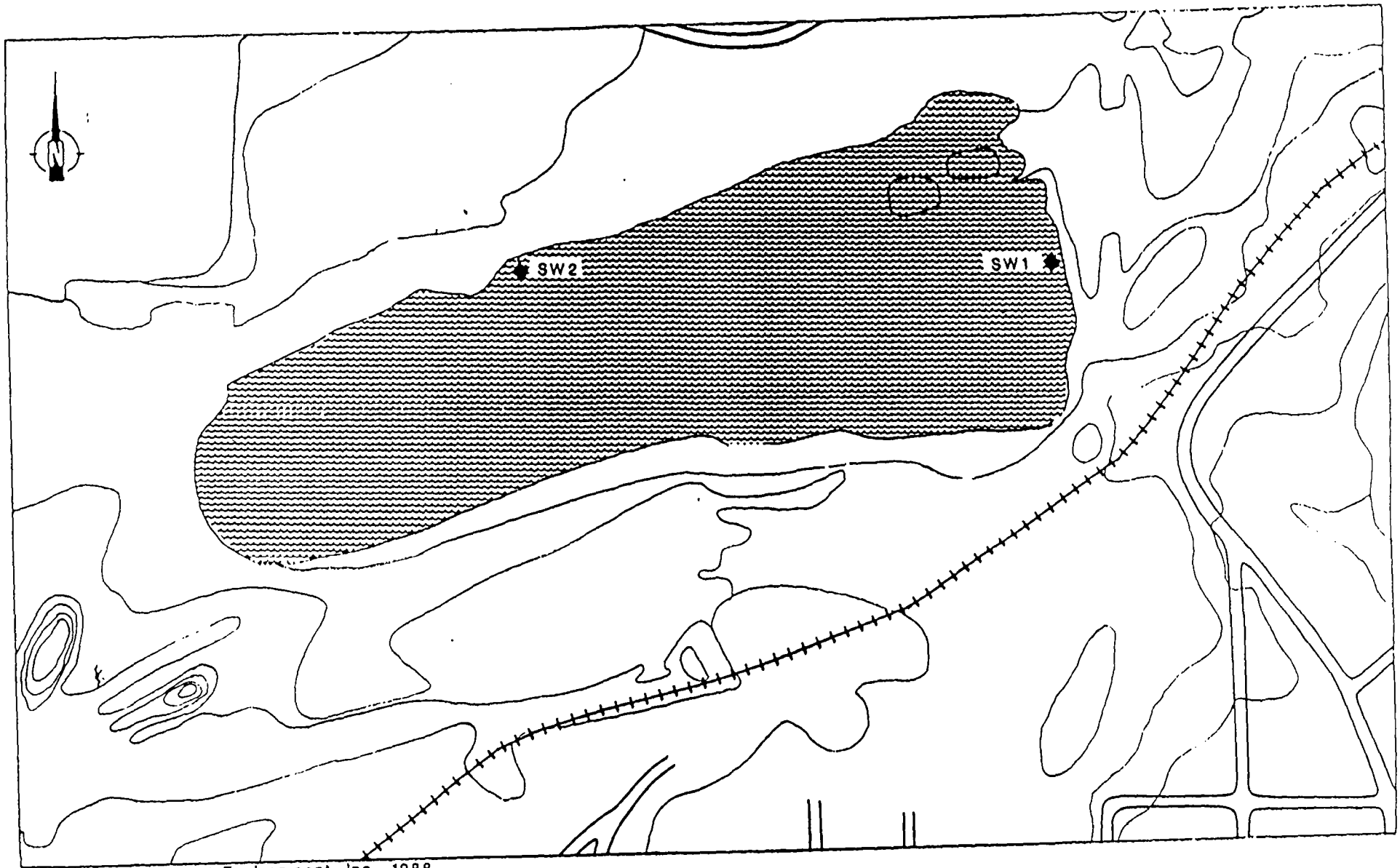
Surface Water Sampling Procedures. Surface water samples (indicated as SW1 and SW2) were collected to determine whether TCL compounds and/or TAL analytes are present in the mine lake.

Surface water sample SW1 was collected 2 feet from the eastern shore of the mine lake in approximately one foot of water (see Figure 3-3 for surface water sampling locations). Surface water sample SW2 was collected 2 feet off the northern shore of the mine lake in approximately one foot of water. The surface water samples were collected by wading out into the lake approximately 2 feet, and then placing the sample bottles into the water to fill them. A field blank and a duplicate surface water sample were collected in accordance with U.S. EPA quality assurance/quality control (QA/QC) requirements. The duplicate sample was collected at location SW2. All surface water samples were packaged and shipped in accordance with U.S. EPA-required procedures.

As directed by U.S. EPA, all surface water samples were analyzed for TCL compounds by Wan Technologies, Inc., of Atlanta, Georgia, and for TAL analytes by Roy F. Weston, Inc., of Lionville, Pennsylvania.

Municipal Well Sampling Procedures. Municipal well samples (indicated as RW1 and RW2) were collected to determine whether TCL compounds and/or TAL analytes had migrated from the site into groundwater in the area.

Municipal well sample RW1 was collected at the town of Keewatin's Municipal Well #2 on First Street next to the Carlz mine, approximately 1,500 feet southeast of the St. Paul Mine site (see Figure 3-4 for municipal well sampling locations). Municipal well sample RW2 was collected at Keewatin's Municipal Well #1 at the intersection of First Street and First Avenue in the town of Keewatin. The well is situated approximately 3,000 feet south and slightly east of the St. Paul Mine site. The municipal well samples were collected to determine whether




SOURCE: Ecology and Environment, Inc., 1988.

SCALE
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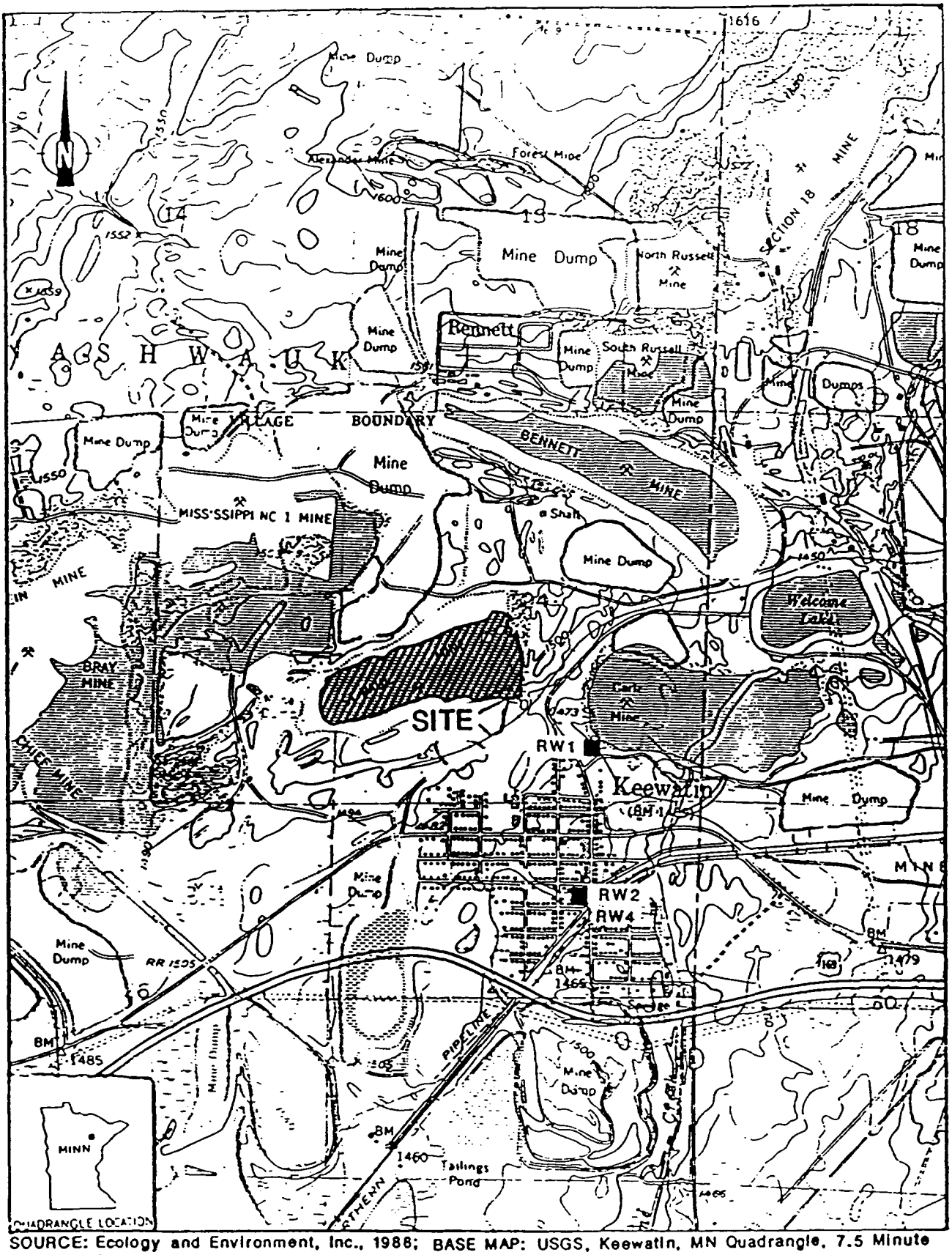
FIGURE 3-3 SURFACE WATER SAMPLING LOCATIONS




SOURCE: Ecology and Environment, Inc., 1988; BASE MAP: USGS, Keewatin, MN Quadrangle, 7.5 Minute Series, 1952.

SCALE
0 0.5 1 MILE

FIGURE 3-4 MUNICIPAL WELL SAMPLING LOCATIONS

TCL compounds and/or TAL analytes had migrated from the site into the area's groundwater system.

A field blank and a duplicate municipal well sample were also collected in accordance with U.S. EPA quality assurance/quality control (QA/QC) requirements. The duplicate sample, RW4, was collected at the same location as RW2 (see Table 3-1 for descriptions of municipal well sampling locations). No sample RW3 was collected.

All municipal well samples were obtained from outlets that bypassed water treatment systems and/or storage tanks. The water was allowed to discharge from the outlets for 15 minutes before samples were collected to ensure that the sample sources had been purged of standing water (E & E 1987). All municipal well samples were packaged and shipped in accordance with U.S. EPA-required procedures.

As directed by U.S. EPA, all municipal well samples were analyzed for TCL compounds by Enseco Corporation/ERCO of Cambridge, Massachusetts, and for TAL analytes by Central Regional Lab (CRL) of Chicago, Illinois.

Table 3-1

DESCRIPTIONS OF MUNICIPAL WELL SAMPLING LOCATIONS

| Sample | Description |
|---|---|
| RW1 | Keewatin Municipal Well #2, First Street, west side of Carlz mine. |
| RW2 and RW4 | Keewatin Municipal Well #1, First Street and First Avenue intersection. |

Source: Ecology and Environment, Inc. 1988.

# 4. ANALYTICAL RESULTS

## 4.1 INTRODUCTION

This section includes results of chemical analysis of FIT-collected soil, surface water, and municipal well samples for TCL compounds and TAL analytes.

## 4.2 RESULTS OF CHEMICAL ANALYSIS OF FIT-COLLECTED SAMPLES

Soil Analysis Results. Chemical analysis of FIT-collected on-site soil samples revealed substances from the following groups of TCL compounds and TAL analytes: phthalates, heavy metals, metals, common laboratory artifacts (methylene chloride, acetone, chloroform, and toluene), and common soil constituents. The background soil sample contained these same compounds and analytes, as well as some additional compounds and analytes (see Table 4-1 for complete soil sample chemical analysis results).

Surface Water Analysis Results. Analysis of FIT-collected surface water samples revealed substances from the following groups of TCL compounds and TAL analytes: ketones, chlorinated hydrocarbons, heavy metals, common laboratory artifacts (toluene and di-n-octylphthalate), and common groundwater constituents (see Table 4-2 for complete surface water sample chemical analysis results).

Municipal Well Analysis Results. Analysis of FIT-collected municipal well samples revealed substances from the following groups of TCL compounds and TAL analytes: heavy metals, common laboratory artifacts (toluene), and common groundwater constituents. Cadmium was

detected at 45.2 mg/L (see Table 4-3 for complete municipal well sample chemical analysis results).

Laboratory analytical data of soil sample analysis, surface water sample analysis, and municipal well sample analysis are provided in Appendix E. Contract Laboratory Program (CLP) quantitation/detection limits are also provided in Appendix E.

Table 4-1
RESULTS OF CHEMICAL ANALYSIS OF
FIT-COLLECTED SOIL SAMPLES

| Sample Collection Information and Parameters | Sample Number S1 | S2 | S3 |
|---|---|---|---|
| Date | 5/4/88 | 5/4/88 | 5/4/88 |
| Time | 1245 | 1300 | 1320 |
| Organic Traffic Report Number | EX951 | EX952 | EX953 |
| Inorganic Traffic Report Number | MEX616 | MEX617 | MEX618 |
| Compound Detected (values in μg/kg) | | | |
| Volatile Organics | | | |
| methylene chloride | 4J | 8 | 6 |
| chloroform | 1J | -- | -- |
| toluene | -- | 24 | 6 |
| Semivolatile Organics | | | |
| phenanthrene | -- | -- | 50J |
| fluoranthene | -- | -- | 79J |
| pyrene | -- | -- | 67J |
| chrysene | -- | -- | 58J |
| bis(2-ethylhexyl)phthalate | -- | -- | 220J |
| di-n-octylphthalate | 750BJ | 2,400BJ | 460BJ |
| Pesticides/PCBs | | | |
| gamma BHC (Lindane) | -- | -- | 0.35J |
| Aldrin | -- | -- | 0.42J |
| Analyte Detected (values in mg/kg) | | | |
| aluminum | 886E | 2,120E | 1,740E |
| antimony | -- | 13.8 | -- |
| arsenic | 0.66B | 1.8B | 1.2B |
| barium | 21.7B | 24.6B | 14.8B |

Table 4-1 (Cont.)

| Sample Collection Information and Parameters | Sample Number S1 | S2 | S3 |
|---|---|---|---|
| beryllium | -- | 0.25B | 0.11B |
| calcium | 3,010E | 8,580E | 1,020E |
| chromium | 2.4 | 9.0 | 7.7 |
| cobalt | 8.9E | 4.5B | 3.6B |
| copper | -- | 10 | 7.6 |
| iron | 14,100 | 8,560 | 7,660 |
| lead | 2.1 | 2.2 | 22.4 |
| magnesium | 619B | 2,530 | 1,240 |
| manganese | 1,010E | 274E | 489E |
| nickel | 12.8 | 10.3 | 5.7B |
| sodium | -- | 49.6B | 114B |
| vanadium | 4.7B | 12.3 | 6.5B |
| zinc | 10.3 | 17 | 30.6 |

-- Not detected.

Table 4-1 (Cont.)

| COMPOUND QUALIFIERS | DEFINITION | INTERPRETATION |
|---|---|---|
| J | Indicates an estimated value. | Compound value may be semiquantitative. |
| B | This flag is used when the compound is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action. | Compound value may be semiquantitative if it is <5x the blank concentration (<10x the blank concentrations for common laboratory artifacts: phthalates, methylene chloride, acetone, toluene, 2-butanone). |

| ANALYTE QUALIFIERS | DEFINITION | INTERPRETATION |
|---|---|---|
| E | Estimated or not reported due to interference. See laboratory narrative. | Analyte or element was not detected, or value may be semiquantitative. |
| B | Value is real, but is above instrument DL and below CRDL. | Value may be quantitative or semi-quantitative. |

Source: Ecology and Environment, Inc. 1988.

Table 4-2
RESULTS OF CHEMICAL ANALYSIS OF
FIT-COLLECTED SURFACE WATER SAMPLES

| Sample Collection Information and Parameters | Sample Number SW1 | SW2 | Duplicate | Blank |
|---|---|---|---|---|
| Date | 5/4/88 | 5/4/88 | 5/4/88 | 5/4/88 |
| Time | 1215 | 1225 | 1225 | 1115 |
| Organic Traffic Report Number | EX954 | EX956 | EX959 | EX960 |
| Inorganic Traffic Report Number | MEX619 | MEX620 | MEX623 | MEX624 |
| Compound Detected (values in µg/L) | | | | |
| Volatile Organics | | | | |
| 1,2-dichloroethane | 2J | 2J | -- | -- |
| trichloroethene | 4J | -- | -- | -- |
| 1,1,2-trichloroethane | 2J | -- | -- | -- |
| 2-hexanone | 7J | -- | -- | -- |
| toluene | 2J | -- | -- | 4J |
| 1,1,2,2-tetrachloroethane | 3J | -- | -- | -- |
| Semivolatile Organics | | | | |
| di-n-octylphthalate | 3BJ | 1BJ | 3BJ | 2BJ |
| Analyte Detected (values in mg/L) | | | | |
| aluminum | 210 | 270 | 217 | 163B |
| barium | 26.7B | 26.7B | 26.7B | -- |
| calcium | 58,000 | 58,300 | 57,200 | 47B |
| copper | 12.8E | 15.5B | 15B | -- |
| iron | 66.1B | 446 | 130 | -- |
| magnesium | 34,400 | 34,000 | 34,000 | 4.2B |
| manganese | 24.4 | 70.9 | 36.2 | -- |

Table 4-2 (Cont.)

| Sample Collection Information and Parameters | Sample Number | | | |
|---|---|---|---|---|
| | SW1 | SW2 | Duplicate | Blank |
| potassium | 2,370B | 2,830B | 2,830B | -- |
| sodium | 7,910E | 7,830E | 8,410E | 156BE |
| zinc | 29.6* | -- | -- | -- |

-- Not detected.

Table 4-2 (Cont.)

| COMPOUND QUALIFIERS | DEFINITION | INTERPRETATION |
|---|---|---|
| J | Indicates an estimated value. | Compound value may be semiquantitative. |
| B | This flag is used when the compound is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action. | Compound value may be semiquantitative if it is <5x the blank concentration (<10x the blank concentrations for common laboratory artifacts: phthalates, methylene chloride, acetone, toluene, 2-butanone). |

| ANALYTE QUALIFIERS | DEFINITION | INTERPRETATION |
|---|---|---|
| E | Estimated or not reported due to interference. See laboratory narrative. | Analyte or element was not detected, or value may be semiquantitative. |
| * | Duplicate value outside QC protocols which indicates a possible matrix problem. | Value may be quantitative or semi-quantitative. |
| B | Value is real, but is above instrument DL and below CRDL. | Value may be quantitative or semi-quantitative. |

Source: Ecology and Environment, Inc. 1988.

Table 4-3
RESULTS OF CHEMICAL ANALYSIS OF
FIT-COLLECTED MUNICIPAL WELL SAMPLES

| Sample Collection Information and Parameters | Sample Number RW1 | RW2 | RW4 | Blank |
|---|---|---|---|---|
| Date | 5/5/88 | 5/5/88 | 5/5/88 | 5/5/88 |
| Time | 1010 | 1030 | 1030 | 1000 |
| Organic Traffic Report Number | EX961 | EX963 | EX965 | EX966 |
| Inorganic Traffic Report Number | 88FB19S05 | 88FB19S06 | 88FB19D06 | 88FB19R01 |
| Compound Detected (values in µg/L) | | | | |
| Volatile Organics | | | | |
| toluene | 2 | 3 | 3 | -- |
| Analyte Detected (values in mg/L) | | | | |
| barium | 22 | 159 | 159 | -- |
| cadmium | -- | 45.2 | 45.1 | -- |
| copper | -- | 6.57 | 6.88 | -- |
| iron | 538 | 508 | 522 | -- |
| magnesium | 34.6 | 15.7 | 15.7 | -- |
| manganese | 283 | 568 | 566 | -- |
| sodium | 8.8 | 7.22 | 7.20 | -- |

-- Not detected.

# 5. DISCUSSION OF MIGRATION PATHWAYS AND TARGETS

## 5.1 INTRODUCTION

This section discusses data and information that apply to potential migration pathways and targets of TCL compounds and/or TAL analytes that may be attributable to the St. Paul Mine site.

The five migration pathways of concern discussed are groundwater, surface water, air, fire and explosion, and direct contact.

## 5.2 GROUNDWATER

TAL analytes were detected in groundwater within a 1/4-mile radius of the site, but do not appear to be attributable to the St. Paul Mine site because these same analytes were detected in the potential background soil sample collected off-site.

There does exist a potential for TCL compounds and/or TAL analytes to migrate from the site to groundwater in the vicinity of the site. This potential is based on the following information:

- TCL compounds and TAL analytes have been detected at the site, in both soil samples and surface water samples from the mine lake;

- Wastes presumably were deposited at the site in a liquid state;

- The site is not lined; and

- The waste was possibly deposited directly on the ground within the pit.

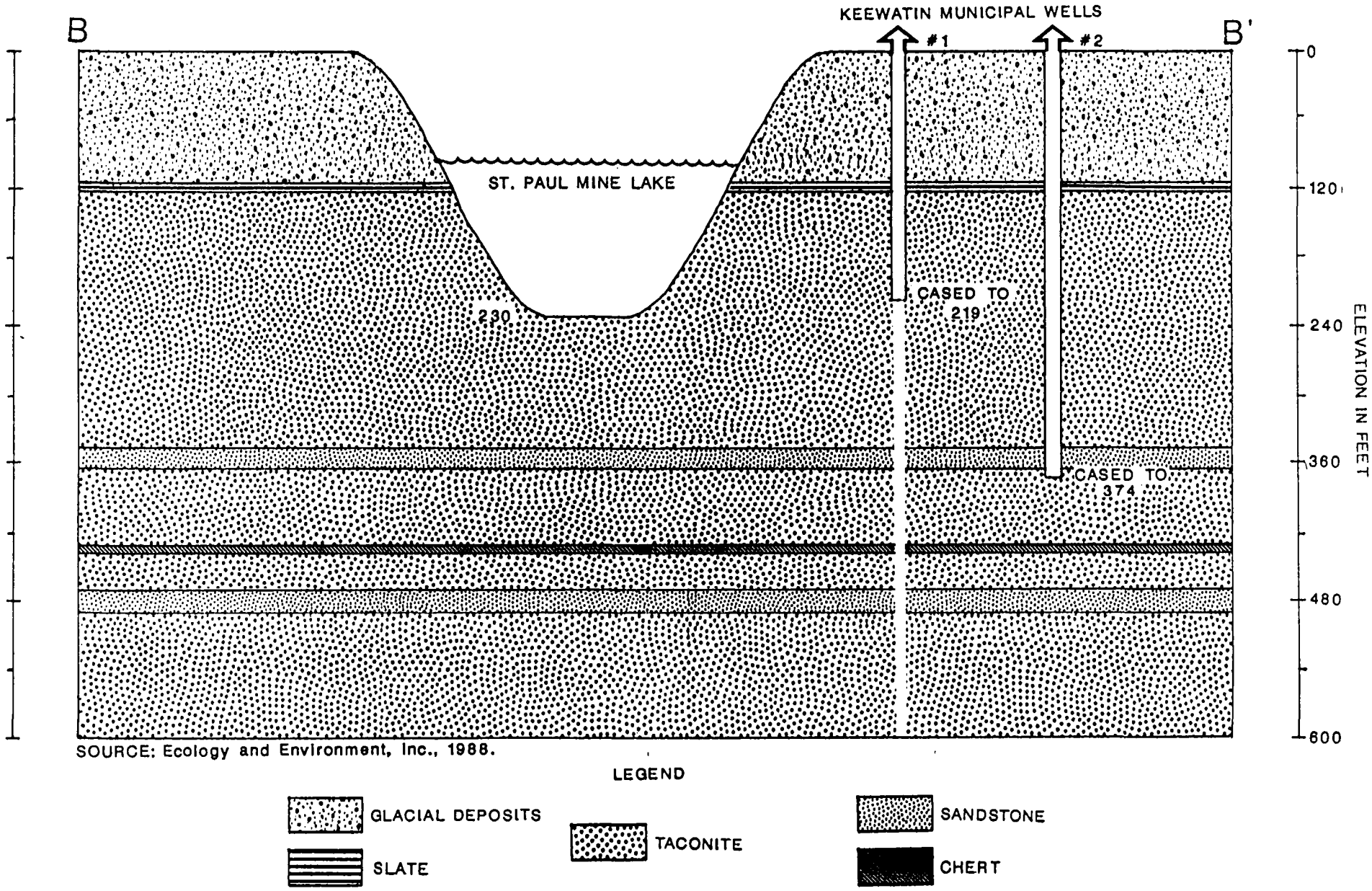
The potential for TCL compounds and/or TAL analytes to migrate to groundwater in the vicinity of the site is also based on the following geological information.

The general geology of the area of the site consists of glacially derived deposits of clay, sand, stones, and boulders, to a depth of approximately 115 feet. Beneath these glacial deposits is a layer of slate that averages 7 feet in thickness. Beneath this layer of slate is a deep section of taconite, which is a sedimentary rock containing 25% to 30% iron (Ojakangas and Matsch 1982). The taconite ranges in texture from very hard to soft or decomposed, and averages 225 feet in thickness. Underlying the layer of taconite is approximately 17 feet of paint rock (sandstone) followed by porous disseminated cherty taconite with interbedded hard cherty beds and soft sandy beds with an average thickness of 100 feet (Olson 1987).

The glacially deposited material forms an aquifer used by approximately 54 residences outside of Keewatin's municipal water boundaries (USGS 1952). The Keewatin municipal wells draw from the sandstone layer and porous disseminated taconite formation. It can be assumed that the mine lake and the municipal wells are hydraulically connected by decomposed layers of taconite (which are assumed to be porous), because there are no continuous impermeable confining layers between the bottom of the mine lake and the municipal wells of Keewatin (see Figure 5-1). The bottom of the mine lake is 230 feet below the former land surface and the two municipal wells are cased to 214 feet and 374 feet.

The potential targets of groundwater contamination include 1,700 persons within a 3-mile radius of the site who obtain drinking water from municipal wells (USGS 1952). Because the surface of the mine lake is near the lower extent of the shallow drift aquifer, there is little potential for contamination of wells in this aquifer from waste that may have been disposed of in the mine pit.

According to Gerald Olson, Superintendent, Keewatin Public Works, the town of Keewatin operates two municipal wells. Municipal well #1 is




SOURCE: Ecology and Environment, Inc., 1988.

FIGURE 5-1 GEOLOGICAL PROFILE OF ST. PAUL MINE SITE KEEWATIN, MINNESOTA

cased to 219 feet of its 606-foot depth and is located in the center of the town of Keewatin, approximately 3/4 miles southeast of the site. Municipal well #2, the nearest well to the site, is cased to 374 feet, and is located on Keewatin's north side, approximately 1/4 mile east-southeast of the site. Approximately 1,700 persons obtain drinking water from the Keewatin Municipal Water System (Olson 1987).

According to the 7.5 minute USGS topographic map of the Keewatin, Minnesota Quadrangle, approximately 153 persons reside within a 3-mile radius of the site outside the corporate limits of the town of Keewatin. The population count of 153 was derived by counting the number of houses outside of Keewatin within a 3-mile radius of the site, using the USGS topographic map of the Keewatin, Minnesota Quadrangle. The count was 54. This number of houses was multiplied by 2.84, which is the average number of persons per household in Itasca County, Minnesota, according to U.S. Census data for 1980. Fifty-four houses multiplied by 2.84 persons/household gives an estimate of 153 persons.

These residents obtain drinking water from private wells screened in the glacial drift aquifer at depths of approximately 54 to 71 feet (Olson 1987). These wells are cased above the elevation of the mine lake, and are therefore not threatened by contamination from the site.

## 5.3 SURFACE WATER

TCL compounds and TAL analytes were detected in the on-site surface water sample, and do appear to be attributable to the St. Paul Mine site based on information currently available. This conclusion is based on the following information:

- Waste may have been deposited in the original mine pit;
- Heavy metals and solvents were detected in the surface water samples; and
- Groundwater has infiltrated the open mine pit to form the mine lake, and therefore, groundwater is potentially contaminated by migration of contaminants away from the lake.

The mine lake is completely contained within the original open mine pit; there are no effluent or affluent streams leading away from or into the mine lake. The mine lake is not used as a source of drinking water or irrigation, but is used for recreational purposes by children who occasionally swim in the lake (Bonneville 1988).

## 5.4 AIR

A release of potential contaminants to the air was not documented during the SSI of the St. Paul Mine site. During the reconnaissance inspection, FIT site-entry instruments (radiation alert meter, oxygen meter, explosimeter, hydrogen cyanide monitor, and HNU 101) did not detect levels above background concentrations at the site (E & E 1987). In accordance with the U.S. EPA-approved work plan, further air monitoring was not conducted by the FIT.

The potential exists for windblown particulates to carry TAL analytes from the site.

## 5.5 FIRE AND EXPLOSION

FIT observations and explosimeter readings at the St. Paul Mine site indicated that there is no apparent potential for fire and/or explosion at the site.

## 5.6 DIRECT CONTACT

According to federal, state, and local file information reviewed by FIT, and interviews with local officials, there is no documentation of an incident of direct contact with TCL compounds and/or TAL analytes at the St. Paul mine site.

There is a potential that the public may come into direct contact with TCL compounds and/or TAL analytes detected at the site. The potential for direct contact is based on the following information:

- TCL compounds and TAL analytes have been detected at the site in both soil and surface water samples;

- Access to the site is not completely restricted; fencing around the mine lake is not continuous and there is no guard or other means of security used;

- Children have been observed swimming in the lake (Groebe 1988); and

- Footpaths surround the lake, and hikers were observed during the FIT reconnaissance inspection of the site.

The population within a 1-mile radius of the site is 1,700. There are no residences outside of the limits of Keevatin within 1 mile of the site. The entire population of Keewatin is within the 1-mile radius, resulting in a target population of 1,700 (Olson 1987).

# 6. BIBLIOGRAPHY


Bonneville, Dale, May 3, 1988, interview, retired Equipment Mechanic for Pacific Isle Mining Co., Virginia, Minnesota, interviewed by Gerard Breen of E & E.

E & E, 1987, Quality Assurance Project Plan Region V FIT Conducted Site Inspections, Chicago, Illinois.

Groebe, Philip B., October 22, 1987, telephone conversation, General Supervisor of Lands and Community Relations, Inland Steel Mining Co., Minorca Mine, Virginia, Minnesota, contacted by Gerard Breen of E & E.

Groebe, Philip B., May 3, 1988, interview, General Supervisor of Lands and Community Relations, Inland Steel Mining Co., Minorca Mine, Virginia, Minnesota, interviewed by Gerard Breen of E & E.

Lake Superior Iron Ore Association, 1952, Lake Superior Iron Ore Mining Directory and Statistical Record of the Lake Superior Iron Ore District of the United States and Canada, Second Edition, Cleveland, Ohio.

Minnesota Pollution Control Agency (MPCA), Preliminary Assessment of Inland Steel Mining Co., St. Paul Mine, December 26, 1984, completed by Tim Musick, Minnesota Pollution Control Agency, Duluth, Minnesota.

Ojakangas, Richard, and Matsch, Charles, 1982, Minnesota's Geology, University of Minnesota Press, Minneapolis, Minnesota.

Olson, Gerald, August 20 and October 20, 1987, telephone conversation, Keewatin Public Works, Keewatin, Minnesota, contacted by Gerard Breen of E & E.

Reipas, Samuel A., June 5, 1981, Vice President of Operations, Inland Steel Mining Co., correspondence with U.S. EPA, Virginia, Minnesota.

U.S. Bureau of the Census, 1980 Census of Population, General Population Characteristics--Minnesota.

U.S. EPA, February 12, 1988, Office of Solid Waste and Emergency Response, Pre-Remedial Strategy for Implementing SARA, Directive number 9345.2-01, Washington, D.C.

USGS, 1952, Topographic Map, Keewatin Quadrangle, Minnesota, 7.5 Minute Series: 1:24,000.

1292:1

# APPENDIX A

## SITE 4-MILE RADIUS MAP

# SDMS US EPA Region V

*Imagery Insert Form*

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# APPENDIX B

## U.S. EPA FORM 2070-13

# Site Inspection Report

EPA

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

**I. IDENTIFICATION**

| 01 STATE | 02 SITE NUMBER |
|---|---|
| MN | D980609937 |

**II. SITE NAME AND LOCATION**

| 01 SITE NAME (Legal, common, or descriptive name of site) | 02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER |
|---|---|
| Inland Steel Mining Co., St. Paul Mine | N½ SW¼, Sec. 24, T57N, R22W |

| 03 CITY | 04 STATE | 05 ZIP CODE | 06 COUNTY | 07 COUNTY CODE | 08 CONG DIST |
|---|---|---|---|---|---|
| Keewatin | MN | 55753 | Itasca | 061 | 08 |

| 09 COORDINATES LATITUDE | LONGITUDE | 10 TYPE OF OWNERSHIP (Check one) |
|---|---|---|
| 47° 24' 00.0" | 93° 05' 00.0" | ■ A. PRIVATE ☐ B. FEDERAL ☐ C. STATE ☐ D. COUNTY ☐ E. MUNICIPAL ☐ F. OTHER ☐ G. UNKNOWN |

**III. INSPECTION INFORMATION**

| 01 DATE OF INSPECTION (Month Day Year) | 02 SITE STATUS | 03 YEARS OF OPERATION (Beginning Year / Ending Year) |
|---|---|---|
| 05/04/88 | ☐ ACTIVE ■ INACTIVE | 1906 / 1964 NON-CONTINUOUS OPERATIONS ☐ UNKNOWN |

04 AGENCY PERFORMING INSPECTION (Check all that apply)

☐ A. EPA ■ B. EPA CONTRACTOR Ecology and Environment (Name of firm) ☐ C. MUNICIPAL ☐ D. MUNICIPAL CONTRACTOR ____ (Name of firm)
☐ E. STATE ☐ F. STATE CONTRACTOR ____ (Name of firm) ☐ G. OTHER ____ (Specify)

| 05 CHIEF INSPECTOR | 06 TITLE | 07 ORGANIZATION | 08 TELEPHONE NO. |
|---|---|---|---|
| Gerard Breen | Hydrologist | E+E FIT | (312) 663-9415 |
| **09 OTHER INSPECTORS** | **10 TITLE** | **11 ORGANIZATION** | **12 TELEPHONE NO.** |
| Ken Dulik | Zoologist | E+E FIT | (312) 663-9415 |
| Ted Wolff | Biologist | E+E FIT | (312) 663-9415 |
| Dave Klatt | Environmental Specialist | E+E FIT | (312) 663-9415 |
| | | | ( ) |
| | | | ( ) |

| 13 SITE REPRESENTATIVES INTERVIEWED | 14 TITLE | 15 ADDRESS | 16 TELEPHONE NO. |
|---|---|---|---|
| Philip Groebe | General Supervisor | Inland Steel Mining P.O. Box 1 Virginia Minnesota | (218) 749-5910 |
| Dale Bonneville | Equipment Mechanic (Retired) | Formerly of Pacific Isle Mining Co. | ( ) |
| | | | ( ) |
| | | | ( ) |
| | | | ( ) |
| | | | ( ) |
| | | | |

| 17 ACCESS GAINED BY (Check one) | 18 TIME OF INSPECTION | 19 WEATHER CONDITIONS |
|---|---|---|
| ■ PERMISSION ☐ WARRANT | 0900 | Sunny, in the 70's, light winds |

**IV. INFORMATION AVAILABLE FROM**

| 01 CONTACT | 02 OF (Agency/Organization) | 03 TELEPHONE NO. |
|---|---|---|
| Mr. Ron Swenson | Minnesota Pollution Control Agency | (612) 297-1793 |

| 04 PERSON RESPONSIBLE FOR SITE INSPECTION FORM | 05 AGENCY | 06 ORGANIZATION | 07 TELEPHONE NO. | 08 DATE (Month Day Year) |
|---|---|---|---|---|
| Gerard Breen | U.S. EPA | E+E FIT | 312-663-9415 | 9/8/88 |

EPA FORM 2070-13 (7-81)

EPA

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

| I. IDENTIFICATION | |
|---|---|
| 01 STATE | 02 SITE NUMBER |
| MN | D980609937 |

## II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

**01 PHYSICAL STATES** (Check all that apply)

- ☐ A. SOLID
- ☐ B. POWDER, FINES
- ☐ C. SLUDGE
- ☐ E. SLURRY
- ☑ F. LIQUID
- ☐ G. GAS
- ☑ D. OTHER Grease (Specify)

**02 WASTE QUANTITY AT SITE** (Measures of waste quantities must be independent)

TONS _____

CUBIC YARDS unknown

NO. OF DRUMS _____

**03 WASTE CHARACTERISTICS** (Check all that apply)

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

## III. WASTE TYPE

| CATEGORY | SUBSTANCE NAME | 01 GROSS AMOUNT | 02 UNIT OF MEASURE | 03 COMMENTS |
|---|---|---|---|---|
| SLU | SLUDGE | | | |
| OLW | OILY WASTE | unknown | | Records pertaining to general |
| SOL | SOLVENTS | unknown | | maintenance waste are not |
| PSD | PESTICIDES | unknown | | available, the site was last |
| OCC | OTHER ORGANIC CHEMICALS | | | active in 1964. |
| IOC | INORGANIC CHEMICALS | | | |
| ACD | ACIDS | | | |
| BAS | BASES | | | |
| MES | HEAVY METALS | unknown | | |

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

| 01 CATEGORY | 02 SUBSTANCE NAME | 03 CAS NUMBER | 04 STORAGE/DISPOSAL METHOD | 05 CONCENTRATION | 06 MEASURE OF CONCENTRATION |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| OCC | phenanthrene | 85-01-8 | SOIL S3 | 50J | ug/Kg |
| OCC | fluoranthene | 206-44-0 | SOIL S3 | 79J | ug/Kg |
| OCC | pyrene | 129-00-0 | SOIL S3 | 67J | ug/Kg |
| OCC | chrysene | 218-01-9 | SOIL S3 | 58J | ug/Kg |
| | | | | | |
| | | | | | |
| PSD | gamma BHC (Lindane) | 58-89-9 | SOIL S3 | 0.35J | ug/kg |
| PSD | aldrin | 309-00-2 | SOIL S3 | 0.42J | ug/kg |
| MES | aluminum | 7429-90-5 | SOIL S1, S2, S3 | 2120 E | mg/kg |
| MES | antimony | 7440-36-0 | SOIL S2 | 13.8 | mg/kg |
| MES | arsenic | 7440-38-2 | SOIL S1, S2, S3 | 1.8 B | mg/kg |
| MES | barium | 7440-39-3 | SOIL S1, S2, S3 | 24.6 B | mg/kg |

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

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

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

State and FIT Files
SSI conducted on May 4, 1988

Continued from Part 11, Section IV.

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

| 01 CATEGORY | 02 SUBSTANCE NAME | 03 CAS NUMBER | 04 STORAGE/DISPOSAL METHOD | 05 CONCENTRATION | 06 MEASURE OF CONCENTRATION |
|---|---|---|---|---|---|
| MES | beryllium | 7440-41-7 | SOIL S2, S3 | 0.25B | mg/kg |
| MES | calcium | 7440-70-2 | SOIL S1, S2, S3 | 8580E | mg/kg |
| MES | chromium | 7440-47-3 | SOIL S1, S2, S3 | 9.0 | mg/kg |
| MES | cobalt | 7440-48-4 | SOIL S1, S2, S3 | 8.9E | mg/kg |
| MES | copper | 7440-50-8 | SOIL S2, S3 | 10 | mg/kg |
| MES | iron | 7439-89-6 | SOIL S1, S2, S3 | 14100 | mg/kg |
| MES | lead | 7439-92-1 | SOIL S1, S2, S3 | 22.4 | mg/kg |
| MES | magnesium | 7439-95-4 | SOIL S1, S2, S3 | 2530 | mg/kg |
| MES | manganese | 7439-96-5 | SOIL S1, S2, S3 | 1010E | mg/kg |
| MES | nickel | 7440-02-0 | SOIL S1, S2, S3 | 12.8 | mg/kg |
| MES | sodium | 7440-23-5 | SOIL S2, S3 | 114B | mg/kg |
| MES | vanadium | 7440-62-2 | SOIL S1, S2, S3 | 12.3 | mg/kg |
| MES | zinc | 7440-66-6 | SOIL S1, S2, S3 | 30.6 | mg/kg |
| | | | | | |
| | | | | | |
| SOL | 1,2-dichloroethane | 107-06-2 | surface water SW1, SW2 | 2J | ug/l |
| SOL | trichloroethene | 79-01-6 | surface water SW1 | 4J | ug/l |
| SOL | 1,1,2-trichloroethane | 79-00-5 | surface water SW1 | 2J | ug/l |
| SOL | 2-hexanone | 591-78-6 | surface water SW1 | 7J | ug/l |
| | | | | | |
| SOL | 1,1,2,2-tetrachloroethane | 79-34-5 | surface water SW1 | 3J | ug/l |
| | | | | | |
| MES | aluminum | 7429-90-5 | surface water SW1, SW2, SW5, SW8 | 270 | mg/l |
| MES | barium | 7440-39-3 | surface water SW1, SW2, SW5 | 26.7B | mg/l |
| MES | calcium | 7440-70-2 | surface water SW1, SW2, SW5, SW8 | 58300 | mg/l |
| MES | copper | 7440-50-8 | surface water SW1, SW2, SW5 | 15.B | mg/l |
| MES | iron | 7439-89-6 | surface water SW1, SW2, SW5 | 130 | mg/l |
| MES | magnesium | 7439-95-4 | surface water SW1, SW2, SW5, SW8 | 34400 | mg/l |
| MES | manganese | 7439-96-5 | surface water SW1, SW2, SW5 | 70.9 | mg/l |
| MES | potassium | 7440-09-7 | surface water SW1, SW2, SW5 | 2830B | mg/l |
| MES | sodium | 7440-23-5 | surface water SW1, SW2, SW5, SW8 | 8410E | mg/l |
| MES | zinc | 7440-66-6 | surface water SW1 | 29.6* | mg/l |

EPA

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

I. IDENTIFICATION
01 STATE: MN
02 SITE NUMBER: D980609737

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ■ A. GROUNDWATER CONTAMINATION — 02 ■ OBSERVED (DATE: 5-5-88) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 1,853
04 NARRATIVE DESCRIPTION
Due to the fact that the mine lake runs from the ground surface to approx. 230' down, it has the potential to contaminate the taconite aquifer which is used for drinking water by the town of Keewatin, population 1700.

01 ■ B. SURFACE WATER CONTAMINATION — 02 ■ OBSERVED (DATE: 5-4-88) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 0
04 NARRATIVE DESCRIPTION
The St. Paul mine lake has no effluent streams leading away from it therefore contaminants which are detected in the lake are contained and have no potential to contaminate other surface water bodies. The St. Paul mine lake is not used for drinking water.

01 ☐ C. CONTAMINATION OF AIR — 02 ☐ OBSERVED (DATE: ) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 0
04 NARRATIVE DESCRIPTION
Site entry equipment did not detect levels above background concentrations at the site.

01 ☐ D. FIRE/EXPLOSIVE CONDITIONS — 02 ☐ OBSERVED (DATE: ) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 0
04 NARRATIVE DESCRIPTION
No fire/explosion hazard has been reported or observed at this site.

01 ■ E. DIRECT CONTACT — 02 ☐ OBSERVED (DATE: ) ■ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 1700
04 NARRATIVE DESCRIPTION
Fencing around the site is sporadic at best, children have been observed swimming in the mine lake and hikers were observed passing through the area of the site during the FIT inspection. The potential for direct contact therefore exists.

01 ■ F. CONTAMINATION OF SOIL — 02 ■ OBSERVED (DATE: 5-4-88) ☐ POTENTIAL ☐ ALLEGED
03 AREA POTENTIALLY AFFECTED: 80 (Acres)
04 NARRATIVE DESCRIPTION
TAL analytes have been detected in the soils close to the mine lake's shores.

01 ■ G. DRINKING WATER CONTAMINATION — 02 ■ OBSERVED (DATE: 5-5-88) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 1,853
04 NARRATIVE DESCRIPTION
The deep taconite aquifer has the potential to be contaminated by lateral movement of groundwater from the mine lake. Municipal well #2 is 1/4 mile east of the site. Groundwater flow direction is not known for certain. Pop. affected is approx. 1700.

01 ☐ H. WORKER EXPOSURE/INJURY — 02 ☐ OBSERVED (DATE: ) ☐ POTENTIAL ☐ ALLEGED
03 WORKERS POTENTIALLY AFFECTED: 0
04 NARRATIVE DESCRIPTION
No exposure or injuries have been documented at the site. The mine pit was last active in 1964.

01 ■ I. POPULATION EXPOSURE/INJURY — 02 ☐ OBSERVED (DATE: ) ■ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 1,853
04 NARRATIVE DESCRIPTION
The potential exists for the population to come in contact with the waste by direct contact (see "E" above).

EPA

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

I. IDENTIFICATION
01 STATE: MN
02 SITE NUMBER: D980609937

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 ■ J. DAMAGE TO FLORA — 02 ☐ OBSERVED (DATE _____) — ■ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION
No damage to flora has been reported or observed.

01 ■ K. DAMAGE TO FAUNA — 02 ☐ OBSERVED (DATE: _____) — ■ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION (Include name(s) of species)
No damage to fauna has been reported or observed. The potential does exist for animals that may use the mine lake as a source of drinking water.

01 ■ L. CONTAMINATION OF FOOD CHAIN — 02 ☐ OBSERVED (DATE: _____) — ■ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION
No documentation of food chain contamination has been made. The potential does exist that animals may come in contact with the waste by drinking the mine lake water or eating grasses and shrubs near the lake.

01 ■ M. UNSTABLE CONTAINMENT OF WASTES (Spills/Runoff/Standing liquids, Leaking drums) — 02 ☐ OBSERVED (DATE: _____) — ■ POTENTIAL — ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 1700 — 04 NARRATIVE DESCRIPTION
The waste is assumed to be in the lake water which is a closed basin. Spill contaminants should run off into the lake due to the slope along the lakes perimeter. Groundwater may be affected by lateral movement of water from the mine lake.

01 ☐ N. DAMAGE TO OFFSITE PROPERTY — 02 ☐ OBSERVED (DATE: _____) — ■ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION
Contaminants in the mine lake have the potential to migrate through the groundwater system and reach the municipal wells (see "A" previous page).

01 ☐ O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION
None. There is no runoff from the lake.

01 ☐ P. ILLEGAL/UNAUTHORIZED DUMPING — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION
None has been documented, however, due to easy access the potential for illegal dumping exists

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS
None DOCUMENTED OR REPORTED

III. TOTAL POPULATION POTENTIALLY AFFECTED: 1853

IV. COMMENTS
The area surrounding the St. Paul Mine site has been heavily mined in the same manner as the site, attributing contamination of groundwater to any one site may prove difficult. The St. Paul mine was originally mined to recover iron ore deposits; site is in Mesabi Iron Range.

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)
- E+E / FIT site inspection 5-4-88
- FIT Files

EPA FORM 2070-13 (7-81)

EPA

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

| I. IDENTIFICATION | |
|---|---|
| 01 STATE | 02 SITE NUMBER |
| MN | D980609937 |

## II. PERMIT INFORMATION

| 01 TYPE OF PERMIT ISSUED (Check all that apply) | 02 PERMIT NUMBER | 03 DATE ISSUED | 04 EXPIRATION DATE | 05 COMMENTS |
|---|---|---|---|---|
| ☐ A. NPDES | | | | |
| ☐ B. UIC | | | | |
| ☐ C. AIR | | | | |
| ☐ D. RCRA | | | | |
| ☐ E. RCRA INTERIM STATUS | | | | |
| ☐ F. SPCC PLAN | | | | |
| ☐ G. STATE (Specify) | | | | |
| ☐ H. LOCAL (Specify) | | | | |
| ☐ I. OTHER (Specify) | | | | |
| ■ J. NONE | | | | |

## III. SITE DESCRIPTION

| 01 STORAGE/DISPOSAL (Check all that apply) | 02 AMOUNT | 03 UNIT OF MEASURE |
|---|---|---|
| ☐ A. SURFACE IMPOUNDMENT | | |
| ☐ B. PILES | | |
| ☐ C. DRUMS, ABOVE GROUND | | |
| ☐ D. TANK, ABOVE GROUND | | |
| ☐ E. TANK, BELOW GROUND | | |
| ☐ F. LANDFILL | | |
| ☐ G. LANDFARM | | |
| ☐ H. OPEN DUMP | | |
| ■ I. OTHER unknown (Specify) | | |

04 TREATMENT (Check all that apply) NONE
- ☐ A. INCENERATION
- ☐ B. UNDERGROUND INJECTION
- ☐ C. CHEMICAL/PHYSICAL
- ☐ D. BIOLOGICAL
- ☐ E. WASTE OIL PROCESSING
- ☐ F. SOLVENT RECOVERY
- ☐ G. OTHER RECYCLING/RECOVERY
- H. OTHER _____ (Specify)

05 OTHER
- ☐ A. BUILDINGS ON SITE

NONE

06 AREA OF SITE
80 (Acres)

07 COMMENTS
According to Inland Steel, Present day mining operations use solvents and leaded greases during routine equipment maintenance, the assumption that similar products were used during early mining operations was made by Inland Steel. The possibility that these spent residues were left on site does exist.

## IV. CONTAINMENT

01 CONTAINMENT OF WASTES (Check one)

☐ A. ADEQUATE, SECURE ☐ B. MODERATE ■ C. INADEQUATE, POOR ☐ D. INSECURE, UNSOUND, DANGEROUS

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

The gedogy surrounding the mine lake ranges from glacial deposits to layers of slate to decomposed taconite and therefore the potential exists for contaminants in the lake to move laterally via groundwater from the site. No natural or artificial lining exists to control lateral movement from the lake.

## V. ACCESSIBILITY

01 WASTE EASILY ACCESSIBLE: ■ YES ☐ NO

02 COMMENTS Fencing around the site is not continuous, mine lake is used for swimming.

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

E+E / FIT site inspection 5-4-88
FIT Files

EPA

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

**I. IDENTIFICATION**

| 01 STATE | 02 SITE NUMBER |
|---|---|
| MN | D980609937 |

**II. DRINKING WATER SUPPLY**

| 01 TYPE OF DRINKING SUPPLY (Check as applicable) | SURFACE | WELL | 02 STATUS: ENDANGERED | AFFECTED | MONITORED | 03 DISTANCE TO SITE |
|---|---|---|---|---|---|---|
| COMMUNITY | A. ☐ | B. ■ | A. ☐ | B. ■ | C. ■ | A. 1/4 (mi) |
| NON-COMMUNITY | C. ☐ | D. ■ | D. ☐ | E. ☐ | F. ☐ | B. 1.5 (mi) |

**III. GROUNDWATER**

01 GROUNDWATER USE IN VICINITY (Check one)

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

02 POPULATION SERVED BY GROUND WATER 1,853

03 DISTANCE TO NEAREST DRINKING WATER WELL 1/4 (mi)

| 04 DEPTH TO GROUNDWATER | 05 DIRECTION OF GROUNDWATER FLOW | 06 DEPTH TO AQUIFER OF CONCERN | 07 POTENTIAL YIELD OF AQUIFER | 08 SOLE SOURCE AQUIFER |
|---|---|---|---|---|
| 174 (ft) | unknown | 122 (ft) | unknown (gpd) | ☐ YES ■ NO |

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

The nearest wells are the two municipal wells used by the town of Keewatin. The closest of these two wells is approximately 1/4 mile east-southeast of the site. The municipal wells are cased into the taconite aquifer at depths of 219' and 374'. The closest private well is approx. 1 1/2 miles southwest of the site. These private wells average 60' deep into sand + gravel

| 10 RECHARGE AREA | | 11 DISCHARGE AREA | |
|---|---|---|---|
| ■ YES ☐ NO | COMMENTS: mine lake may be a recharge for the taconite aquifer. | ■ YES ☐ NO | COMMENTS: may possibly be a discharge area |

**IV. SURFACE WATER**

01 SURFACE WATER USE (Check one)

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

02 AFFECTED/POTENTIALLY AFFECTED BODIES OF WATER

| NAME: | AFFECTED | DISTANCE TO SITE |
|---|---|---|
| Unnamed mine lake (St. Paul Mine site property) | ■ | on-site (mi) |
| | ☐ | (mi) |
| | ☐ | (mi) |

**V. DEMOGRAPHIC AND PROPERTY INFORMATION**

01 TOTAL POPULATION WITHIN

| ONE (1) MILE OF SITE | TWO (2) MILES OF SITE | THREE (3) MILES OF SITE |
|---|---|---|
| A. 1700 NO. OF PERSONS | B. 1794 NO. OF PERSONS | C. 1853 NO. OF PERSONS |

02 DISTANCE TO NEAREST POPULATION 1/4 (mi)

03 NUMBER OF BUILDINGS WITHIN TWO (2) MILES OF SITE 600

04 DISTANCE TO NEAREST OFF-SITE BUILDING 1/4 (mi)

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

The town of Keewatin (population 1700) is located southeast of the site as close as approximately one quarter mile from the site. The entire population of Keewatin is within one mile distance of the site. The population outside of Keewatin is very sparse. The area is or has been intensely mined. The town of Bennett located one mile due north of the site is essentially a ghost town following cessation of mining in the immediate area.

EPA

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

I. IDENTIFICATION

| 01 STATE | 02 SITE NUMBER |
|---|---|
| MN | D980609937 |

**VI. ENVIRONMENTAL INFORMATION**

01 PERMEABILITY OF UNSATURATED ZONE (Check one)

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

02 PERMEABILITY OF BEDROCK (Check one)

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

| 03 DEPTH TO BEDROCK | 04 DEPTH OF CONTAMINATED SOIL ZONE | 05 SOIL pH |
|---|---|---|
| 115 (ft) | unknown (ft) | unknown |

| 06 NET PRECIPITATION | 07 ONE YEAR 24 HOUR RAINFALL | 08 SLOPE: SITE SLOPE | DIRECTION OF SITE SLOPE | TERRAIN AVERAGE SLOPE |
|---|---|---|---|---|
| 1.58 (in) | 2.1 (in) | closed basin % | closed basin | closed basin % |

09 FLOOD POTENTIAL
SITE IS IN N/A YEAR FLOODPLAIN

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

11 DISTANCE TO WETLANDS (5 acre minimum)

| ESTUARINE | OTHER |
|---|---|
| A. >3 (mi) | B. >3 (mi) |

12 DISTANCE TO CRITICAL HABITAT (of endangered species)
>3 (mi)
ENDANGERED SPECIES: none

13 LAND USE IN VICINITY

DISTANCE TO:

| COMMERCIAL/INDUSTRIAL | RESIDENTIAL AREAS; NATIONAL/STATE PARKS, FORESTS, OR WILDLIFE RESERVES | AGRICULTURAL LANDS: PRIME AG LAND | AGRICULTURAL LANDS: AG LAND |
|---|---|---|---|
| A. 1/2 (mi) | B. 1/4 (mi) | C. (mi) | D. (mi) |

NONE

14 DESCRIPTION OF SITE IN RELATION TO SURROUNDING TOPOGRAPHY

See Appendix "A"

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

- E+E / FIT site inspection May 5, 1988
- FIT Files
- U.S.G.S Keewatin Quad topographic Map, 1952
- Town of Keewatin well logs

EPA FORM 2070-13 (7-81)

EPA

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

**I. IDENTIFICATION**

| 01 STATE | 02 SITE NUMBER |
|---|---|
| MN | D980609937 |

**II. SAMPLES TAKEN**

| SAMPLE TYPE | 01 NUMBER OF SAMPLES TAKEN | 02 SAMPLES SENT TO | 03 ESTIMATED DATE RESULTS AVAILABLE |
|---|---|---|---|
| GROUNDWATER | 3 | TCL Compounds - Enseco Corp./ERCO - Cambridge, MA<br>TAL Analytes - Central Regional lab - Chicago, IL | presently available |
| SURFACE WATER | 2 | TCL Compounds - Wan Technologies, Inc. - Atlanta, GA<br>TAL Analytes - Roy F. Weston, Inc. - Lionville, PA | presently available |
| WASTE | | | |
| AIR | | | |
| RUNOFF | | | |
| SPILL | | | |
| SOIL | 3 | TCL Compounds - Wan Technologies, Inc. - Atlanta, GA<br>TAL Analytes - Roy F. Weston, Inc. - Lionville, PA | presently available |
| VEGETATION | | | |
| OTHER | | | |

**III. FIELD MEASUREMENTS TAKEN**

| 01 TYPE | 02 COMMENTS |
|---|---|
| Combination $O_2$ meter and explosimeter | No readings detected above background levels |
| HNU 101 | No readings detected above background levels |
| Hydrogen Cyanide Monitor | No readings detected above background levels |
| Radiation Mini Alert | No readings detected above background levels |
| | |

**IV. PHOTOGRAPHS AND MAPS**

01 TYPE ■ GROUND ☐ AERIAL

02 IN CUSTODY OF E+E/FIT - Chicago (Name of organization or individual)

03 MAPS ■ YES ☐ NO

04 LOCATION OF MAPS E+E/FIT - Chicago

**V. OTHER FIELD DATA COLLECTED** (Provide narrative description)

None

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

E+E/FIT site inspection 5-4-88
FIT files

EPA FORM 2070-13 (7-81)

EPA

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

| I. IDENTIFICATION | |
|---|---|
| 01 STATE | 02 SITE NUMBER |
| MN | D980609937 |

| II. CURRENT OWNER(S) | | | PARENT COMPANY (if applicable) | | |
|---|---|---|---|---|---|
| 01 NAME: Inland Steel Mining Co. | 02 D+B NUMBER | | 08 NAME | 09 D+B NUMBER | |
| 03 STREET ADDRESS (P.O. Box, RFD #, etc.): P.O. Box 1 (U.S. 53 North) | 04 SIC CODE | | 10 STREET ADDRESS (P.O. Box, RFD #, etc.) | 11 SIC CODE | |
| 05 CITY: Virginia | 06 STATE: MN | 07 ZIP CODE: 55792 | 12 CITY | 13 STATE | 14 ZIP CODE |
| 01 NAME | 02 D+B NUMBER | | 08 NAME | 09 D+B NUMBER | |
| 03 STREET ADDRESS (P.O. Box, RFD #, etc.) | 04 SIC CODE | | 10 STREET ADDRESS (P.O. Box, RFD #, etc.) | 11 SIC CODE | |
| 05 CITY | 06 STATE | 07 ZIP CODE | 12 CITY | 13 STATE | 14 ZIP CODE |
| 01 NAME | 02 D+B NUMBER | | 08 NAME | 09 D+B NUMBER | |
| 03 STREET ADDRESS (P.O. Box, RFD #, etc.) | 04 SIC CODE | | 10 STREET ADDRESS (P.O. Box, RFD #, etc.) | 11 SIC CODE | |
| 05 CITY | 06 STATE | 07 ZIP CODE | 12 CITY | 13 STATE | 14 ZIP CODE |
| 01 NAME | 02 D+B NUMBER | | 08 NAME | 09 D+B NUMBER | |
| 03 STREET ADDRESS (P.O. Box, RFD #, etc.) | 04 SIC CODE | | 10 STREET ADDRESS (P.O. Box, RFD #, etc.) | 11 SIC CODE | |
| 05 CITY | 06 STATE | 07 ZIP CODE | 12 CITY | 13 STATE | 14 ZIP CODE |

| III. PREVIOUS OWNER(S) (List most recent first) | | | IV. REALTY OWNER(S) (if applicable; list most recent first) | | |
|---|---|---|---|---|---|
| 01 NAME: Pacific Isle Mining Co. | 02 D+B NUMBER | | 01 NAME | 02 D+B NUMBER | |
| 03 STREET ADDRESS (P.O. Box, RFD #, etc.): unknown | 04 SIC CODE | | 03 STREET ADDRESS (P.O. Box, RFD #, etc.) | 04 SIC CODE | |
| 05 CITY | 06 STATE | 07 ZIP CODE | 05 CITY | 06 STATE | 07 ZIP CODE |
| 01 NAME: Republic Steel Corp. and St. Paul-Day Mine | 02 D+B NUMBER | | 01 NAME | 02 D+B NUMBER | |
| 03 STREET ADDRESS (P.O. Box, RFD #, etc.): unknown | 04 SIC CODE | | 03 STREET ADDRESS (P.O. Box, RFD #, etc.) | 04 SIC CODE | |
| 05 CITY | 06 STATE | 07 ZIP CODE | 05 CITY | 06 STATE | 07 ZIP CODE |
| 01 NAME: Corrigan McKinney Steel Co. | 02 D+B NUMBER | | 01 NAME | 02 D+B NUMBER | |
| 03 STREET ADDRESS (P.O. Box, RFD #, etc.): unknown | 04 SIC CODE | | 03 STREET ADDRESS (P.O. Box, RFD #, etc.) | 04 SIC CODE | |
| 05 CITY | 06 STATE | 07 ZIP CODE | 05 CITY | 06 STATE | 07 ZIP CODE |

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

E+E/FIT Files
E+E/FIT site inspection 5-4-88

EPA

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

| I. IDENTIFICATION | |
|---|---|
| 01 STATE | 02 SITE NUMBER |
| MN | D980609937 |

## II. CURRENT OPERATOR (Provide if different from owner)

| 01 NAME | 02 D+B NUMBER |
|---|---|
| Same as owner | |

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

| 05 CITY | 06 STATE | 07 ZIP CODE |
|---|---|---|
| | | |

| 08 YEARS OF OPERATION | 09 NAME OF OWNER |
|---|---|
| | |

## OPERATOR'S PARENT COMPANY (If applicable)

| 10 NAME | 11 D+B NUMBER |
|---|---|
| | |

| 12 STREET ADDRESS (P.O. Box, RFD #, etc.) | 13 SIC CODE |
|---|---|
| | |

| 14 CITY | 15 STATE | 16 ZIP CODE |
|---|---|---|
| | | |

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

| 01 NAME | 02 D+B NUMBER |
|---|---|
| Same as owner | |

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

| 05 CITY | 06 STATE | 07 ZIP CODE |
|---|---|---|
| | | |

| 08 YEARS OF OPERATION | 09 NAME OF OWNER DURING THIS PERIOD |
|---|---|
| | |

| 01 NAME | 02 D+B NUMBER |
|---|---|
| | |

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

| 05 CITY | 06 STATE | 07 ZIP CODE |
|---|---|---|
| | | |

| 08 YEARS OF OPERATION | 09 NAME OF OWNER DURING THIS PERIOD |
|---|---|
| | |

| 01 NAME | 02 D+B NUMBER |
|---|---|
| | |

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

| 05 CITY | 06 STATE | 07 ZIP CODE |
|---|---|---|
| | | |

| 08 YEARS OF OPERATION | 09 NAME OF OWNER DURING THIS PERIOD |
|---|---|
| | |

## PREVIOUS OPERATORS' PARENT COMPANIES (If applicable)

| 10 NAME | 11 D+B NUMBER |
|---|---|
| | |

| 12 STREET ADDRESS (P.O. Box, RFD #, etc.) | 13 SIC CODE |
|---|---|
| | |

| 14 CITY | 15 STATE | 16 ZIP CODE |
|---|---|---|
| | | |

| 10 NAME | 11 D+B NUMBER |
|---|---|
| | |

| 12 STREET ADDRESS (P.O. Box, RFD #, etc.) | 13 SIC CODE |
|---|---|
| | |

| 14 CITY | 15 STATE | 16 ZIP CODE |
|---|---|---|
| | | |

| 10 NAME | 11 D+B NUMBER |
|---|---|
| | |

| 12 STREET ADDRESS (P.O. Box, RFD #, etc.) | 13 SIC CODE |
|---|---|
| | |

| 14 CITY | 15 STATE | 16 ZIP CODE |
|---|---|---|
| | | |

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

- E+E/FIT site inspection 5-4-88
- FIT files

EPA

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

| I. IDENTIFICATION | |
|---|---|
| 01 STATE | 02 SITE NUMBER |
| MN | D980609937 |

**II. ON-SITE GENERATOR** N/A

| 01 NAME | 02 D+B NUMBER |
|---|---|
| 03 STREET ADDRESS (P.O. Box, RFD #, etc.) | 04 SIC CODE |
| 05 CITY | 06 STATE / 07 ZIP CODE |

**III. OFF-SITE GENERATOR(S)** N/A

| 01 NAME | 02 D+B NUMBER | 01 NAME | 02 D+B NUMBER |
|---|---|---|---|
| 03 STREET ADDRESS (P.O. Box, RFD #, etc.) | 04 SIC CODE | 03 STREET ADDRESS (P.O. Box, RFD #, etc.) | 04 SIC CODE |
| 05 CITY | 06 STATE / 07 ZIP CODE | 05 CITY | 06 STATE / 07 ZIP CODE |
| 01 NAME | 02 D+B NUMBER | 01 NAME | 02 D+B NUMBER |
| 03 STREET ADDRESS (P.O. Box, RFD #, etc.) | 04 SIC CODE | 03 STREET ADDRESS (P.O. Box, RFD #, etc.) | 04 SIC CODE |
| 05 CITY | 06 STATE / 07 ZIP CODE | 05 CITY | 06 STATE / 07 ZIP CODE |

**IV. TRANSPORTER(S)** N/A

| 01 NAME | 02 D+B NUMBER | 01 NAME | 02 D+B NUMBER |
|---|---|---|---|
| 03 STREET ADDRESS (P.O. Box, RFD #, etc.) | 04 SIC CODE | 03 STREET ADDRESS (P.O. Box, RFD #, etc.) | 04 SIC CODE |
| 05 CITY | 06 STATE / 07 ZIP CODE | 05 CITY | 06 STATE / 07 ZIP CODE |
| 01 NAME | 02 D+B NUMBER | 01 NAME | 02 D+B NUMBER |
| 03 STREET ADDRESS (P.O. Box, RFD #, etc.) | 04 SIC CODE | 03 STREET ADDRESS (P.O. Box, RFD #, etc.) | 04 SIC CODE |
| 05 CITY | 06 STATE / 07 ZIP CODE | 05 CITY | 06 STATE / 07 ZIP CODE |

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

E+E / FIT site inspection 5-4-88
FIT files

EPA

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

| I. IDENTIFICATION | |
|---|---|
| 01 STATE | 02 SITE NUMBER |
| MN | D980609937 |

## II. PAST RESPONSE ACTIVITIES

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

EPA

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

| I. IDENTIFICATION | |
|---|---|
| 01 STATE | 02 SITE NUMBER |
| MN | D980609937 |

II PAST RESPONSE ACTIVITIES (Continued)

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

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

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

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

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

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

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

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

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

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

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

01 ☐ 3. OTHER REMEDIAL ACTIVITIES — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
NONE

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

E+E/FIT site inspection 5-4-88
FIT files

EPA

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

| I. IDENTIFICATION | |
|---|---|
| 01 STATE | 02 SITE NUMBER |
| MN | D980609937 |

**II. ENFORCEMENT INFORMATION**

01 PAST REGULATORY/ENFORCEMENT ACTION ☐ YES ■ NO

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

NONE

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

- E+E/FIT site inspection 5-4-88
- FIT files

# APPENDIX C

## U.S. EPA
## IMMEDIATE REMOVAL ACTION
## CHECKSHEET

Immediate Removal Action Check Sheet

| | High | Moderate | Low |
|---|---|---|---|
| **Fire and Explosion Hazard** | | | |
| Flammable Materials N/A | | | |
| Explosives N/A | | | |
| Incompatable Chemicals N/A | | | |
| **Direct Contact with Acutely Toxic Chemicals** | | | |
| Site Security #1 | | | ✓ |
| Leaking Drums or Tanks N/A | | | |
| Open Lagoons or Pits #2 | | | ✓ |
| Materials on Surface N/A | | | |
| Proximity of Population ~ 1/4 mile | | ✓ | |
| Evidence of Casual Site Use #3 | | ✓ | |
| **Contaminated Water Supply** | | | |
| Exceeds 10 Day Snarl N/A | | | |
| Gross Taste or Odors N/A | | | |
| Alternate Water Available #4 | | | ✓ |
| Potential Contamination #5 | | ✓ | |
| **Is the site abandoned, active, or inactive?** | | | |

**Comments:**

#1 Fencing around site is not continuous. Access to the lake is easily attained

#2 TCL compounds and TAL analytes have been detected in the open mine lake.

#3 Observations of children swimming in the mine lake have been made and hikers have also been observed around the site.

#4 All drinking water supplies in a 3-mile radius of the site are from groundwater, no surface water is used.

#5 Due to the depth of the mine lake the aquifer of concern has the potential to become contaminated.

# APPENDIX D

# FIT SITE PHOTOGRAPHS

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: INLAND STEEL MINING CO - ST. PAUL MINE PAGE 1 OF 9

U.S. EPA ID: MND980609932 TDD: F05-8502-033 PAN: FMN0163S2

DATE: > 5-4-86 TIME: > 12:02 DIRECTION OF PHOTOGRAPH: > WEST-NW PHOTOGRAPHED BY: > G. BREEN

WEATHER CONDITIONS: > SUNNY, CLEAR, ≈ 80° F SAMPLE ID (if applicable): >

DESCRIPTION: > PERSPECTIVE VIEW OF THE SITE. MINE LAKE WITH EXPOSED GLACIAL TILLS ABOVE AND ORE DEPOSITS IN BENCHED LAYERS ALONG THE NORTH SHORE.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: INLAND STEEL MINING CO. - ST. PAUL MINE PAGE 2 OF 9

U.S. EPA ID: MND980609937 TDD: F05-8802-033 PAN: FMN0163SA

DATE: > 5-4-88

TIME: > 12:15

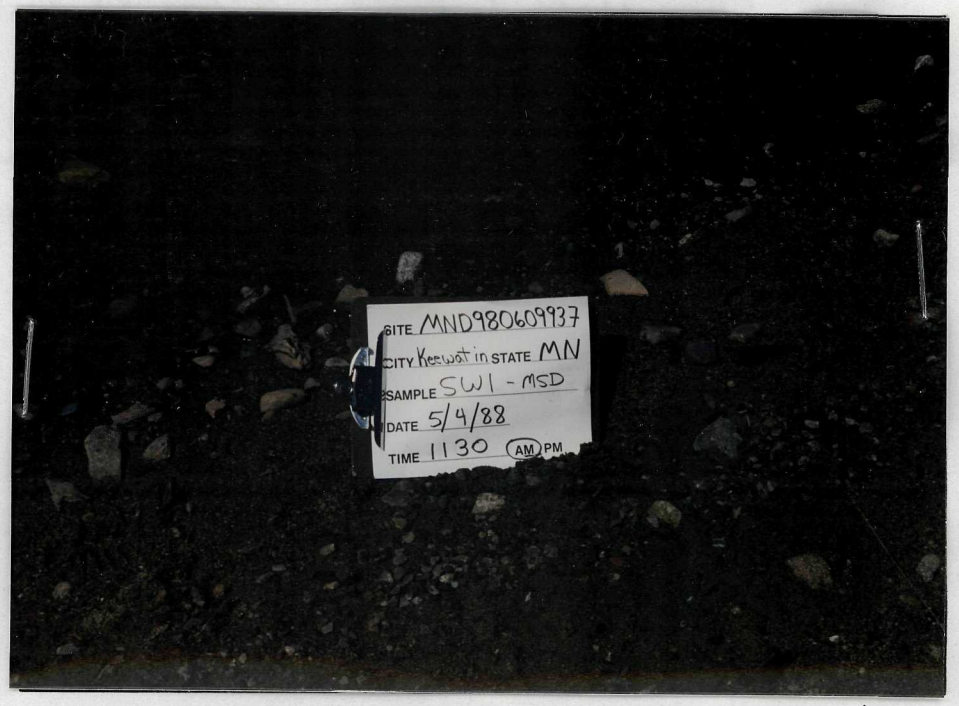
DIRECTION OF PHOTOGRAPH: > N-NW

WEATHER CONDITIONS: > SUNNY, CLEAR

> ≃ 80° F

PHOTOGRAPHED BY: > G. BREEN

SAMPLE ID (if applicable): > SW1 (MSD)




B.

DESCRIPTION: > CLOSE-UP VIEW OF SHORE, OUT FROM WHICH

> SW1 (MSD) WAS COLLECTED IN WATER APPROXIMATELY 1 FOOT IN DEPTH.

DATE: > 5-4-88

TIME: > 12:15

DIRECTION OF PHOTOGRAPH: > N-NW

WEATHER CONDITIONS: > SUNNY, CLEAR

> ≃ 80° F

PHOTOGRAPHED BY: > G. BREEN

SAMPLE ID (if applicable): > SW1 (MSD)

C.

DESCRIPTION: > PERSPECTIVE VIEW OF SHORE AND LAKE FROM

> WHERE SW1 (MSD) WAS COLLECTED.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: INLAND STEEL MINING CO. - ST. PAUL MINE PAGE 3 OF 9

U.S. EPA ID: MND980609937 TDD: F05-8802-033 PAN: FMN0163SA

DATE: > 5-4-88

TIME: > 12:25

DIRECTION OF PHOTOGRAPH: > W-SW

WEATHER CONDITIONS: > SUNNY, CLEAR

> ≃ 80° F

PHOTOGRAPHED BY: > G. BREEN

SAMPLE ID (if applicable): > SW2 & SW5 (DUPLICATE)

D.

DESCRIPTION: > CLOSE-UP VIEW OF SHORE, OUT FROM WHICH

> SW2 & SW5 WAS COLLECTED IN WATER APPROXIMATELY 1 FOOT IN DEPTH.

DATE: > 5-4-88

TIME: > 12:25

DIRECTION OF PHOTOGRAPH: > W-SW

WEATHER CONDITIONS: > SUNNY, CLEAR

> ≃ 80° F

PHOTOGRAPHED BY: > G. BREEN

SAMPLE ID (if applicable): > SW2 & SW5 (DUPLICATE)

E.

DESCRIPTION: > PERSPECTIVE VIEW OF SHORE AREA AND LAKE

> FROM WHICH SW2 & SW5 WAS COLLECTED.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: INLAND STEEL MINING CO. - ST. PAUL MINE



U.S. EPA ID: MND980609937 TDD: F05-8802-033 PAN: FMN0163SA

DATE: > 5-4-88

TIME: > 12:45

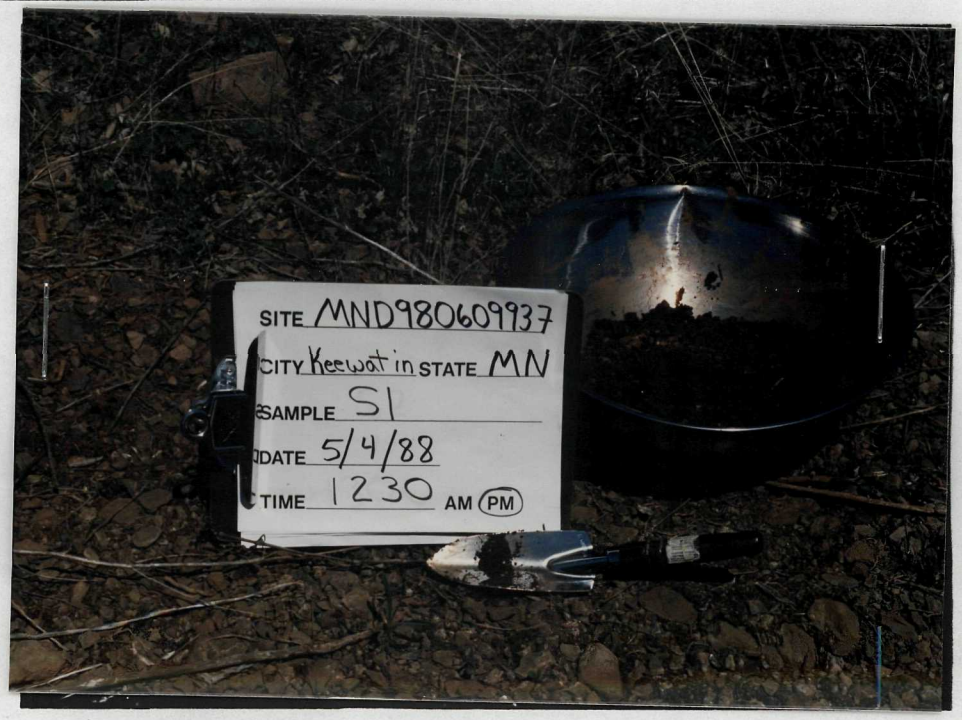
DIRECTION OF PHOTOGRAPH:
> NE

WEATHER CONDITIONS:
> SUNNY, CLEAR

> ≃ 80° F

PHOTOGRAPHED BY:
> G. BREEN

SAMPLE ID (if applicable):
> S1




F.

DESCRIPTION: > CLOSE-UP VIEW OF AREA FROM WHICH COMPOSITE

> SOIL SAMPLE S1 WAS COLLECTED.

DATE: > 5-4-88

TIME: > 12:45

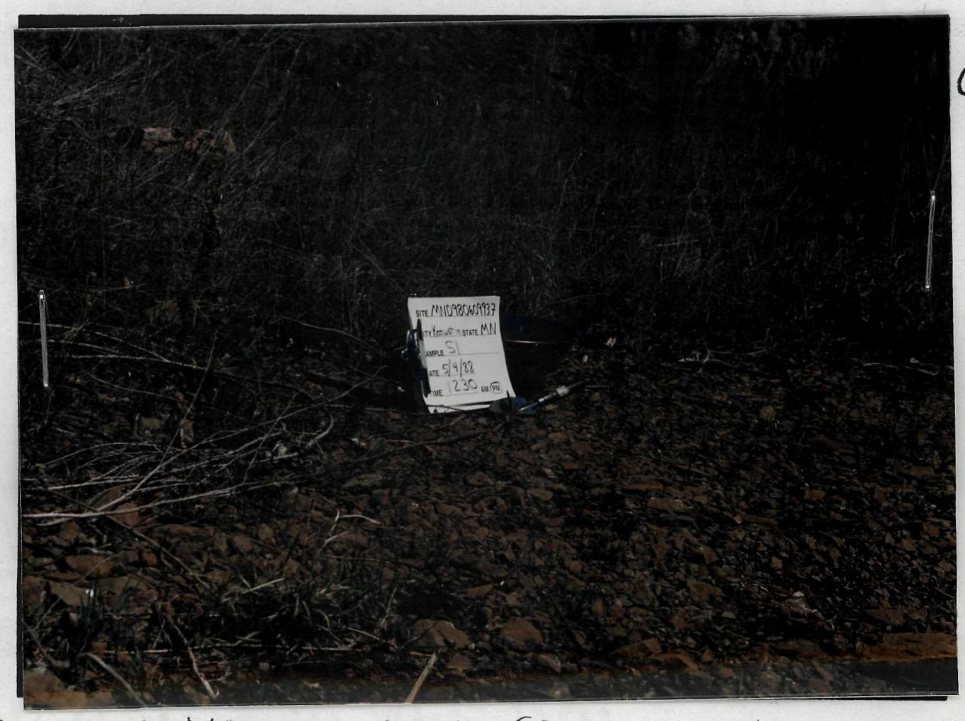
DIRECTION OF PHOTOGRAPH:
> NE

WEATHER CONDITIONS:
> SUNNY, CLEAR

> ≃ 80° F

PHOTOGRAPHED BY:
> G. BREEN

SAMPLE ID (if applicable):
> S1



G.

DESCRIPTION: > PERSPECTIVE VIEW OF AREA FROM WHICH COMPOSITE

> SOIL SAMPLE S1 WAS COLLECTED.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: INLAND STEEL MINING CO. - ST. PAUL MINE PAGE 5 OF 9

U.S. EPA ID: MND980609937 TDD: F05-8802-033 PAN: FMN0163SA

DATE: > 5-4-88

TIME: > 13:00

DIRECTION OF PHOTOGRAPH: > SE-S

WEATHER CONDITIONS: > SUNNY, CLEAR

> ≃ 80° F

PHOTOGRAPHED BY: > G. BREEN

SAMPLE ID (if applicable): > S2

H.

DESCRIPTION: > CLOSE-UP VIEW OF EROSION GULLY FROM

> WHICH COMPOSITE SOIL SAMPLE S2 WAS COLLECTED.

DATE: > 5-4-88

TIME: > 13:00

DIRECTION OF PHOTOGRAPH: > SE-S

WEATHER CONDITIONS: > SUNNY, CLEAR

> ≃ 80° F

PHOTOGRAPHED BY: > G. BREEN

SAMPLE ID (if applicable): > S2

I.

DESCRIPTION: > PERSPECTIVE VIEW OF EROSION GULLY FROM

> WHICH COMPOSITE SOIL SAMPLE S2 WAS COLLECTED.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: INLAND STEEL MINING CO. - ST. PAUL MINE PAGE 6 OF 9

U.S. EPA ID: MND980609937 TDD: F05-8802-033 PAN: FMN0163SA

DATE: > 5-4-88

TIME: > 13:20

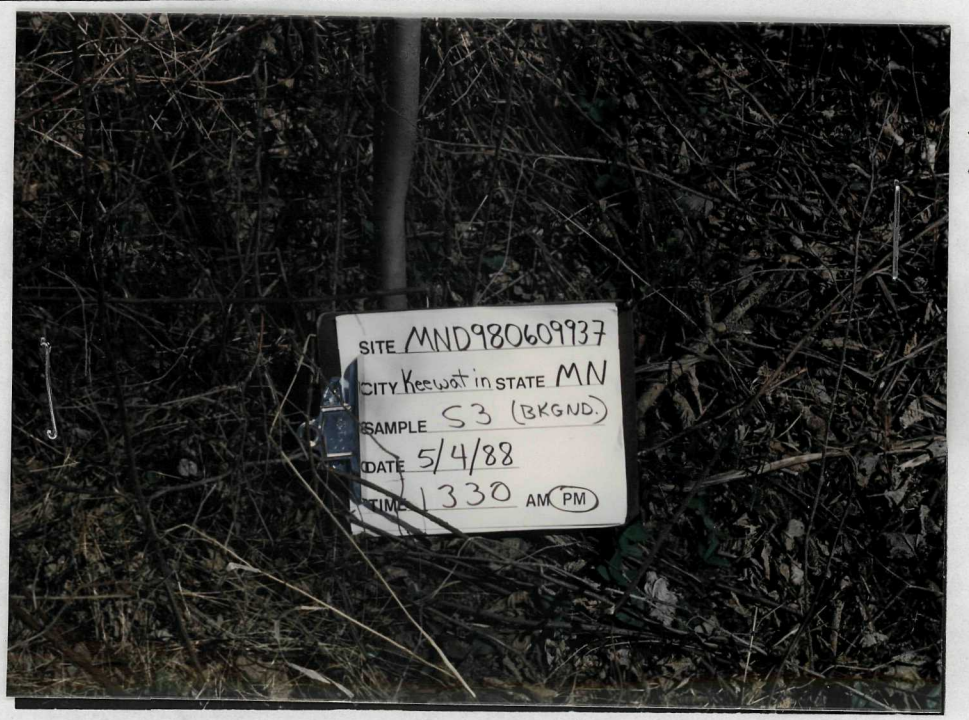
DIRECTION OF PHOTOGRAPH: > NE

WEATHER CONDITIONS: > SUNNY, CLEAR

> ≃ 80° F

PHOTOGRAPHED BY: > G. BREEN

SAMPLE ID (if applicable): > S3




J.

DESCRIPTION: > CLOSE-UP VIEW OF WOODED AREA AND LOCATION

> OF SOIL SAMPLE S3. THIS IS THE POTENTIAL BACKGROUND SAMPLE.

DATE: > 5-4-88

TIME: > 13:20

DIRECTION OF PHOTOGRAPH: > NE

WEATHER CONDITIONS: > SUNNY, CLEAR

> ≃ 80° F

PHOTOGRAPHED BY: > G. BREEN

SAMPLE ID (if applicable): > S3

K.

DESCRIPTION: > PERSPECTIVE VIEW OF WOODED AREA IN WHICH POTENTIAL

> BACKGROUND SOIL SAMPLE S3 WAS TAKEN.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: INLAND STEEL MINING CO. - ST. PAUL MINE



U.S. EPA ID: MND980609937 TDD: F05-8807-033 PAN: FMN0163SA

DATE: > 5-5-88

TIME: > 10:10

DIRECTION OF PHOTOGRAPH: > N

WEATHER CONDITIONS: > SUNNY, CLEAR

> ≃ 80° F

PHOTOGRAPHED BY: > G. BREEN

SAMPLE ID (if applicable): > RW1 (MSD)

L.

DESCRIPTION: > CLOSE-UP VIEW OF PUMPHOUSE OF KEEWATIN

> MUNICIPAL WELL #2 LOCATED NEAR THE CARLE MINE.

DATE: > 5-5-88

TIME: > 10:10

DIRECTION OF PHOTOGRAPH: > N

WEATHER CONDITIONS: > SUNNY, CLEAR

> ≃ 80° F

PHOTOGRAPHED BY: > G. BREEN

SAMPLE ID (if applicable): > RW1 (MSD)

M.

DESCRIPTION: > PERSPECTIVE VIEW OF PUMPHOUSE OF KEEWATIN

> MUNICIPAL WELL #2 LOCATED NEAR THE CARLE MINE.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: INLAND STEEL MINING CO. - ST. PAUL MINE



U.S. EPA ID: MND980609937 TDD: F05-8802-033 PAN: FMN0163SA

DATE: > 5-5-88

TIME: > 10:30

DIRECTION OF PHOTOGRAPH: > SOUTH

WEATHER CONDITIONS: > SUNNY, CLEAR

> ≃ 80° F

PHOTOGRAPHED BY: > G. BREEN

SAMPLE ID (if applicable): > RW2 & RW4 (DUPLICATE)

DESCRIPTION: > CLOSE-UP VIEW OF PUMPHOUSE OF KEEWATIN MUNICIPAL WELL #1 LOCATED NEAR DOWNTOWN KEEWATIN.

DATE: > 5-5-88

TIME: > 10:30

DIRECTION OF PHOTOGRAPH: > SOUTH

WEATHER CONDITIONS: > SUNNY, CLEAR

> ≃ 80° F

PHOTOGRAPHED BY: > G. BREEN

SAMPLE ID (if applicable): > RW2 & RW4 (DUPLICATE)

DESCRIPTION: > PERSPECTIVE VIEW OF PUMPHOUSE OF KEEWATIN MUNICIPAL WELL #1 LOCATED NEAR DOWNTOWN KEEWATIN.

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: INLAND STEEL MINING CO. - ST. PAUL MINE PAGE 9 OF 9

U.S. EPA ID: MND98 [illegible] TDD: [illegible] PAN: FMN0163SA

DATE: > 5-4-88

TIME: > 12:00

DIRECTION OF PHOTOGRAPH:
> NORTH

WEATHER CONDITIONS:
> SUNNY, CLEAR,
> ≈ 80°F

PHOTOGRAPHED BY:
> G. BREEN

SAMPLE ID (if applicable):
>

P

DESCRIPTION: > GROUP OF HIKERS TRAVERSING THE EASTERN PERIMETER
> OF THE SITE ALONG A WELL TROD TRAIL.

# APPENDIX E

## CHEMICAL ANALYSIS DATA
## OF
## FIT-COLLECTED SAMPLES

OneStep®
INDEX SYSTEM

Contents:

TAL ANALYTE/TCL COMPOUND DETECTION LIMITS 1

DRINKING WATER ORGANICS 2

DRINKING WATER INORGANICS 3

SOIL/SURFACE WATER ORGANICS 4

SOIL/SURFACE WATER INORGANICS 5

Cardinal®

1

Contract Laboratory Program
Target Compound List
Quantitation Limits

| COMPOUND | CAS # | WATER | SOIL SEDIMENT SLUDGE |
|---|---|---|---|
| Chloromethane | 74-87-3 | 10 ug/L | 10 ug/Kg |
| Bromomethane | 74-83-9 | 10 | 10 |
| Vinyl chloride | 75-01-4 | 10 | 10 |
| Chloroethane | 75-00-3 | 10 | 10 |
| Methylene chloride | 75-09-2 | 5 | 5 |
| Acetone | 67-64-1 | 10 | 5 |
| Carbon disulfide | 75-15-0 | 5 | 5 |
| 1,1-dichloroethene | 75-35-4 | 5 | 5 |
| 1,1-dichloroethane | 75-34-3 | 5 | 5 |
| 1,2-dichloroethene (total) | 540-59-0 | 5 | 5 |
| Chloroform | 67-66-3 | 5 | 5 |
| 1,2-dichloroethane | 107-06-2 | 5 | 5 |
| 2-butanone (MEK) | 78-93-3 | 10 | 10 |
| 1,1,1-trichloroethane | 71-55-6 | 5 | 5 |
| Carbon tetrachloride | 56-23-5 | 5 | 5 |
| Vinyl acetate | 108-05-4 | 10 | 10 |
| Bromodichloromethane | 75-27-4 | 5 | 5 |
| 1,2-dichloropropane | 78-87-5 | 5 | 5 |
| cis-1,3-dichloropropene | 10061-01-5 | 5 | 5 |
| Trichloroethene | 79-01-6 | 5 | 5 |
| Dibromochloromethane | 124-48-1 | 5 | 5 |
| 1,1,2-trichloroethane | 79-00-5 | 5 | 5 |
| Benzene | 71-43-2 | 5 | 5 |
| Trans-1,3-dichloropropene | 10061-02-6 | 5 | 5 |
| Bromoform | 75-25-2 | 5 | 5 |
| 4-Methyl-2-pentanone | 108-10-1 | 10 | 10 |
| 2-Hexanone | 591-78-6 | 10 | 10 |
| Tetrachloroethene | 127-18-4 | 5 | 5 |
| Tolene | 108-88-3 | 5 | 5 |
| 1,1,2,2-tetrachloroethane | 79-34-5 | 5 | 5 |
| Chlorobenzene | 108-90-7 | 5 | 5 |
| Ethyl benzene | 100-41-4 | 5 | 5 |
| Styrene | 100-42-5 | 5 | 5 |
| Xylenes (total) | 1330-20-7 | 5 | 5 |

Table A
Contract Laboratory Program
Target Compound List
Semivolatiles Quantitation Limits

| COMPOUND | CAS # | WATER | SOIL SEDIMENT SLUDGE |
|---|---|---|---|
| Phenol | 108-95-2 | 10 ug/L | 330 ug/Kg |
| bis(2-Chloroethyl) ether | 111-44-4 | 10 | 330 |
| 2-Chlorophenol | 95-57-8 | 10 | 330 |
| 1,3-Dichlorobenzene | 541-73-1 | 10 | 330 |
| 1,4-Dichlorobenzene | 106-46-7 | 10 | 330 |
| Benzyl Alcohol | 100-51-6 | 10 | 330 |
| 1,2-Dichlorobenzene | 95-50-1 | 10 | 330 |
| 2-Methylphenol | 95-48-7 | 10 | 330 |
| bis(2-Chloroisopropyl) ether | 108-60-1 | 10 | 330 |
| 4-Methylphenol | 106-44-5 | 10 | 330 |
| N-Nitroso-di-n-dipropylamine | 621-64-7 | 10 | 330 |
| Hexachloroethane | 67-72-1 | 10 | 330 |
| Nitrobenzene | 98-95-3 | 10 | 330 |
| Isophorone | 78-59-1 | 10 | 330 |
| 2-Nitrophenol | 88-75-5 | 10 | 330 |
| 2,4-Dimethylphenol | 105-67-9 | 10 | 330 |
| Benzoic Acid | 65-85-0 | 50 | 1600 |
| bis(2-Chloroethoxy) methane | 111-91-1 | 10 | 330 |
| 2,4-Dichlorophenol | 120-83-2 | 10 | 330 |
| 1,2,4-Trichlorobenzene | 120-82-1 | 10 | 330 |
| Naphthalene | 91-20-3 | 10 | 330 |
| 4-Chloroaniline | 106-47-8 | 10 | 330 |
| Hexachlorobutadiene | 87-68-3 | 10 | 300 |
| 4-Chloro-3-methylphenol | 59-50-7 | 10 | 330 |
| 2-Methylnaphthalene | 91-57-6 | 10 | 330 |
| Hexachlorocyclopentadiene | 77-47-4 | 10 | 330 |
| 2,4,6-Trichlorophenol | 88-06-2 | 10 | 330 |
| 2,4,5-Trichlorophenol | 95-95-4 | 50 | 1600 |
| 2-Chloronaphthalene | 91-58-7 | 10 | 330 |
| 2-Nitroaniline | 88-74-4 | 50 | 1600 |
| Dimethylphthalate | 131-11-3 | 10 | 330 |
| Acenaphthylene | 208-96-8 | 10 | 330 |
| 2,6-Dinitrotoluene | 606-20-2 | 10 | 330 |
| 3-Nitroaniline | 99-09-2 | 50 | 1600 |
| Acenaphthene | 83-32-9 | 10 | 330 |
| 2,4-Dinitrophenol | 51-28-5 | 50 | 1600 |
| 4-Nitrophenol | 100-02-7 | 50 | 1600 |
| Dibenzofuran | 132-64-9 | 10 | 330 |
| 2,4-Dinitrotoluene | 121-14-2 | 10 | 330 |
| Diethylphthalate | 84-66-2 | 10 | 330 |
| 4-Chlorophenyl-phenyl ether | 7005-72-3 | 10 | 330 |

Table A
Contract Laboratory Program
Target Compound List
Semivolatiles Quantitation Limits

| COMPOUND | CAS # | WATER | SOIL SLUDGE SEDIMENT |
|---|---|---|---|
| Fluorene | 86-73-7 | 10 ug/L | 330 ug/Kg |
| 4-Nitroaniline | 100-01-6 | 50 | 1600 |
| 4,6-Dinitro-2-methylphenol | 534-52-1 | 50 | 1600 |
| N-nitrosodiphenylamine | 86-30-6 | 10 | 330 |
| 4-Bromophenyl-phenylether | 101-55-3 | 10 | 330 |
| Hexachlorobenzene | 118-74-1 | 10 | 330 |
| Pentachlorophenol | 87-86-5 | 50 | 1600 |
| Phenanthrene | 85-01-8 | 10 | 330 |
| Anthracene | 120-12-7 | 10 | 330 |
| Di-n-butylphthalate | 84-74-2 | 10 | 330 |
| Fluoranthene | 206-44-0 | 10 | 330 |
| Pyrene | 129-00-0 | 10 | 330 |
| Butylbenzylphthalate | 85-68-7 | 10 | 330 |
| 3,3'-Dichlorobenzidine | 91-94-1 | 20 | 660 |
| Benzo(a)anthracene | 56-55-3 | 10 | 330 |
| Chrysene | 218-01-9 | 10 | 330 |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | 10 | 330 |
| Di-n-octylphthalate | 117-84-0 | 10 | 330 |
| Benzo(b)fluoranthene | 205-99-2 | 10 | 330 |
| Benzo(k)fluoranthene | 207-08-9 | 10 | 330 |
| Benzo(a)pyrene | 50-32-8 | 10 | 330 |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | 10 | 330 |
| Dibenz(a,h)anthracene | 53-70-3 | 10 | 330 |
| Benzo(g,h,i)perylene | 191-24-2 | 10 | 330 |

Table A
Contract Laboratory Program
Target Compound List
Pesticide and PCB Quantitation Limits

| COMPOUND | CAS # | WATER | SOIL SEDIMENT SLUDGE |
|---|---|---|---|
| alpha-BHC | 319-84-6 | 0.05 ug/L | 8 ug/Kg |
| beta-BHC | 319-85-7 | 0.05 | 8 |
| delta-BHC | 319-86-8 | 0.05 | 8 |
| gamma-BHC (Lindane) | 58-89-9 | 0.05 | 8 |
| Heptachlor | 76-44-8 | 0.05 | 8 |
| Aldrin | 309-00-2 | 0.05 | 8 |
| Heptachlor epoxide | 1024-57-3 | 0.05 | 8 |
| Endosulfan I | 959-98-8 | 0.05 | 8 |
| Dieldrin | 60-57-1 | 0.10 | 16 |
| 4,4'-DDE | 72-55-9 | 0.10 | 16 |
| Endrin | 72-20-8 | 0.10 | 16 |
| Endosulfan II | 33213-65-9 | 0.10 | 16 |
| 4,4'-DDD | 72-54-8 | 0.10 | 16 |
| Endosulfan sulfate | 1031-07-8 | 0.10 | 16 |
| 4,4'-DDT | 50-29-3 | 0.10 | 16 |
| Methoxychlor (Mariate) | 72-43-5 | 0.5 | 80 |
| Endrin ketone | 53494-70-5 | 0.10 | 16 |
| alpha-Chlordane | 5103-71-9 | 0.5 | 80 |
| gamma-chlordane | 5103-74-2 | 0.5 | 80 |
| Toxaphene | 8001-35-2 | 1.0 | 160 |
| AROCLOR-1016 | 12674-11-2 | 0.5 | 80 |
| AROCLOR-1221 | 11104-28-2 | 0.5 | 80 |
| AROCLOR-1232 | 11141-16-5 | 0.5 | 80 |
| AROCLOR-1242 | 53469-21-9 | 0.5 | 80 |
| AROCLOR-1248 | 12672-29-6 | 0.5 | 80 |
| AROCLOR-1254 | 11097-69-1 | 1.0 | 160 |
| AROCLOR-1260 | 11096-82-5 | 1.0 | 160 |

Table A
Contract Laboratory Program
Target Analyte List
Inorganic Quantitation Limits

| COMPOUND | PROCEDURE | SOIL WATER | SEDIMENT SLUDGE |
|---|---|---|---|
| Aluminum | ICP | 200 ug/L | 40 mg/Kg |
| Antimony | Furnace | 60 | 2.4 |
| Arsenic | Furnace | 10 | 2 |
| Barium | ICP | 200 | 40 |
| Beryllium | ICP | 5 | 1 |
| Cadmium | ICP | 5 | 1 |
| Calcium | ICP | 5000 | 1000 |
| Chromium | ICP | 10 | 2 |
| Cobalt | ICP | 50 | 10 |
| Copper | ICP | 25 | 5 |
| Iron | Icp | 100 | 20 |
| Lead | Furnace | 5 | 1 |
| Magnesium | ICP | 5000 | 1000 |
| Manganese | ICP | 15 | 3 |
| Mercury | Cold Vapor | 0.2 | 0.008 |
| Nickel | ICP | 40 | 8 |
| Potassium | ICP | 5000 | 1000 |
| Selenium | Furnace | 5 | 1 |
| Silver | ICP | 10 | 2 |
| Sodium | ICP | 5000 | 1000 |
| Thallium | Furnace | 10 | 2 |
| Vanadium | ICP | 50 | 10 |
| Zinc | ICP | 20 | 4 |
| Cyanide | Color | 10 | 2 |

TABLE B
CENTRAL REGIONAL LABORATORY
VOLATILE DETECTION LIMITS

| PARAMETER | CAS # | DETECTION LIMIt IN REAGENT WATER |
|---|---|---|
| Benzene | 71-43-2 | 1.5 ug/L |
| Bromodichloromethane | 75-27-4 | 1.5 |
| Bromoform | 75-25-2 | 1.5 |
| Bromomethane | 74-83-9 | 10 |
| Carbon tetrachloride | 56-23-5 | 1.5 |
| Chlorobenzene | 108-90-7 | 1.5 |
| Chloroethane | 75-00-3 | 1.5 |
| 2-Chloroethyl vinyl ether | 110-75-8 | 1.5 |
| Chloroform | 67-66-3 | 1.5 |
| Chloromethane | 74-87-3 | 10 |
| Dibromochloromethane | 124-48-1 | 1.5 |
| 1,1-dichloroethane | 75-34-3 | 1.5 |
| 1,2-dichloroethane | 107-06-2 | 1.5 |
| 1,1-dichloroethene | 75-35-4 | 1.5 |
| trans-1,2-dichloroethene | 156-60-5 | 1.5 |
| 1,2-dichloropropane | 78-87-5 | 1.5 |
| cis-1,3-dichloropropene | 10061-01-5 | 2 |
| trans-1,3-dichloropropene | 10061-02-6 | 1 |
| Ethyl benzene | 100-41-4 | 1.5 |
| Methylene chloride* | 75-09-2 | 1 |
| 1,1,2,2-tetrachloroethane | 79-34-5 | 1.5 |
| Tetrachloroethene | 127-18-4 | 1.5 |
| Toluene* | 108-88-3 | 1.5 |
| 1,1,1-trichloroethane | 71-55-6 | 1.5 |
| 1,1,2-trichloroethane | 79-00-5 | 1.5 |
| Trichloroethene | 79-01-6 | 1.5 |
| Vinyl chloride | 75-01-4 | 10 |
| Acrolein | 107-02-8 | 100 |
| Acetone* | 67-64-1 | 75 |
| Acrylonitrile | 107-13-1 | 50 |
| Carbon disulfide | 75-15-0 | 3 |
| 2-butanone | 78-93-3 | (50) |
| Vinyl acetate | 108-05-4 | 15 |
| 4-Methyl-2-Pentanone | 108-10-1 | (3) |
| 2-Hexanone | 519-78-6 | (50) |
| Styrene | 100-42-5 | 1 |
| m-xylene | 108-38-3 | 2 |
| o-xylene** | 95-47-6 | |
| p-xylene** | 106-42-3 | 2.5** |
| Total Xylene | 1330-02-7 | |

* Common Laboratory Solvents.
Blank Limit is 5X Method Detection Limit.
( ) Values in parentheses are estimates.
Actual values are being determined at this time.
** The o-xylene and p-xylene are reported as a total of the two.

TABLE B (cont.)
CRL
SEMIVOLATILE DETECTION LIMITS

| PARAMETER | CAS # | DETECTION LIMIT | BLANK LIMIT |
|---|---|---|---|
| Aniline | 62-53-3 | 1.5 ug/L | 3 ug/L |
| Bis(2-chloroethyl)ether | 111-44-4 | 1.5 | 3 |
| Phenol | 108-95-2 | 2 | 4 |
| 2-Chlorophenol | 95-57-8 | 2 | 5 |
| 1,3-Dichlorobenzene | 541-73-1 | 2 | 4 |
| 1,4-Dichlorobenzene | 106-46-7 | 2 | 4 |
| 1,2-Dichlorobenzene | 95-50-1 | 2.5 | 5 |
| Benzyl alcohol | 100-51-6 | 2 | 5 |
| Bis(2-chloroisopropyl) ether | 39638-32-9 | 2.5 | 5 |
| 2-Methylphenol | 95-48-7 | 1 | 2 |
| Hexdachloroethane | 67-72-1 | 2 | 4 |
| N-nitrosodipropylamine | 621-64-7 | 1.5 | 3 |
| Nitrobenzene | 98-95-3 | 2.5 | 5 |
| 4-Methylphenol | 106-44-5 | 1 | 2 |
| Isophorone | 78-59-1 | 2.5 | 5 |
| 2-Nitrophenol | 88-75-5 | 2 | 4 |
| 2,4-Dimethylphenol | 105-67-9 | 2 | 4 |
| Bis(2-chloroethoxy)methane | 111-91-1 | 2.5 | 5 |
| 2,4-Dichlorophenol | 120-83-2 | 2 | 4 |
| 1,2,4-Trichlorobenzene | 120-82-1 | 2 | 4 |
| Naphthalene | 91-20-3 | 2 | 4 |
| 4-Chloroaniline | 106-47-8 | 2 | 4 |
| Hexachlorobutadiene | 87-68-3 | 2.5 | 5 |
| Benzoic acid | 65-85-0 | (30) | (60) |
| 2-Methylnapthalene | 91-57-6 | 2 | 4 |
| 4-Chloro-3-methylphenol | 59-50-7 | 1.5 | 3 |
| Hexachlorocyclopentadiene | 77-47-4 | 2 | 4 |
| 2,4,6-Trichlorophenol | 88-06-2 | 1.5 | 3 |
| 2,4,5-Trichlorophenol | 95-95-4 | 1.5 | 3 |
| 2-Chloronapthalene | 91-58-7 | 1.5 | 3 |
| Acenapthylene | 208-96-8 | 1.5 | 3 |
| Dimethyl phthalate | 131-11-3 | 1.5 | 3 |
| 2,6-Dinitrotoluene | 606-20-2 | 1 | 2 |
| Acenaphthene | 83-32-9 | 1.5 | 3 |
| 3-Nitroaniline | 99-09-2 | 2.5 | 5 |
| Dibenzofuran | 132-64-9 | 1 | 2 |
| 2,4-Dinitrophenol | 51-28-5 | (15) | (30) |
| 2,4-Dinitrotoluene | 121-14-2 | 1 | 2 |
| cont. | | | |

TABLE B (Cont.)
CRL
SEMIVOLATILE DETECTION LIMITS

| PARAMETER | CAS # | DETECTION LIMIT | BLANK (a) LIMIT |
|---|---|---|---|
| Fluorene | 86-73-7 | 1 ug/L | 2 ug/L |
| 4-Nitrophenol | 100-02-7 | 1.5 | 3 |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | 1 | 2 |
| Diethylphthalate | 84-66-2 | 1 | 2 |
| 4,6-dinitro-2-methylphenol | 534-52-1 | (15) | (30) |
| 1,2-Diphenylhydrazine | 122-66-7 | 1 | 2 |
| n-Nitrosodiphenylamine * | 86-30-6 | | |
| Diphenylamine * | 122-39-4 | 1.5 | 3 |
| 4-Nitroaniline | 100-01-6 | 3 | 6 |
| 4-Bromophenyl-phenylether | 101-55-3 | 1.5 | 3 |
| Hexachlorobenzene | 118-74-1 | 1.5 | 3 |
| Pentachlorophenol | 87-86-5 | 2 | 4 |
| Phenanthrene | 85-01-8 | 1 | 2 |
| Anthracene | 120-12-7 | 2.5 | 5 |
| Di-n-butylphthalate | 84-74-2 | 2 | 4 |
| Fluoranthene | 206-44-0 | 1.5 | 3 |
| Pyrene | 129-00-0 | 1.5 | 3 |
| Butylbenzylphthalate | 85-68-7 | 3.5 | 7 |
| Chrysene ** | 218-01-9 | | |
| Benzo(a)anthracene ** | 56-55-3 | 1.5 | 3 |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | 1 | 2 |
| Di-n-octyl phthalate | 117-84-0 | 1.5 | 3 |
| Benzo(b)fluoranthene *** | 205-99-2 | | |
| Benzo(k)fluoranthene *** | 207-08-9 | 1.5 | 3 |
| Benzo(a)pyrene | 50-32-8 | 2 | 4 |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | 3.5 | 7 |
| Dibenzo(a,h)anthracene | 53-70-3 | 2.5 | 5 |
| Benzo(g,h,i)perylene | 191-24-2 | 4 | 8 |
| 2-Nitroaniline | 88-74-4 | 1 | 2 |

cont. 9/87

* These two parameters are reported as a total.
** These two parameters are reported as a total.
*** These two parameters are reported as a total.
(a) If the blank limit is exceeded, the sample is reextracted and rerun.
( ) Values in parentheses are estimates.
The actual values are being determined at this time.

Note: Limits are for reagent water.

TABLE B (Cont.)
CRL
PESTICIDE AND PCB DETECTION LIMITS

| PARAMETER | CAS # | DETECTION LIMIT |
|---|---|---|
| Aldrin | 309-00-2 | 0.005 ug/L |
| alpha BHC | 319-84-6 | (0.010) |
| beta BHC | 319-85-7 | (0.005) |
| delta BHC | 319-86-8 | (0.005) |
| gama BHC (Lindane) | 58-89-9 | 0.005 |
| Chlordane | 57-74-8 | (0.020) |
| 4,4'-DDD | 72-54-8 | (0.020) |
| 4,4'-DDE | 72-55-9 | (0.005) |
| 4,4'-DDT | 50-29-3 | 0.020 |
| Dieldrin | 60-57-1 | 0.010 |
| Endosulfan I | 959-98-8 | 0.010 |
| Endosulfan II | 33213-65-9 | 0.010 |
| Endosulfan sulfate | 1031-07-8 | (0.10) |
| Endrin | 72-20-8 | 0.010 |
| Endrin aldehyde | 7421-93-4 | (0.030) |
| Endrin ketone | 53494-70-5 | (0.030) |
| Heptachlor | 76-44-8 | 0.030 |
| Heptachlor epoxide | 1024-57-3 | 0.005 |
| 4,4'-Methoxychlor | 72-43-5 | 0.020 |
| Toxaphene | 8001-35-2 | (0.25) |
| PCB-1242 | 53469-21-9 | (0.10) |
| PCB-1248 | 12672-29-6 | (0.10) |
| PCB-1254 | 11097-69-1 | (0.10) |
| PCB-1260 | 11096-82-5 | (0.10) |

( ) Values in parentheses are estimates.
Actual values are being determined at this time.

Note: Limits are for reagent water.

TABLE B (Cont.)
CRL
INORGANIC DETECTION LIMITS

JANUARY 1986

| COMPOUND | PROCEDURE | DETECTION LIMITS | RANGE | UNITS |
|---|---|---|---|---|
| Aluminum | ICP | 80 | 80 to 1,000,000 | ug/L |
| Antimony | Furnace | 2 | 2 to 30 | ug/L |
| Arsenic | Furnace | 2 | 2 to 30 | ug/L |
| Barium | ICP | 6 | 6 to 20,000 | ug/L |
| Beryllium | ICP | 1 | 1 to 20,000 | ug/L |
| Boron | ICP | 80 | 80 to 20,000 | ug/L |
| Cadmium | ICP | 10 | 10 to 20,000 | ug/L |
| Cadmium | Furnace | 0.2 | 0.2 to 2 | ug/L |
| calcium | ICP | 0.5 | 0.5 to 1,000 | mg/L |
| Chromium | ICP | 8 | 8 to 20,000 | ug/L |
| Cobalt | ICP | 6 | 6 to 20,000 | ug/L |
| Copper | ICP | 6 | 6 to 20,000 | ug/L |
| iron | ICP | 80 | 80 to 1,000,000 | ug/L |
| Lead | Furnace | 2 | 2 to 30 | ug/L |
| Lead | ICP | 70 | 70 to 20,000 | ug/L |
| Lithium | ICP | 10 | 10 to 20,000 | ug/L |
| Magnesium | ICP | 0.1 | 0.1 to 200 | mg/L |
| Maganese | ICP | 5 | 5 to 20,000 | ug/L |
| Mercury | Cold vapor | 0.1 | 0.1 to 2 | ug/L |
| Molybdenum | ICP | 15 | 15 to 20,000 | ug/L |
| Nickel | ICP | 15 | 15 to 20,000 | ug/L |
| Potassium | ICP | 5 | 5 to 1,000 | mg/L |
| Selenium | Furnace | 2 | 2 to 30 | ug/L |
| Silver | ICP | 6 | 6 to 10,000 | ug/L |
| Sodium | ICP | 1 | 1 to 1,000 | mg/L |
| Strontium | ICP | 10 | 10 to 20,000 | ug/L |
| Sulfide | Titration | 1 | < 1 | mg/L |
| Sulfide | Color | 0.05 | < 1 | mg/L |
| Thallium | Furnace | 2 | 2 to 30 | ug/L |
| Titanium | ICP | 25 | 25 TO 20,000 | UG/L |
| Tin | ICP | 40 | 40 to 20,000 | ug/L |
| Vanadium | ICP | 5 | 5 to 20,000 | ug/L |
| Yttrium | ICP | 5 | 5 to 20,000 | ug/L |
| Zinc | ICP | 40 | 40 to 1,000,000 | ug/L |
| Cyanide | AA | 8 | 8 to 200 | ug/L |

Note: The above list may or may not contain compounds that are routinely analyzed at CRL for low level detection limits for drinking water.

See inorganic Routine Analytical Services for related CAS #.

TABLE C
SPECIAL ANALYTICAL SERVICES DRINKING WATER
VOLATILE QUANTITATION LIMITS

| PARAMETER | CAS # | DETECTION LIMIT IN REAGENT WATER |
|---|---|---|
| Benzene | 71-43-2 | 1.5 ug/L |
| Bromodichloromethane | 74-27-4 | 1.5 |
| Bromoform | 75-25-2 | 1.5 |
| Bromomethane | 74-83-9 | 10 |
| Carbon tetrachloride | 56-23-5 | 1.5 |
| Chlorobenzene | 108-90-7 | 1.5 |
| Chloroethane | 75-00-3 | 1.5 |
| 2-Chloroethyl vinyl ether | 110-75-8 | 1.5 |
| Chloroform | 67-66-3 | 1.5 |
| Chloromethane | 74-87-3 | 10 |
| Dibromochloromethane | 124-48-1 | 1.5 |
| 1,1-Dichloroethane | 75-34-3 | 1.5 |
| 1,2-Dichloroethane | 107-06-2 | 1.5 |
| 1,1-Dichloroethene | 75-35-4 | 1.5 |
| trans-1,2-Dichloroethene | 156-60-5 | 1.5 |
| 1,2-Dichloropropane | 78-87-5 | 1.5 |
| cis-1,3-Dichloropropene | 10061-01-5 | 2 |
| trans-1,3-Dichlopropropene | 10061-02-6 | 1 |
| Ethyl benzene | 100-41-4 | 1.5 |
| Methylene chloride * | 75-09-2 | 1 |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 1.5 |
| Tetrachloroethene | 127-18-4 | 1.5 |
| Toluene * | 108-88-3 | 1.5 |
| 1,1,1-Trichloroethane | 71-55-6 | 1.5 |
| 1,1,2-Trichloroethane | 79-00-5 | 1.5 |
| Trichloroethene | 79-01-6 | 1.5 |
| Vinyl chloride | 75-01-4 | 10 |
| Acrolein | 107-02-8 | 100 |
| Acetone * | 67-64-1 | 75 |
| Acrylonitrile | 107-13-1 | 50 |
| Carbon disulfide | 75-15-0 | 3 |
| 2-Butanone | 78-93-3 | (50) |
| Vinyl acetate | 108-05-4 | 15 |
| 4-Methyl-2-pentanone | 108-10-1 | (3) |
| 2-Hexanone | 519-78-6 | (50) |
| Styrene | 100-42-5 | 1 |
| m-Xylene | 108-38-3 | 2 |
| o-Xylene ** | 95-47-6 | |
| p-Xylene ** | 106-42-3 | 2.5 ** |
| Xylene (total) | 1330-02-7 | |

* Common laboratory solvents.
Blank limit is 5x method detection limit.
( ) Values in parentheses are estimates.
actual values are being determined at this time.
** The o-xylene and p-xylene are reported as a total of the two.

TABLE C (cont.)
SAS DRINKING WATER
SEMIVOLATILES QUANTITATION LIMITS

| PARAMETER | CAS # | DETECTION LIMIT |
|---|---|---|
| Aniline | 62-53-3 | 1.5 ug/l |
| Bis(2-chloroethyl)ether | 111-44-4 | 1.5 |
| Phenol | 108-95-2 | 2 |
| 2-Chlorophenol | 95-57-8 | 2 |
| 1,3-Dichlorobenzene | 541-73-1 | 2 |
| 1,4-Dichlorobenzene | 106-46-7 | 2 |
| 1,2-Dichlorobenzene | 95-50-1 | 2.5 |
| Benzyl alcohol | 100-51-6 | 2 |
| Bis(2-chloroisopropyl)ether | 39638-32-9 | 2.5 |
| 2-Methylphenol | 95-48-7 | 1 |
| Hexachloroethane | 67-72-1 | 2 |
| n-Nitrosodipropylamine | 621-64-7 | 1.5 |
| Nitrobenzene | 98-95-3 | 2.5 |
| 4-Methylphenol | 88-75-5 | 1 |
| Isophorone | 78-59-1 | 2.5 |
| 2-Nitrophenol | 88-75-5 | 2 |
| 2,4-Dimethylphenol | 105-67-9 | 2 |
| Bis(2-Chloroethoxy)methane | 111-91-1 | 2.5 |
| 2,4-Dichlorophenol | 120-83-2 | 2 |
| 1,2,4-Trichlorobenzene | 120-82-1 | 2 |
| Naphthalene | 91-20-3 | 2 |
| 4-Chloroaniline | 106-47-8 | 2 |
| Hexachlorobutadiene | 87-68-3 | 2.5 |
| Benzoic Acid | 65-85-0 | (30) |
| 2-Methylnapthalene | 91-57-6 | 2 |
| 4-Chloro-3-methylphenol | 59-50-7 | 1.5 |
| Hexachlorocyclopentadiene | 77-47-4 | 2 |
| 2,4,6-Trichlorophenol | 88-06-2 | 1.5 |
| 2,4,5-Trichlorophenol | 95-95-4 | 1.5 |
| 2-Chloronapthalene | 91-58-7 | 1.5 |
| Acenapthylhene | 208-96-8 | 1.5 |
| Dimethyl phthalate | 131-11-3 | 1.5 |
| 2,6-Dinitrotoluene | 606-20-2 | 1 |
| Acenaphthene | 83-32-9 | 1.5 |
| 3-Nitroaniline | 99-09-2 | 2.5 |
| Dibenzofuran | 132-64-9 | 1 |
| 2,4-Dinitrophenol | 51-28-5 | (15) |
| 2,4-Dinitrotoluene | 121-14-2 | 1 |

TABLE C (Cont.)
SAS DRINKING WATER
SEMIVOLATILE QUANTITATION LIMITS

| PARAMETER | CAS # | DETECTION LIMIT |
|---|---|---|
| Fluorene | 86-73-7 | 1 ug/L |
| 4-Nitrophenol | 100-02-7 | 1.5 |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | 1 |
| Diethyl phthalate | 84-66-2 | 1 |
| 4,6-Dinitro-2-methylphenol | 534-52-1 | (15) |
| 1,2-Diphenylhydrazine | 122-66-7 | 1 |
| n-Nitrosodiphenylamine * | 86-30-6 | |
| Diphenylamine * | 122-39-4 | 1.5 |
| 4-Nitroaniline | 100-01-6 | 3 |
| 4-Bromophenyl-phenylether | 101-55-3 | 1.5 |
| Hexachlorobenzene | 118-74-1 | 1.5 |
| Pentachlorophenol | 87-86-5 | 2 |
| Phenanthrene | 85-01-8 | 1 |
| Anthracene | 120-12-7 | 2.5 |
| di-n-Butyl phthalate | 84-74-2 | 2 |
| Fluoranthene | 206-44-0 | 1.5 |
| Pyrene | 129-00-0 | 1.5 |
| Butyl benzyl phthalate | 85-68-7 | 3.5 |
| Chrysene ** | 218-01-9 | |
| Benzo(A)Anthracene ** | 56-55-3 | 1.5 |
| bis(2-ethylhexyl)phthalate | 117-81-7 | 1 |
| di-n-Octyl phthalate | 117-84-0 | 1.5 |
| Benzo(b)fluoranthene *** | 205-99-2 | |
| Benzo(k)fluoranthene *** | 207-08-9 | 1.5 |
| Benzo(a)pyrene | 50-32-8 | 2 |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | 3.5 |
| Dibenzo(a,h)anthracene | 53-70-3 | 2.5 |
| Benzo(g,h,i)perylene | 191-24-2 | 4 |
| 2-Nitroaniline | 88-74-4 | 1 |

* These two parameters are reported as a total.
** These two parameters are reported as a total.
*** These two parameters are reported as a total.

( ) Values in parentheses are estimates.
The actual values are being determined at this time.

Note: Limits are for reagent water.

TABLE C (Cont.)
SAS DRINKING WATER
PESTICIDE AND PCB QUANTITATION LIMITS

| PARAMETER | CAS # | DETECTION LIMIT |
|---|---|---|
| Aldrin | 309-00-2 | 0.005 ug/L |
| alpha BHC | 319-84-6 | (0.010) |
| beta BHC | 319-85-7 | (0.005) |
| delta BHC | 319-86-8 | (0.005) |
| gamma BHC (Lindane) | 58-89-9 | 0.005 |
| Chlordane | 57-74-9 | (0.020) |
| 4,4'-DDD | 72-54-8 | (0.020) |
| 4,4'-DDE | 72-55-9 | (0.005) |
| 4,4'-DDT | 50-29-3 | 0.020 |
| Dieldrin | 60-57-1 | 0.010 |
| Endosulfan I | 959-98-8 | 0.010 |
| Endosulfan II | 33213-65-9 | 0.010 |
| Endosulfan sulfate | 1031-07-8 | (0.10) |
| Endrin | 72-20-8 | 0.010 |
| Endrin Aldehyde | 7421-93-4 | (0.030) |
| Endrin Ketone | 53494-70-5 | (0.030) |
| Heptachlor | 76-44-8 | 0.030 |
| Heptachlor Epoxide | 1024-57-3 | 0.005 |
| 4,4'-Methoxychlor | 72-43-5 | 0.020 |
| Toxaphene | 8001-35-2 | (0.25) |
| PCB-1242 | 53469-21-9 | (0.10) |
| PCB-1248 | 12672-29-6 | (0.10) |
| PCB-1254 | 11097-69-1 | (0.10) |
| PCB-1260 | 11096-82-5 | (0.10) |

( ) Values in parentheses are estimates.
Actual values are being determined at this time.

Note: Limits are for reagent water.

TABLE C (Cont.)
SAS DRINKING WATER
INORGANIC DETECTION LIMITS

JANUARY 1986

| PARAMETER | PROCEDURE | DETECTION LIMIT |
|---|---|---|
| Aluminum | ICP | 100 |
| Antimony | GFAA | 2 |
| Arsenic | GFAA | 2 |
| Barium | ICP | 50 |
| Beryllium | ICP | 5 |
| Cadmium | ICP | 10 |
| Cadmium | GFAA | 0.2 |
| Calcium | ICP | 1000 |
| Chromium | ICP | 10 |
| Cobalt | ICP | 10 |
| Copper | ICP | 10 |
| Iron | ICP | 100 |
| Lead | GFAA | 2 |
| Magnesium | ICP | 1000 |
| Manganese | ICP | 10 |
| Mercury | Cold Vapor | 0.2 |
| Nickel | ICP | 20 |
| Potassium | ICP | 2000 |
| Selenium | GFAA | 2 |
| Silver | ICP | 5 |
| Sodium | ICP | 1000 |
| Thallium | GFAA | 2 |
| Tin | ICP | 40 |
| Vanadium | ICP | 10 |
| Zinc | ICP | 20 |
| Cyanide | Colorimetric | 5.0 |

Note: The above list may or may not contain compounds that are routinely analyzed at CRL for low level detection limits for drinking water.

See inorganic Routine Analytical Services (RAS) for related CAS #.

Contract Laboratory Program
Target Compound List
Quantitation Limits

| COMPOUND | CAS # | WATER | SOIL SEDIMENT SLUDGE |
|---|---|---|---|
| Chloromethane | 74-87-3 | 10 ug/L | 10 ug/Kg |
| Bromomethane | 74-83-9 | 10 | 10 |
| Vinyl chloride | 75-01-4 | 10 | 10 |
| Chloroethane | 75-00-3 | 10 | 10 |
| Methylene chloride | 75-09-2 | 5 | 5 |
| Acetone | 67-64-1 | 10 | 5 |
| Carbon disulfide | 75-15-0 | 5 | 5 |
| 1,1-dichloroethene | 75-35-4 | 5 | 5 |
| 1,1-dichloroethane | 75-34-3 | 5 | 5 |
| 1,2-dichloroethene (total) | 540-59-0 | 5 | 5 |
| Chloroform | 67-66-3 | 5 | 5 |
| 1,2-dichloroethane | 107-06-2 | 5 | 5 |
| 2-butanone (MEK) | 78-93-3 | 10 | 10 |
| 1,1,1-trichloroethane | 71-55-6 | 5 | 5 |
| Carbon tetrachloride | 56-23-5 | 5 | 5 |
| Vinyl acetate | 108-05-4 | 10 | 10 |
| Bromodichloromethane | 75-27-4 | 5 | 5 |
| 1,2-dichloropropane | 78-87-5 | 5 | 5 |
| cis-1,3-dichloropropene | 10061-01-5 | 5 | 5 |
| Trichloroethene | 79-01-6 | 5 | 5 |
| Dibromochloromethane | 124-48-1 | 5 | 5 |
| 1,1,2-trichloroethane | 79-00-5 | 5 | 5 |
| Benzene | 71-43-2 | 5 | 5 |
| Trans-1,3-dichloropropene | 10061-02-6 | 5 | 5 |
| Bromoform | 75-25-2 | 5 | 5 |
| 4-Methyl-2-pentanone | 108-10-1 | 10 | 10 |
| 2-Hexanone | 591-78-6 | 10 | 10 |
| Tetrachloroethene | 127-18-4 | 5 | 5 |
| Tolene | 108-88-3 | 5 | 5 |
| 1,1,2,2-tetrachloroethane | 79-34-5 | 5 | 5 |
| Chlorobenzene | 108-90-7 | 5 | 5 |
| Ethyl benzene | 100-41-4 | 5 | 5 |
| Styrene | 100-42-5 | 5 | 5 |
| Xylenes (total) | 1330-20-7 | 5 | 5 |

# 2

ecology and environment, inc.
111 WEST JACKSON BLVD., CHICAGO, ILLINOIS 60604, TEL. 312-663-9415
International Specialists in the Environment

CRL Receipt Date 5/31 FIT Receipt Date 6/15 Review Completed 6/15/88

TO: G. Breen

FROM: Zena Gold-Kaufman ZGK

SUBJECT: Inland Steel

PAN: MN0163 (1 hour charged for review) Case # 9521/3758E

Sample Description

| Organics (VOA, ABN, Pest/PCB) | | Inorganics (Metals, Cyanide) | |
|---|---|---|---|
| # | Low Soil | # | Low Soil |
| | Low Water | | Low Water |
| 4 | Drinking Water | | Drinking Water |
| | Other | | Other |

Project Data Status _____ Completed!!

_____ Incomplete, awaiting organics and inorganics: low soil and water

FIT Data Review Findings:

Toluene detected in most samples

***Check Data Sheets for Transcription Errors***

_____ Compounds were detected in sample(s); see enclosed sheet.

Book No. 8 Page No. 64 Date Sampled 5/05/88

0759:2

recycled paper

A. Organics

1. Water Samples - ug/L or ppb (parts per billion)
2. Soils or Sediments - ug/kg or ppb (parts per billion)

B. Metals

1. Water Samples - ug/L or ppb (parts per billion)
2. Soils or Sediments - mg/kg or ppm (parts per million)

DEFINITION OF FOOTNOTES TO ANALYTICAL DATA

A. Organics

| NOTE | DEFINITION | INTERPRETATION |
|---|---|---|
| | Indicates compound was analyzed for but not detected. | Compound was not detected. |
| | Indicates an estimated value. | Compound value may be semi-quantitative. |
| U | Quantitation limit is estimated due to a Quality Control (QC) protocol. | Compound was not detected. |
| | This flag applies to pesticide results where the identification has been confirmed by GC/MS. Single component pesticides >10 ng/ul in the final extract shall be confirmed by GC/MS. | Compound was confirmed by mass spectroscopy |
| B | This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action. | Compound value may be semi-quantitative if it is <5x the blank concentration (<10x the blank concentrations for common lab artifacts: phthalates, methylene chloride acetone, toluene, 2-butanone). |
| E | This flag identifies compounds whose concentrations exceed the calibration range of the GC/MS instrument for that specific analysis. This flag will not apply to pesticides/PCBs analyzed by GC/EC methods. | Compound value may be semi-quantitative. |
| D | This flag identifies all compounds identified in an analysis at a secondary dilution factor. | Alerts data user to a possible change in the CRQL. |
| A | This flag indicates that a TIC is a suspected aldol-condensation product. | Alerts data user of a lab artifact. |
| R | Results are unusable due to a major violation of QC protocol. | Compound value is not usable. |

B. Metals

| NOTE | DEFINITION | INTERPRETATION |
|---|---|---|
| NEW | | |
| E | Estimated or not reported due to inteference. See laboratory narrative. | Compound or element was not detected or value may be semi-quantitative. |
| ) | Analysis by Method of Standard Additions. | Value may be quantitative. |
| W | Spike recoveries outside QC protocols which indicates a possible matrix problem. Data may be biased high or low. See spike results and laboratory narrative. | Value may be quantitative or semi-quantitative. |
| ) | Duplicate value outside QC protocols which indicates a possible matrix problem. | Value may be semi-quantitative. |
| * | Correlation coefficient for standard additions is less than 0.995. See review and laboratory narrative. | Data value may be biased. |
| | Value is real, but is above instrument DL and below CRDL. | Value may be quantitative or semi-quantitative. |
| | DL is estimated because of a QC protocol. DL is possibly above or below CRDL. | Compound or element was not detected. |
| | Value is above CRDL and is an estimated value because of a QC Protocol. | Value may be semi-quantitative. |
| | Compound was analyzed for but not detected. | Compound was not detected. |
| M | Duplicate injection precision not met. | Value may be semi-quantitative. |
| W | Post digestion spike for furnance AA analysis is out of control limits (35-115%), while sample absorbance is <50% of spike absorbance. | Value may be semi-quantitative. |

Other Symbols Used

Value not available due to insufficient data.
Value not calculated since chemical is not a carcinogen.
) Estimated value.

recd 6/15/88
44 pages



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE: 6/10/88

SUBJECT: Review of Region V CLP Data
Received for Review on 5-31-88

FROM: Curtis Ross, Director (5SCRL) Patrick J. Chunilla for
Central Regional Laboratory

TO: Data User: FIT

We have reviewed the data for the following case(s).

SITE NAME: INLAND STEEL, ST. PAUL MN SMO Case No. 9521SAS3758E

EPA Data Set No. SF5154 No. of Samples: 4 D.U./Activity Numbers Y905/C721ZZ

CRL No. 88FB19505, 506, D06, R01

SMO Traffic No. EX961, 963, 965, 966

CLP Laboratory: CAL Hrs. Required for Review: 9

Following are our findings:
four (4) low level water samples numbered as above were submitted.
All four drinking water samples were analyzed for Volatiles, Semi-Volatiles and Pesticides/PCBs using the SAS drinking water protocols.
The review narrative with qualifications follows:

[signature]
ESAT/WESTON
6/7/88

( ) Data are acceptable for use.
(✓) Data are acceptable for use with qualifications referenced above. See Data Qualifier sheets and Calibration Outlier forms for flags and additional comments.
( ) Data are preliminary - pending verification by Contractor Laboratory. See Case Summary above.
( ) Data are unacceptable.

cc: Carla Dempsey, CLP Quality Assurance Officer, Analytical Operations Branch
James Petty, Chief Quality Assurance Research, EMSL, Las Vegas

EI FORM 1320-6 (REV 3-76)

DATA QUALIFIERS

Contractor: Cal

Case 9521 SAS 3758E

Below is a summary of the out-of-control audits and the possible effect on the data for this case:

1) Holding Times -
A criteria of 7 days from sample collection to extraction and/or analysis was employed. All 4 samples in the VOA fraction exceeded the holding time by 1 day. All sample VOA Form I should be qualified as "Positive results estimated J", quantitation limits estimated "UJ".

2a) G.C M.S. Tuning
Tunings for both BFB and DFTPP were acceptable without expanded criteria and within the QC limits.

2b) G.C. Instrument Performance
All criteria for the first fraction were within acceptable limits with respect to retention times, linearity, degradation and %D, except Ind A and Ind B on 5/17/88 had all compounds with a high %D. Gamma-BHC and heptachlor in Ind A were within limits. Also Ind B on 5% SP-2401 had Endrin with a high %D.

3) Calibration -
The initial and continuing calibrations of the VOA and S.V. fractions were evaluated. Any outliers noted are recorded on the outlier forms included with this narrative. Estimated positive results are flagged "J". Unusable negative results are flagged "R". The Pest. calibration was acceptable with the %RSD within limits. The continuing calibrations, %D however was not acceptable as mentioned in 2b. above. Any positive results of quantitations should be estimated "J". It should be noted that the 10 ug/L VOA and the 20 ug/L Std S.V. used for the initial calibration were used for the continuing calibration. All samples were analyzed within the 12 hour QC limit of the initial calibration.

Reviewed by: [signature]

Phone: (312) 357-2907

DATA QUALIFIERS

Contractor: [illegible]

Case 9521 SAS 3758E.

Below is a summary of the out-of-control audits and the possible effect on the data for this case:

4) Method Blanks

VOA - there was 1 blank associated with the VOA fraction (V38k). V38k contained acetone. S.V. - there was 1 blank associated with the S.V. fraction (Method Blank) the blank contained bis (2-ethylhexyl) phthalate. Pest. - there was 1 blank associated with the pest fraction (Method Blank) there were no TCL compds reported.

The associated samples with each blank were evaluated for acetone in the VOA and bis (2-ethylhexyl) phthalate in the S.V. fractions using the 10X above blank level criteria. Results below the 10X limit are allowed "U" on the Sample Form I's. The TIC unknown compds are listed on the respective Form I-TIC forms.

5) Surrogate Recoveries -

All compounds in all samples in the VOA and Pest fractions met the criteria.

S.V. fraction - Samples EX96 and EX965 had 0% recovery for 3 surrogates (phenol-d-5, 2-fluorophenol, 2,4,6-tribromophenol). Sample EX96 had 10% recovery for 2 surrogates phenol-d-5 and 2-fluorophenol. The S.V. fraction for samples EX961, 96 and 965 should have all positive results estimated "J" and negative results ~~although~~ as unusable "R".

6) Matrix Spike/Matrix Spike Duplicate - Sample EX961 was used for all three fractions.

VOA - all compounds met the criteria. S.V. - all the acid fraction compds (pentachlorophenol, phenol, 2-chlorophenol, 4-chloro-3-methylphenol, 4-nitrophenol) had high % RPD for the MS/MSD Pest. - Endrin had a high % recovery in the MS. The remaining compds met the criteria.

7) Field Duplicates - there were no duplicates analyzed.

Reviewed by: [signature]

Phone: 312/553-2547

Date: [illegible]

DATA QUALIFIERS

Contractor: Cal

Case 9521 SAS 3758E

Below is a summary of the out-of-control audits and the possible affect on the data for this case:

) Internal Standard Performance
Both the VOA & SV fractions met the criteria of Rf and area counts limits.

) Compound Identification
The TIC's and unknowns are noted on the Form I-TIC. Compound identification was carried out properly and GC-MS results substantiate the compounds identified.

10) Compound Quantitation and Reported Detection Limits
The compound quantitation limits are reported on their respective Form I's compound list for all fractions. They should be qualified as indicated.
The instrument detection limits were submitted and indicate that many are not at the detection limits required by the SAS. In particular the S.V. fraction compds are affected. The quantitation limits are noted on the Form I's.

11) System Performance
The overall system performance for the VOA and SV fractions was acceptable. The G.C. performance for the Pest fraction was also acceptable. There was a high baseline on the VOA GC-MS ion chromatograms at the beginning of the analysis. This should not interfere substantially with the analysis.

12) Specific Problems
The surrogate recoveries in the S.V. fraction are unacceptable. The contractor's narrative indicates that the sample size was insufficient for analysis.
The samples in this case have been properly analyzed. Data were acceptable and the noted problems will not affect the usability of the data, except where indicated.

Reviewed by: [signature]

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGION V
CALIBRATION OUTLIERS
VOLATILE HSL COMPOUNDS

CASE/SAS # 9521 SAS 3758E CONTRACTOR Cal

| Instrument # F9 | Init. Cal. | | | Cont. Cal. | | | Cont. Cal. | | | Cont. Cal. | | | Cont. Cal. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DATE/TIME: | 5/13/89 12:17 | | | 5/13 14:20 | | | | | | | | | | | |
| | RF | %RSD | * | RF | %D | * | RF | %D | * | RF | %D | * | RF | %D | * |
| Chloromethane | | | | | | | | | | | | | | | |
| Bromomethane | | | | | | | | | | | | | | | |
| Vinyl Chloride | | | | | | | | | | | | | | | |
| Chloroethane | | | | | | | | | | | | | | | |
| Methylene Chloride | | | | | | | | | | | | | | | |
| Acetone | | | | | | | | | | | | | | | |
| Carbon Disulfide | | | | | | | | | | | | | | | |
| 1,1-Dichloroethane | | | | | | | | | | | | | | | |
| 1,1-Dichloroethene | | | | | | | | | | | | | | | |
| Trans-1,2-Dichloroethene | | | | | | | | | | | | | | | |
| Chloroform | | | | | | | | | | | | | | | |
| 2-Butanone | 0.011 | 6.32 | F/R | | | | | | | | | | | | |
| 1,2-Dichloroethane | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | | | | | | | | | | | | | | | |
| Carbon Tetrachloride | | | | | | | | | | | | | | | |
| Vinyl Acetate | | | | | | | | | | | | | | | |
| Bromodichloromethane | | | | | | | | | | | | | | | |
| 1,2-Dichloropropane | | | | | | | | | | | | | | | |
| Trans-1,3-Dichloropropene | | | | | | | | | | | | | | | |
| Trichloroethene | | | | | | | | | | | | | | | |
| Dibromochloromethane | | | | | | | | | | | | | | | |
| 1,1,2-Trichloroethane | | | | | | | | | | | | | | | |
| Benzene | | | | | | | | | | | | | | | |
| cis-1,3-Dichloropropene | | | | | | | | | | | | | | | |
| 2-Chloroethylvinylether | 0.010 | 26.21 | F/R | 0.008 | 29.4 | F/R | | | | | | | | | |
| Bromoform | | | | | | | | | | | | | | | |
| 4-Methyl-2-Pentanone | | | | | | | | | | | | | | | |
| 2-Hexanone | | | | | | | | | | | | | | | |
| Tetrachloroethene | | | | | | | | | | | | | | | |
| 1,1,2,2-Tetrachloroethane | | | | | | | | | | | | | | | |
| Toluene | | | | | | | | | | | | | | | |
| Chlorobenzene | | | | | | | | | | | | | | | |
| Ethylbenzene | | | | | | | | | | | | | | | |
| Styrene | | | | | | | | | | | | | | | |
| m-Xylene | | | | | | | | | | | | | | | |
| o/p-Xylene | | | | | | | | | | | | | | | |

AFFECTED SAMPLES:

| |
|---|
| VOA Blank |
| Ex 961 |
| Ex 963 |
| Ex 965 |
| Ex 966 |
| Ex 961MS |
| Ex 961MSD |

Reviewer's Initials/Date: 6/2/89 CRF

* These flags should be applied to the analytes on the sample data sheets.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGION V
CALIBRATION OUTLIERS
SEMIVOLATILE HSL COMPOUNDS
(Page 1)

CASE/SAS # 9521 54537585 CONTRACTOR Cal

| Instrument # F10 | Init. Cal. | | | Cont. Cal. | | | Cont. Cal. | | | Cont. Cal. | | | Cont. Cal. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DATE/TIME: | 5/3/88 1102 | | | 5/3/88 1129 | | | | | | | | | | | |
| | RF | %RSD | * | RF | %D | * | RF | %D | * | RF | %D | * | RF | %D | * |
| Phenol | | | | | | | | | | | | | | | |
| bis(-2-Chloroethyl)Ether | | | | | | | | | | | | | | | |
| 2-Chlorophenol | | | | | | | | | | | | | | | |
| 1,3-Dichlorobenzene | | | | | | | | | | | | | | | |
| 1,4-Dichlorobenzene | | | | | | | | | | | | | | | |
| Benzyl Alcohol | | | | | | | | | | | | | | | |
| 1,2-Dichlorobenzene | | | | | | | | | | | | | | | |
| 2-Methylphenol | | | | | | | | | | | | | | | |
| bis(2-chloroisopropyl)Ether | | | | | | | | | | | | | | | |
| 4-Methylphenol | | | | | | | | | | | | | | | |
| N-Nitroso-Di-n-Propylamine | | | | | | | | | | | | | | | |
| Hexachloroethane | | | | | | | | | | | | | | | |
| Nitrobenzene | | | | | | | | | | | | | | | |
| Isophorone | | | | | | | | | | | | | | | |
| 2-Nitrophenol | | | | | | | | | | | | | | | |
| 2,4-Dimethylphenol | | | | | | | | | | | | | | | |
| Benzoic Acid | | | | | | | | | | | | | | | |
| bis(2-Chloroethoxy)Methane | | | | | | | | | | | | | | | |
| 2,4-Dichlorophenol | | | | | | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | | | | | | | | | | | | | | | |
| Naphthalene | | | | | | | | | | | | | | | |
| 4-Chloroaniline | | | | | | | | | | | | | | | |
| Hexachlorobutadiene | | | | | | | | | | | | | | | |
| 4-Chloro-3-Methylphenol | | | | | | | | | | | | | | | |
| 2-Methylnaphthalene | | | | | | | | | | | | | | | |
| Hexachlorocyclopentadiene | | | | | | | | | | | | | | | |
| 2,4,6-Trichlorophenol | | | | | | | | | | | | | | | |
| 2,4,5-Trichlorophenol | | | | | | | | | | | | | | | |
| 2-Chloronaphthalene | | | | | | | | | | | | | | | |
| 2-Nitroaniline | | | | | | | | | | | | | | | |
| Dimethyl Phthalate | | | | | | | | | | | | | | | |
| Acenaphthylene | | | | | | | | | | | | | | | |
| 3-Nitroaniline | | | | | | | | | | | | | | | |
| Acenaphthene | | | | | | | | | | | | | | | |
| 2,4-Dinitrophenol | | | | | | | | | | | | | | | |
| 4-Nitrophenol | | | | | | | | | | | | | | | |
| Dibenzofuran | | | | | | | | | | | | | | | |

AFFECTED SAMPLES:

| |
|---|
| Method Blank |
| Ex 9.1 |
| Ex 961 MS |
| Ex 961 MSD |
| Ex 963 |
| Ex 965 |
| Ex 966 |

Reviewer Initials/Date: 6/2/88 CLF

* These flags should be applied to the analytes on the sample data sheets.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGION V
CALIBRATION OUTLIERS
SEMIVOLATILE HSL COMPOUNDS
Page 2

CASE/SAS # 9521 SAS 3709E CONTRACTOR Cal

| Instrument # F-10 | Init. Cal. | | | Cont. Cal. | | | Cont. Cal. | | | Cont. Cal. | | | Cont. Cal. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DATE/TIME: | 5/13/88 1102 | | | 5/13/88 1129 | | | | | | | | | | | |
| | RF | %RSD | * | RF | %D | * | RF | %D | * | RF | %D | * | RF | %D | * |
| 2,4-Dinitrotoluene | | | | | | | | | | | | | | | |
| 2,6-Dinitrotoluene | | | | | | | | | | | | | | | |
| Diethylphthalate | | | | | | | | | | | | | | | |
| 4-Chlorophenyl-phenylether | | | | | | | | | | | | | | | |
| Fluorene | | | | | | | | | | | | | | | |
| 4-Nitroaniline | | | | | | | | | | | | | | | |
| 4,6-Dinitro-2-Methylphenol | | | | | | | | | | | | | | | |
| N-Nitrosodiphenylamine | | | | | | | | | | | | | | | |
| 4-Bromophenyl-phenylether | | | | | | | | | | | | | | | |
| Hexachlorobenzene | | | | | | | | | | | | | | | |
| Pentachlorophenol | | | | | | | | | | | | | | | |
| Phenanthrene | | | | | | | | | | | | | | | |
| Anthracene | | | | | | | | | | | | | | | |
| Di-n-Butylphthalate | | | | | | | | | | | | | | | |
| Fluoranthene | | | | | | | | | | | | | | | |
| Pyrene | | | | | | | | | | | | | | | |
| Butylbenzylphthalate | | | | | | | | | | | | | | | |
| Benzo(a)Anthracene | | | | | | | | | | | | | | | |
| bis(2-Ethylhexyl)Phthalate | | | | | | | | | | | | | | | |
| Chrysene | | | | | | | | | | | | | | | |
| Di-n-Octyl Phthalate | | | | | | | | | | | | | | | |
| Benzo(b)Fluoranthene | | | | | | | | | | | | | | | |
| Benzo(k)Fluoranthene | | | | | | | | | | | | | | | |
| Benzo(a)Pyrene | | | | | | | | | | | | | | | |
| Indeno(1,2,3-cd)Pyrene | | | | | | | | | | | | | | | |
| Dibenz(a,h)Anthracene | | | | | | | | | | | | | | | |
| Benzo(g,h,i) Perylene | | | | | | | | | | | | | | | |

SEE PAGE 1 FOR AFFECTED SAMPLES.

* These flags should be applied to the analytes on the sample data sheets.

Reviewer's Initials/Date: [illegible]

Case: 9521 SAS 3758E

Contractor: CAL

TENTATIVELY IDENTIFIED COMPOUNDS
MATCH ASSESSMENT

NOTE: Reviewer should note directly on Organic Analysis Data Sheet (OADS) those matches that in his opinion (based on contract criteria) are unreasonable.

CRITERIA

(1) Relative intensities of major ions (>10%) reference spectrum should be present in the sample spectrum.

(2) Relative intensities of major ions in sample spectrum should agree to within ± 20% of reference spectrum intensities.

(3) Molecular ions present in reference spectrum should be present in sample spectrum.

(4) Ions present in sample spectrum, but not in reference spectrum should be reviewed for possible background contamination or presence of coeluting interferences.

(5) Ions present in reference spectrum, but not in the sample spectrum should be reviewed for possible subtraction from the sample spectrum because of background contamination or coeluting interferences.

(6) If, in the reviewer's opinion, no valid identification can be made the compound should be labelled as "unknown" and the initials and date of the reviewer placed on the OADS.

MAY 1 1 1988

MAY 1 1 1988

F.5154 MAY 1 3 1988

SAMPLE DATES: 5/4-5/88
LOG IN DATE: 5/20/88
DUE DATE: 7/13/88

# CENTRAL REGIONAL LABORATORY SAMPLE DATA REPORT
## ORGANICS/INORGANICS
THIS FORM IS TO BE USED FOR SAMPLES SENT TO CONTRACT ONLY

CASE NUMBER/SAS No. 9521/3758E SITE NAME Inland Steel LABORATORY CAL DATE SHIPPED 5/5/88

SUPERFUND DU NUMBER Y905 EPA RPM or OSC (S.M.S.)/(CES) _____ CERCLIS NUMBER MND980609937 PAGE 1 OF 1

ACTIVITY NUMBER C72100

| CRL LOG NUMBER | ORGANIC TRAFFIC REPORT NUMBER or SAS Packing List No. | INORGANIC TRAFFIC REPORT NUMBER | WATER OR LIQUIDS: ACID-BASE NEUTRAL CPDS ORGANIC SCAN UG/L TOX17574 | VOLATILE ORGANIC ANALYSIS ORGANIC SCAN UG/L TOX17564 | WATER POLYCHLORINATED BIPHENYLS UG/L PES 17144 | WATER CHLORINATED PESTICIDES UG/L PES17134 | TOTAL METALS IN WATER UG/L MET111 | WATER CYANIDE UG/L MIN74919 | NITRATE/NITRITE MG/L MIN7284 | AMMONIA MG/L MIN7294 | RESIDUE, FILTERABLE TDS MG/L MIN7362 | RESIDUE, NON-FILT TSS MG/L MIN7372 | | | SEDIMENTS or SOILS: ACID-BASE NEUTRAL CPDS ORGANIC SCAN MG/KG TOX215722 | VOLATILE ORGANIC ANALYSIS ORGANIC SCAN MG/KG TOX215622 | SEDIMENTS POLYCHLORINATED BIPHENYLS MG/KG PES211422 | SEDIMENT CHLORINATED PESTICIDES MG/KG 211322 | TOTAL METALS MG/KG MET413 | CYANIDE MG/KG MIN44930 | EP TOXICITY METALS MG/KG | AMMONIA MG/KG MIN42925 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 88FB19S05 | EX9601 | | ✓ | ✓ | ✓ | ✓ | | | | | | | | | | | | | | | | | | | | |
| 88FB19S06 | EX9603 | | ✓ | ✓ | ✓ | ✓ | | | | | | | | | | | | | | | | | | | | |
| 88FB19D06 | EX9605 | | ✓ | ✓ | ✓ | ✓ | | | | | | | | | | | | | | | | | | | | |
| 88FB19R01 | EX9606 | | ✓ | ✓ | ✓ | ✓ | | | | | | | | | | | | | | | | | | | | |
| | coc | TR data | | | | | | | | | | | | | | | | | | | | | | | | |

USEPA CONTRACT LABORATORY PROGRAM
SAMPLE MANAGEMENT OFFICE
P.O. BOX 818 ALEXANDRIA, VA 22313
703/557-2490 FTS-557-2490

CASE NO: 9521 | SAS NO: (IF APPLICABLE) 3758E

# ORGANIC TRAFFIC REPORT
(FOR CLP USE ONLY)

TYPE OF ACTIVITY (CIRCLE ONE) ①
SUPERFUND—PA (SI) ESI RIFS RD RA ER
NPLD O&M OTHER _____
NON-SUPERFUND—_____ PROGRAM

SAMPLE DESCRIPTION
(ENTER IN BOX A)
1. SURFACE WATER
2. GROUND WATER
3. LEACHATE
4. SOIL
5. SEDIMENT
6. OIL (SAS)
7. WASTE (SAS)

REGION NO: V
SAMPLING COMPANY ② FIT
SAMPLER: (NAME) Kenneth E. Dulil

SHIP TO: ③ Enseco / Cal Analytical Lab
2544 Industrial Blvd.
W. Sacramento, CA 95691
ATTN: Michael Lopez

SAMPLING DATE: ④
BEGIN: 5/5/88 END: 5/5/88
DATE SHIPPED: 5/5/88 CARRIER: F ⑤
AIRBILL NO: 5060108712

DATE REC'D: 5/6/88 / 0900
SDG NO: ⑥ EX961
REC'D BY: [illegible]
LABORATORY CONTRACT NO.: 68-W8-0069
UNIT PRICE: 888

TRANSFER TO:
DATE REC'D: ⑦
REC'D BY:
CONTRACT NO./PRICE:

Shipment is complete

| CLP SAMPLE NUMBER (FROM LABELS) | SAMPLE DESCRIPTION (FROM BOX 1) Ⓐ | CONCENTRATION L = LOW/MED. H = HIGH (SAS) Ⓑ | RAS ANALYSIS Ⓒ: VOLATILE | BASE/NEUT /ACID | PESTICIDE /PCB's | | SPECIAL HANDLING Ⓓ | STATION LOCATION Ⓔ | SAMPLE CONDITION ON RECEIPT Ⓕ | HIGH CONC. PHASES (CHECK) Ⓖ: SOLID | WATER—MIS LIQUID | NON WATER—MIS LIQUID |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EX 961 | 2 | L | ✓ | ✓ | ✓ | | | [illegible] | Samples were | | | |
| EX 963 | 2 | L | ✓ | ✓ | ✓ | | | K. 2 | received in good | | | |
| EX 964 | 2 | L | ✓ | ✓ | ✓ | | | KW3 | condition, packed | | | |
| EX 965 | 2 | L | ✓ | ✓ | ✓ | | | KW4 | w/vermiculite | | | |
| EX 966 | 2 | L | ✓ | ✓ | ✓ | | | Blank | and ice. OTC's | | | |
| | | | | | | | | | EPA Tags and | | | |
| | | | | | | | | | COC's were re- | | | |
| | | | | | | | | | ceived. * Tag | | | |
| | | | | | | | | | #S-157870- | | | |
| | | | | | | | | ** EX-964 | 879 were re- | | | |
| | | | | | | | | Listed on | ceived w/wrong | | | |
| | | | | | | | | COC as not | OTC # (EX-962 | | | |
| | | | | | | | | shipped. But | was recorded | | | |
| | | | | | | | | recorded on | but should be | | | |
| | | | | | | | | OTC as so. | EX-961). Also | | | |
| | | | | | | | | We did not | ice chest containing | | | |
| | | | | | | | | receive EX-962 | EX963 & "EX961" | | | |
| | | | | | | | | EX964 | was received w/ | | | |
| | | | | | | | | | Broken custody | | | |
| | | | | | | | | | seals. Other chest — | | | |
| | | | | | | | | | custody seals intact. | | | |

Final Sample EX966 KF

PA Form 2075-7 (8-87)

WHITE — SMO COPY PINK — CLIENT COPY WHITE — LAB COPY FOR RETURN TO SMO YELLOW — LAB

Enseco

RECEIVED
MAY 31 1988
U.S. EPA CENTRAL
REGIONAL LAB

May 24, 1988

Joan Fisk
U.S. EPA
Hazardous Waste Investigation
401 M Street, SW
Washington, DC 20460

Dear Joan Fisk:

Enclosed are data summary sheets and documentation for samples and QA/QC comprising case 9521/3758E (SDG EX961) of Contract 68-W8-0069. These samples were received 5/6/88 and logged in under the following ENSECO CAL Lab numbers:

| ENSECO CAL LAB Number | Sample I.D. |
|---|---|
| 41410-1 | EX961 |
| -2 | EX963 |
| -3 | EX965 |
| -4 | EX966 |

The samples were analyzed as low concentration water samples for low detection limits on a twenty one day turnaround. Several of the samples had low acid surrogate recoveries, but due to a lack of sample they could not be repeated. Only EX 961 was repeated and the recoveries of all surrogates were acceptable.

This report was checked for contractual compliance, assembled, paginated then printed and assembled by a Kodak copier/assembler. Each copy has been checked for completeness. This check may miss some individual pages. Please request by page number if any page is missing. If you have any questions, please give us a call.

Sincerely,

Michael Orbanosky
Michael W. Orbanosky
Director of GC/MS Services

Karin S. Yee
Karin S. Yee
Data Control Coordinator

Enseco Incorporated
2544 Industrial Boulevard
West Sacramento, California 95691
916/372-1393 Fax: 916/372-1059

WATER SURROGATE PERCENT RECOVERY SUMMARY

CASE NO.: 9521/3758E CONTRACT LABORATORY: ENSECO CAL LAB CONTRACT NO.: 68-W8-0069 DATA PREP/RELEASE BY: [illegible]

| SMO TRAFFIC NO. | VOLATILE | | | SEMI-VOLATILE | | | | | | PESTICIDE |
|---|---|---|---|---|---|---|---|---|---|---|
| | TOLUENE D8 (88-110) | BFB (86-115) | 1,2 DICHLORO ETHANE D4 (76-114) | NITRO-BENZENE D5 (35-114) | 2-FLUORO BIPHENYL (43-116) | TERPHENYL D14 (33-141) | PHENOL-D5 (10-94) | 2-FLUORO-PHENOL (21-100) | 2,4,6 TRIBROMO-PHENOL (10-123) | DIBUTYL-CHLORENDATE (24-154)** |
| EX 961 | 102 | 103 | 106 | 41 | 74 | 83 | 0 * | 0 * | 14 | 89 |
| EX 963 | 103 | 101 | 108 | 45 | 74 | 71 | 0 * | 0 * | 0 * | 88 |
| EX 965 | 101 | 102 | 102 | 37 | 72 | 77 | 0 * | 0 * | 0 * | 90 |
| EX 966 | 103 | 102 | 103 | 42 | 70 | 72 | 25 | 42 | 52 | 86 |
| VBK9880513 | 99 | 100 | 98 | NR | NR | NR | NR | NR | NR | NR |
| EX 961 MS | 103 | 101 | 104 | 47 | 72 | 76 | 20 | 28 | 56 | 90 |
| EX 961 MSD | 100 | 101 | 105 | 42 | 70 | 81 | 15 | 16 | 35 | 82 |
| 41410MB | NR | NR | NR | 39 | 69 | 73 | 27 | 42 | 51 | 76 |

* VALUES ARE OUTSIDE OF CONTRACT REQUIRED QC LIMITS

** ADVISORY LIMITS ONLY

VOLATILES: 0 OUT OF 81 : OUTSIDE OF QC LIMITS
SEMI-VOLATILES: 8 OUT OF 40 : OUTSIDE OF QC LIMITS
PESTICIDES: 0 OUT OF 7 : OUTSIDE OF QC LIMITS

COMMENTS: low acid recoveries, was not able to verify matrix problem on all samples due to lack of sample.

Key
Leo

# WATER MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

CASE NO.: 9521/3758E CONTRACTOR: Enseco - Cal Lab CONTRACT NO.68-W8-0069

| FRACTION | COMPOUND | CONC.SPIKE ADDED(ug/L) SPIKE | DUPLICATE | SAMPLE RESULT | CONC. MS | % REC | CONC. MSD | % REC | %RPD | QC LIMITS* RPD | RECOVERY |
|---|---|---|---|---|---|---|---|---|---|---|---|
| VOA | 1,1-Dichloroethene | 10 | 10 | 0 | 9.5 | 95 | 9.7 | 97 | 2.1 | 14 | 61-145 |
| SMO | Trichloroethene | 10 | 10 | 0 | 9.4 | 94 | 9.4 | 94 | 0.0 | 14 | 71-120 |
| SAMPLE NO. | Chlorobenzene | 10 | 10 | 0 | 9.4 | 94 | 9.4 | 94 | 0.0 | 13 | 75-130 |
| | Toluene | 10 | 10 | 1.5 | 11 | 95 | 10.7 | 92 | 3.2 | 13 | 76-125 |
| EX 961 | Benzene | 10 | 10 | 0 | 9.4 | 94 | 9.6 | 96 | 2.1 | 11 | 76-127 |
| B/N | 1,2,4-Trichlorobenzene | 20 | 20 | 0 | 12.9 | 64 | 11.2 | 56 | 13 | 28 | 39-98 |
| SMO | Acenaphthene | 20 | 20 | 0 | 15.8 | 79 | 14.2 | 71 | 11 | 31 | 46-118 |
| SAMPLE NO. | 2,4-Dinitrotoluene | 20 | 20 | 0 | 8.8 | 44 | 6.8 | 34 | 26 | 38 | 24-96 |
| | Pyrene | 20 | 20 | 0 | 14.7 | 74 | 14.1 | 71 | 4 | 31 | 26-127 |
| | N-Nitrosodi-n-Propylamine | 20 | 20 | 0 | 14.3 | 72 | 11.8 | 59 | 19 | 38 | 41-116 |
| EX 961 | 1,4-Dichlorobenzene | 20 | 20 | 0 | 14.9 | 75 | 13.8 | 69 | 8 | 28 | 36-97 |
| ACID | Pentachlorophenol | 40 | 40 | 0 | 22 | 55 | 10.8 | 27 | 68 * | 50 | 9-103 |
| SMO | Phenol | 40 | 40 | 0 | 12.6 | 32 | 6.7 | 17 | 61 * | 42 | 12-89 |
| SAMPLE NO. | 2-Chlorophenol | 40 | 40 | 0 | 38.2 | 96 | 24 | 60 | 46 * | 40 | 27-123 |
| | 4-Chloro-3-Methylphenol | 40 | 40 | 0 | 20.9 | 52 | 9.5 | 24 | 74 * | 42 | 23-97 |
| EX 961 | 4-Nitrophenol | 40 | 40 | 0 | 9.5 | 24 | 5 | 13 | 62 * | 50 | 10-80 |
| PEST | Lindane | 0.0216 | 0.0217 | 0 | 0.0225 | 104 | 0.0254 | 117 | 12 | 15 | 56-123 |
| SMO | Heptachlor | 0.0216 | 0.0217 | 0 | 0.0255 | 118 | 0.0238 | 110 | 7 | 20 | 40-131 |
| SAMPLE NO. | Aldrin | 0.0216 | 0.0217 | 0 | 0.023 | 106 | 0.0252 | 116 | 9 | 22 | 40-120 |
| | Dieldrin | 0.0541 | 0.0542 | 0 | 0.0574 | 106 | 0.0502 | 93 | 13 | 18 | 52-126 |
| | Endrin | 0.0541 | 0.0542 | 0 | 0.0687 | 127 * | 0.0576 | 106 | 18 | 21 | 56-121 |
| EX 961 | 4,4-DDT | 0.0541 | 0.0542 | 0 | 0.0591 | 109 | 0.0488 | 90 | 19 | 27 | 38-127 |

* ASTERISKED VALUES ARE OUTSIDE QC LIMITS

RPD: VOAs 0 out of 5 ; outside QC limits
B/Ns 0 out of 6 ; outside QC limits
ACID 5 out of 5 ; outside QC limits
PEST 0 out of 6 ; outside QC limits

RECOVERY: VOAs 0 out of 10 ; outside QC limits
B/Ns 0 out of 12 ; outside QC limits
ACID 0 out of 10 ; outside QC limits
PEST 1 out of 12 ; outside QC limits

Comments:

FORM III 7/85

10

Key
Memo

METHOD BLANK SUMMARY

CASE NO. 9521/3758E REGION: 5 CONTRACTOR: Enseco - Cal Lab CONTRACT NO. 68-W8-0069

| FILE ID | DATE OF ANALYSIS | FRACTION | MATRIX | CONC. LEVEL | INST. ID | CAS NUMBER | COMPOUND (HSL.TIC OR UNKNOWN) | CONC. | UNITS | CRDL |
|---|---|---|---|---|---|---|---|---|---|---|
| VBK9880513 | 5/13/88 | VOA | WATER | LOW | F9 | 67-64-1 | ACETONE | 2 | UG/L | 10 |
| 41410MB | 5/18/88 | ABN | WATER | LOW | F10 | 117-81-7 | BIS(2ETHYLHEXYL)PHTHALATE | 7 | UG/L | 1 |
| | | | | | | 541-05-9 | CYCLOTRISILOXANE, HEXAMETHYL | 3 | UG/L | |
| | | | | | | 4337-65-7 | HEXANEDIOTIC ACID, MONO(2-ETHYL | 1 | UG/L | |
| 41410MB | 5/17/88 | PEST | WATER | LOW | GC10 | GC10 | NO PESTICIDES FOUND | | | |

COMMENTS:

FORM IV 7/85

SPECIAL COMPOUNDS

Method 624/CLP

| | | | | | |
|---|---|---|---|---|---|
| Case: | 9521/3758E | | | | |
| EPA ID: | EX 961 | | | | |
| Lab ID: | 41410-1 | Enseco ID: | NA | | |
| Matrix: | Water | Sampled: | 05-May-88 | Received: | 06-May-88 |
| Authorized: | 06-May-88 | Prepared: | NA | Analyzed: | 13-May-88 |

| Parameter | Result | Units | Reporting Limit |
|---|---|---|---|
| Acrolein | ND | ug/L | 100 |
| Acrylonitrile | ND | ug/L | 50 |

ND=Not Detected
NA=Not Applicable

Reported by: PTH

Approved by: BSM

The cover letter is an integral part of this report.
Rev 041588

SPECIAL COMPOUNDS

Method 624/CLP

| | | | | | |
|---|---|---|---|---|---|
| Case: | 9521/3758E | | | | |
| EPA ID: | EX 961MS | | | | |
| Lab ID: | 41410-1MS | Enseco ID: | NA | | |
| Matrix: | Water | Sampled: | 05-May-88 | Received: | 06-May-88 |
| Authorized: | 06-May-88 | Prepared: | NA | Analyzed: | 13-May-88 |

| Parameter | Result | Units | Reporting Limit |
|---|---|---|---|
| Acrolein | ND | ug/L | 100 |
| Acrylonitrile | ND | ug/L | 50 |

ND=Not Detected
NA=Not Applicable

Reported by: PTH

Approved by: BSM

The cover letter is an integral part of this report.
Rev 041588

SPECIAL COMPOUNDS

Method 624/CLP

| | | | | | |
|---|---|---|---|---|---|
| Case: | 9521/3758E | | | | |
| EPA ID: | EX 961MSD | | | | |
| Lab ID: | 41410-1MSD | Enseco ID: | NA | | |
| Matrix: | Water | Sampled: | 05-May-88 | Received: | 06-May-88 |
| Authorized: | 06-May-88 | Prepared: | NA | Analyzed: | 13-May-88 |

| Parameter | Result | Units | Reporting Limit |
|---|---|---|---|
| Acrolein | ND | ug/L | 100 |
| Acrylonitrile | ND | ug/L | 50 |

ND=Not Detected
NA=Not Applicable

Reported by: PTH

Approved by: BSM

The cover letter is an integral part of this report.
Rev 041588

SPECIAL COMPOUNDS

Method 624/CLP

| | | | | | |
|---|---|---|---|---|---|
| Case: | 9521/3758E | | | | |
| EPA ID: | EX 963 | | | | |
| Lab ID: | 41410-2 | Enseco ID: | NA | | |
| Matrix: | Water | Sampled: | 05-May-88 | Received: | 06-May-88 |
| Authorized: | 06-May-88 | Prepared: | NA | Analyzed: | 13-May-88 |

| Parameter | Result | Units | Reporting Limit |
|---|---|---|---|
| Acrolein | ND | ug/L | 100 |
| Acrylonitrile | ND | ug/L | 50 |

ND=Not Detected
NA=Not Applicable

Reported by: PTH

Approved by: BSM

The cover letter is an integral part of this report.
Rev 041588

SPECIAL COMPOUNDS

Method 624/CLP

| | | | | | |
|---|---|---|---|---|---|
| Case: | 9521/3758E | | | | |
| EPA ID: | EX 965 | | | | |
| Lab ID: | 41410-3 | Enseco ID: | NA | | |
| Matrix: | Water | Sampled: | 05-May-88 | Received: | 06-May-88 |
| Authorized: | 06-May-88 | Prepared: | NA | Analyzed: | 13-May-88 |

| Parameter | Result | Units | Reporting Limit |
|---|---|---|---|
| Acrolein | ND | ug/L | 100 |
| Acrylonitrile | ND | ug/L | 50 |

ND=Not Detected
NA=Not Applicable

Reported by: PTH

Approved by: BSM

The cover letter is an integral part of this report.
Rev 041588

SPECIAL COMPOUNDS

Method 624/CLP

| | | | | | |
|---|---|---|---|---|---|
| Case: | 9521/3758E | | | | |
| EPA ID: | EX 966 | | | | |
| Lab ID: | 41410-4 | Enseco ID: | NA | | |
| Matrix: | Water | Sampled: | 05-May-88 | Received: | 06-May-88 |
| Authorized: | 06-May-88 | Prepared: | NA | Analyzed: | 13-May-88 |

| Parameter | Result | Units | Reporting Limit |
|---|---|---|---|
| Acrolein | ND | ug/L | 100 |
| Acrylonitrile | ND | ug/L | 50 |

ND=Not Detected
NA=Not Applicable

Reported by: PTH

Approved by: BSM

The cover letter is an integral part of this report.
Rev 041588

SPECIAL COMPOUNDS

Method 624/CLP

| | | | | | |
|---|---|---|---|---|---|
| Case: | 9521/3758E | | | | |
| EPA ID: | Voa Blank | | | | |
| Lab ID: | VBK9880513 | Enseco ID: | NA | | |
| Matrix: | Water | Sampled: | NA | Received: | NA |
| Authorized: | NA | Prepared: | NA | Analyzed: | 13-May-88 |

| Parameter | Result | Units | Reporting Limit |
|---|---|---|---|
| Acrolein | ND | ug/L | 100 |
| Acrylonitrile | ND | ug/L | 50 |

ND=Not Detected
NA=Not Applicable

Reported by: PTH

Approved by: BSM

The cover letter is an integral part of this report.
Rev 041588

Sample Number
EX 961

# Organics Analysis Data Sheet
(Page 1)

Laboratory Name: ENSECO CAL LAB
Case No: 9487/3758E
Lab Sample ID No: 41410-1
QC Report No: 3758E
Sample Matrix: WATER
Contract No: 68-W8-0069
Data Release Authorized By:
Date Sample Received: 5/5/88

## Volatile Compounds

Concentration: Low
Date Extracted/Prepared: 5/13/88
Date Analyzed: 5/13/88
Conc/Dil Factor: 1 pH: NR
Percent Moisture: NR
Percent Moisture (Decanted): NR

| CAS Number | | ug/L |
|---|---|---|
| 74-87-3 | Chloromethane | 5 U |
| 74-83-9 | Bromomethane | 5 U |
| 75-01-4 | Vinyl Chloride | 5 U |
| 75-00-3 | Chloroethane | 1 U |
| 75-09-2 | Methylene Chloride | 5 U |
| 67-64-1 | Acetone | 2 JB |
| 75-15-0 | Carbon Disulfide | 1 U |
| 75-35-4 | 1,1-Dichloroethene | 1 U |
| 75-34-3 | 1,1-Dichloroethane | 1 U |
| 156-60-5 | Trans-1,2-Dichloroethene | 1 U |
| 67-66-3 | Chloroform | 1 U |
| 107-06-2 | 1,2-Dichloroethane | 1 U |
| 78-93-3 | 2-Butanone | 10 U |
| 71-55-6 | 1,1,1-Trichloroethane | 1 U |
| 56-23-5 | Carbon Tetrachloride | 1 U |
| 108-05-4 | Vinyl Acetate | 10 U |
| 75-27-4 | Bromodichloromethane | 1 U |

| CAS Number | | ug/L |
|---|---|---|
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 1 U |
| 78-87-5 | 1,2-Dichloropropane | 1 U |
| 10061-02-6 | Trans-1,3-Dichloropropene | 1 U |
| 79-01-6 | Trichloroethene | 1 U |
| 124-48-1 | Dibromochloromethane | 1 U |
| 79-00-5 | 1,1,2-Trichloroethane | 1 U |
| 71-43-2 | Benzene | 1 U |
| 10061-01-5 | cis-1,3-Dichloropropene | 1 U |
| 110-75-8 | 2-Chloroethylvinylether | 10 U |
| 75-25-2 | Bromoform | 1 U |
| 591-78-6 | 2-Hexanone | 10 U |
| 108-10-1 | 4-Methyl-2-Pentanone | 10 U |
| 127-18-4 | Tetrachloroethene | 1 U |
| 108-88-3 | Toluene | 2 |
| 108-90-7 | Chlorobenzene | 1 U |
| 100-41-4 | Ethylbenzene | 1 U |
| 100-42-5 | Styrene | 1 U |
| | Total Xylenes | 1 U |

### Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

**Value** If the result is a value greater than or equal to the detection limit, report the value.

**U** Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U (e.g. 10U) based on necessary concentration/dilution actions. (This is not necessarily the instrument detection limit.) The footnote should read: U - Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample

**J** Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicated the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. (e.g. 10J). If limit of detection is 10ug/l and a concentration of 3ug/l is calculated, report as 3J

**C** This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides >= 10ng/ul in the final extract should be confirmed by GC/MS

**B** This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

**Other** Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

NA Not Analyzed
# See cover letter.
NR Not Required
S Spiked Compound.

15

ORGANICS ANALYSIS DATA SHEET
Page 4
ORGANICS ANALYSIS DATA SHEET
Page 4
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: CAL 3758E Case No. 9521/3758E Sample No. EX961

GC Report No. Lab Sample No. 4141001AB

Probability that Identification is Correct:
A= HIGH B= MODERATE C= UNKNOWN D= SOLVENT IMPURITY, see VOA

| CAS# | COMPOUND NAME | FRACTION | SCAN NUMBER | PURITY | Estimated CONC. J VALUE |
|---|---|---|---|---|---|
| | No A/BN | | | | |

FORM 1, PART B

TENTATIVELY IDENTIFIED COMPOUNDS

B NAME: CAL 3758E CASE NO. 9521/3758E SAMPLE NO. EX961

C REPORT NO. LAB SAMPLE NO. 4141001V

DBABILITY THAT IDENTIFICATION IS CORRECT:
A= HIGH B= MODERATE C= LOW D= SEE ABN

| | CAS# | COMPOUND NAME | FRACTION | SCAN NUMBER | PURITY | ESTIMATED CONC. J VALUE |
|---|---|---|---|---|---|---|
| 1. | 75-09-2 | METHANE, DICHLORO- | VOA | 76 | 905 | 9.8 UG/L |
| 2. | 75-69-4 | METHANE, TRICHLOROFLUORO- | VOA | 100 | 987 | 6.0 UG/L |
| | 127-18-4 | ETHENE, TETRACHLORO- | VOA | 308 | 955 | 5.4 UG/L |

| | COMPOUND NAME | PROBABILITY | COMMENTS |
|---|---|---|---|
| 1. | METHANE, DICHLORO- | 1. A | 1. target cmpd below R.L. |
| 2. | METHANE, TRICHLOROFLUORO- | 2. A | 2. |
| | ETHENE, TETRACHLORO- | 3. A | 3. target cmpd below R.L. |

FORM 1, PART B

ORGANICS ANALYSIS DATA SHEET
Page 4
ORGANICS ANALYSIS DATA SHEET
Page 4
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: CAL 3758E Case No. 9521/3758E Sample No. EX961

QC Report No. Lab Sample No. 4141001AB

Probability that Identification is Correct:
A= HIGH B= MODERATE C= UNKNOWN D= SOLVENT IMPURITY, see VOA

| CAS# | COMPOUND NAME | FRACTION | SCAN NUMBER | PURITY | Estimated CONC. J VALUE |
|---|---|---|---|---|---|
| | No A/BN | | | | |

FORM 1, PART B

Laboratory Name: CALIFORNIA ANALYTICAL LABORATORIES, INC.
Case No: 9521/3758E

| Sample Number |
|---|
| EX 961 |

# Organics Analysis Data Sheet
(Page 2)

## Semivolatile Compounds

Concentration: Low

Date Extracted/Prepared: 5/6/88

Date Analyzed: 5/18/88

Conc/DiL Factor: 1

GPC Cleanup: NO

Separatory Funnel Extraction: YES

Continuous Liquid - Liquid Extraction: NO

| CAS Number | | ug/L |
|---|---|---|
| 108-95-2 | Phenol | 1.0 U |
| 111-44-4 | bis(-2-Chloroethyl)Ether | 1.0 U |
| 95-57-8 | 2-Chlorophenol | 1.0 U |
| 541-73-1 | 1,3-Dichlorobenzene | 1.0 U |
| 106-46-7 | 1,4-Dichlorobenzene | 1.0 U |
| 100-51-6 | Benzyl Alcohol | 1.0 U |
| 95-50-1 | 1,2-Dichlorobenzene | 1.0 U |
| 95-48-7 | 2-Methylphenol | 1.0 U |
| 39638-32-9 | bis(2-chloroisopropyl)Ether | 1.0 U |
| 106-44-5 | 4-Methylphenol | 1.0 U |
| 621-64-7 | N-Nitroso-Di-n-Propylamine | 1.0 U |
| 67-72-1 | Hexachloroethane | 1.0 U |
| 98-95-3 | Nitrobenzene | 1.0 U |
| 78-59-1 | Isophorone | 1.0 U |
| 88-75-5 | 2-Nitrophenol | 1.0 U |
| 105-67-9 | 2,4-Dimethylphenol | 1.0 U |
| 65-85-0 | Benzoic Acid | 20 U |
| 111-91-1 | bis(-2-Chloroethoxy)Methane | 1.0 U |
| 120-83-2 | 2,4-Dichlorophenol | 1.0 U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 1.0 U |
| 91-20-3 | Naphthalene | 1.0 U |
| 106-47-8 | 4-Chloroaniline | 1.0 U |
| 87-68-3 | Hexachlorobutadiene | 1.0 U |
| 59-50-7 | 4-Chloro-3-Methylphenol | 1.0 U |
| 91-57-6 | 2-Methylnaphthalene | 1.0 U |
| 77-47-4 | Hexachlorocyclopentadiene | 1.0 U |
| 88-06-2 | 2,4,6-Trichlorophenol | 1.0 U |
| 95-95-4 | 2,4,5-Trichlorophenol | 1.0 U |
| 91-58-7 | 2-Chloronaphthalene | 1.0 U |
| 88-74-4 | 2-Nitroaniline | 5.0 U |
| 131-11-3 | Dimethyl Phthalate | 1.0 U |
| 208-96-8 | Acenaphthylene | 1.0 U |
| 99-09-2 | 3-Nitroaniline | 5.0 U |

| CAS Number | | ug/L |
|---|---|---|
| 83-32-9 | Acenaphthene | 1.0 U |
| 51-28-5 | 2,4-Dinitrophenol | 15 U |
| 100-02-7 | 4-Nitrophenol | 15 U |
| 132-64-9 | Dibenzofuran | 1.0 U |
| 121-14-2 | 2,4-Dinitrotoluene | 1.0 U |
| 606-20-2 | 2,6-Dinitrotoluene | 1.0 U |
| 84-66-2 | Diethylphthalate | 1.0 U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 1.0 U |
| 86-73-7 | Fluorene | 1.0 U |
| 100-01-6 | 4-Nitroaniline | 5.0 U |
| 534-52-1 | 4,6-Dinitro-2-Methylphenol | 15 U |
| 86-30-6 | N-Nitrosodiphenylamine(1) | 1.5 U |
| 101-55-3 | 4-Bromophenyl-phenylether | 1.5 U |
| 118-74-1 | Hexachlorobenzene | 1.5 U |
| 87-86-5 | Pentachlorophenol | 2.0 U |
| 85-01-8 | Phenanthrene | 1.0 U |
| 120-12-7 | Anthracene | 2.5 U |
| 84-74-2 | Di-n-Butylphthalate | 2.0 U |
| 206-44-0 | Fluoranthene | 1.5 U |
| 129-00-0 | Pyrene | 1.5 U |
| 85-68-7 | Butylbenzylphthalate | 3.5 U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 20 U |
| 56-55-3 | Benzo(a)Anthracene | 1.5 U |
| 117-81-7 | bis(2-Ethylhexyl)Phthalate | 12 U |
| 218-01-9 | Chrysene | 1.5 U |
| 117-84-0 | Di-n-Octyl Phthalate | 1.5 U |
| 205-99-2 | Benzo(b)Fluoranthene | 1.5 U |
| 207-08-9 | Benzo(k)Fluoranthene | 1.5 U |
| 50-32-8 | Benzo(a)Pyrene | 2.0 U |
| 193-39-5 | Indeno(1,2,3-cd)Pyrene | 3.5 U |
| 53-70-3 | Dibenz(a,h)Anthracene | 2.5 U |
| 191-24-2 | Benzo(g,h,i)Perylene | 4.0 U |

(1) - Cannot be separated from diphenylamine

CLF: 10/11/85

Form I

Prepared by:

ORGANICS ANALYSIS DATA SHEET
PAGE 4
TENTATIVELY IDENTIFIED COMPOUNDS

LAB NAME: CAL 3758E CASE NO. 9521/3758E SAMPLE NO. EX961

GC REPORT NO. LAB SAMPLE NO. 4141001V

PROBABILITY THAT IDENTIFICATION IS CORRECT:
A= HIGH B= MODERATE C= LOW D= SEE ABN

| | CAS# | COMPOUND NAME | FRACTION | SCAN NUMBER | PURITY | ESTIMATED CONC. J VALUE |
|---|---|---|---|---|---|---|
| 1. | 75-09-2 | METHANE, DICHLORO- | VOA | 76 | 905 | 9.8 UG/L |
| 2. | 75-69-4 | METHANE, TRICHLOROFLUORO- | VOA | 100 | 987 | 6.0 UG/L |
| 3. | 127-18-4 | ETHENE, TETRACHLORO- | VOA | 308 | 955 | 5.4 UG/L |

| COMPOUND NAME | PROBABILITY | COMMENTS |
|---|---|---|
| 1. METHANE, DICHLORO- | 1. A | 1. target cmpd below R.L. |
| 2. METHANE, TRICHLOROFLUORO- | 2. A | 2. |
| 3. ETHENE, TETRACHLORO- | 3. A | 3. target cmpd below R.L. |

FORM 1, PART B

Sample Number
EX 963

# Organics Analysis Data Sheet
(Page 1)

Laboratory Name: ENSECO CAL LAB
Case No: 9487/3758E
Lab Sample ID No: 41410-2
QC Report No: 3758E
Sample Matrix: WATER
Contract No: 68-W8-0069
Data Release Authorized By:
Date Sample Received: 5/5/88

## Volatile Compounds

Concentration: Low
Date Extracted/Prepared: 5/13/88
Date Analyzed: 5/13/88
Conc/Dil Factor: 1 pH: NR
Percent Moisture: NR
Percent Moisture (Decanted): NR

| CAS Number | | ug/L |
|---|---|---|
| 74-87-3 | Chloromethane | 5 U |
| 74-83-9 | Bromomethane | 5 U |
| 75-01-4 | Vinyl Chloride | 5 U |
| 75-00-3 | Chloroethane | 1 U |
| 75-09-2 | Methylene Chloride | 5 U |
| 67-64-1 | Acetone | 10 U |
| 75-15-0 | Carbon Disulfide | 1 U |
| 75-35-4 | 1,1-Dichloroethene | 1 U |
| 75-34-3 | 1,1-Dichloroethane | 1 U |
| 156-60-5 | Trans-1,2-Dichloroethene | 1 U |
| 67-66-3 | Chloroform | 1 U |
| 107-06-2 | 1,2-Dichloroethane | 1 U |
| 78-93-3 | 2-Butanone | 10 U |
| 71-55-6 | 1,1,1-Trichloroethane | 1 U |
| 56-23-5 | Carbon Tetrachloride | 1 U |
| 108-05-4 | Vinyl Acetate | 10 U |
| 75-27-4 | Bromodichloromethane | 1 U |

| CAS Number | | ug/L |
|---|---|---|
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 1 U |
| 78-87-5 | 1,2-Dichloropropane | 1 U |
| 10061-02-6 | Trans-1,3-Dichloropropene | 1 U |
| 79-01-6 | Trichloroethene | 1 U |
| 124-48-1 | Dibromochloromethane | 1 U |
| 79-00-5 | 1,1,2-Trichloroethane | 1 U |
| 71-43-2 | Benzene | 1 U |
| 10061-01-5 | cis-1,3-Dichloropropene | 1 U |
| 110-75-8 | 2-Chloroethylvinylether | 10 U |
| 75-25-2 | Bromoform | 1 U |
| 591-78-6 | 2-Hexanone | 10 U |
| 108-10-1 | 4-Methyl-2-Pentanone | 10 U |
| 127-18-4 | Tetrachloroethene | 1 U |
| 108-88-3 | Toluene | 3 |
| 108-90-7 | Chlorobenzene | 1 U |
| 100-41-4 | Ethylbenzene | 1 U |
| 100-42-5 | Styrene | 1 U |
| | Total Xylenes | 1 U |

**Data Reporting Qualifiers**

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

Value If the result is a value greater than or equal to the detection limit, report the value.

U Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U (e.g. 10U) based on necessary concentration/dilution actions. (This is not necessarily the instrument detection limit.) The footnote should read: U - Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample

J Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicated the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. (e.g. 10J). If limit of detection is 10ug/l and a concentration of 3ug/l is calculated, report as 3J

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides >= 10ng/ul in the final extract should be confirmed by GC/MS

B This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

Other Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.
NA Not Analyzed
# See cover letter.
NR Not Required
S Spiked Compound



CLF: 11/14/85 Form I Prepared by: 10/85

ORGANICS ANALYSIS DATA SHEET
PAGE 4
TENTATIVELY IDENTIFIED COMPOUNDS

LAB NAME: CAL CASE NO. 9521/3758E SAMPLE NO. EX963

QC REPORT NO. 3758E LAB SAMPLE NO. 4141002V

PROBABILITY THAT IDENTIFICATION IS CORRECT:
A= HIGH B= MODERATE C= LOW D= SEE ABN

| | CAS# | COMPOUND NAME | FRACTION | SCAN NUMBER | PURITY | ESTIMATED CONC. J VALUE |
|---|---|---|---|---|---|---|
| 1. | 75-09-2 | METHANE, DICHLORO- | VOA | 76 | 877 | 9.4 UG/L |

| COMPOUND NAME | PROBABILITY | COMMENTS |
|---|---|---|
| 1. METHANE, DICHLORO- | 1. A | 1. ~~A~~ target compd. below R.L. |

FORM 1, PART B

ORGANICS ANALYSIS DATA SHEET
Page 4
TENTATIVELY IDENTIFIED COMPOUNDS

st Name: CAL Case No. 9521/3758E Sample No. EX963

: Report No. 3758E Lab Sample No. 4141002AB

ability that Identification is Correct:
A= HIGH B= MODERATE C= UNKNOWN D= SOLVENT IMPURITY, see VOA

| | CAS# | COMPOUND NAME | FRACTION | SCAN NUMBER | PURITY | Estimated CONC. J VALUE |
|---|---|---|---|---|---|---|
| 1. | 30691-59-9 | AZIRIDINE, 1-HEXYL- | A/BN | 350 | 532 | 2.6 UG/L |

| | COMPOUND NAME | PROBABILITY | COMMENTS |
|---|---|---|---|
| 1 | AZIRIDINE, 1-HEXYL- | 1. C | 1. |

FORM 1, PART B

ORGANICS ANALYSIS DATA SHEET
PAGE 4
TENTATIVELY IDENTIFIED COMPOUNDS

LAB NAME: CAL CASE NO. 9521/3758E SAMPLE NO. EX963

QC REPORT NO. 3758E LAB SAMPLE NO. 4141002V

PROBABILITY THAT IDENTIFICATION IS CORRECT:
A= HIGH B= MODERATE C= LOW D= SEE ABN

| | CAS# | COMPOUND NAME | FRACTION | SCAN NUMBER | PURITY | ESTIMATED CONC. J VALUE |
|---|---|---|---|---|---|---|
| 1. | 75-09-2 | METHANE, DICHLORO- | VOA | 76 | 877 | 9.4 UG/L |

| COMPOUND NAME | PROBABILITY | COMMENTS |
|---|---|---|
| 1. METHANE, DICHLORO- | 1. A | 1. ~~#~~ target compd. below R.L. |

FORM 1, PART B

Case No:9521/3758E

Sample Number
EX 963

# Organics Analysis Data Sheet
(Page 2)

## Semivolatile Compounds

Concentration: Low

Date Extracted/Prepared: 5/6/88

Date Analyzed: 5/18/88

Conc/Dil. Factor: 1

GPC Cleanup: NO

Separatory Funnel Extraction: YES

Continuous Liquid - Liquid Extraction: NO

| CAS Number | | ug/L |
|---|---|---|
| 108-95-2 | Phenol | 1.0 U |
| 111-44-4 | bis(-2-Chloroethyl)Ether | 1.0 U |
| 95-57-8 | 2-Chlorophenol | 1.0 U |
| 541-73-1 | 1,3-Dichlorobenzene | 1.0 U |
| 106-46-7 | 1,4-Dichlorobenzene | 1.0 U |
| 100-51-6 | Benzyl Alcohol | 1.0 U |
| 95-50-1 | 1,2-Dichlorobenzene | 1.0 U |
| 95-48-7 | 2-Methylphenol | 1.0 U |
| 39638-32-9 | bis(2-chloroisopropyl)Ether | 1.0 U |
| 106-44-5 | 4-Methylphenol | 1.0 U |
| 621-64-7 | N-Nitroso-Di-n-Propylamine | 1.0 U |
| 67-72-1 | Hexachloroethane | 1.0 U |
| 98-95-3 | Nitrobenzene | 1.0 U |
| 78-59-1 | Isophorone | 1.0 U |
| 88-75-5 | 2-Nitrophenol | 1.0 U |
| 105-67-9 | 2,4-Dimethylphenol | 1.0 U |
| 65-85-0 | Benzoic Acid | 20 U |
| 111-91-1 | bis(-2-Chloroethoxy)Methane | 1.0 U |
| 120-83-2 | 2,4-Dichlorophenol | 1.0 U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 1.0 U |
| 91-20-3 | Naphthalene | 1.0 U |
| 106-47-8 | 4-Chloroaniline | 1.0 U |
| 87-68-3 | Hexachlorobutadiene | 1.0 U |
| 59-50-7 | 4-Chloro-3-Methylphenol | 1.0 U |
| 91-57-6 | 2-Methylnaphthalene | 1.0 U |
| 77-47-4 | Hexachlorocyclopentadiene | 1.0 U |
| 88-06-2 | 2,4,6-Trichlorophenol | 1.0 U |
| 95-95-4 | 2,4,5-Trichlorophenol | 1.0 U |
| 91-58-7 | 2-Chloronaphthalene | 1.0 U |
| 88-74-4 | 2-Nitroaniline | 5.0 U |
| 131-11-3 | Dimethyl Phthalate | 1.0 U |
| 208-96-8 | Acenaphthylene | 1.0 U |
| 99-09-2 | 3-Nitroaniline | 5.0 U |

| CAS Number | | ug/L |
|---|---|---|
| 83-32-9 | Acenaphthene | 1.0 U |
| 51-28-5 | 2,4-Dinitrophenol | 15 U |
| 100-02-7 | 4-Nitrophenol | 15 U |
| 132-64-9 | Dibenzofuran | 1.0 U |
| 121-14-2 | 2,4-Dinitrotoluene | 1.0 U |
| 606-20-2 | 2,6-Dinitrotoluene | 1.0 U |
| 84-66-2 | Diethylphthalate | 1.0 U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 1.0 U |
| 86-73-7 | Fluorene | 1.0 U |
| 100-01-6 | 4-Nitroaniline | 5.0 U |
| 534-52-1 | 4,6-Dinitro-2-Methylphenol | 15 U |
| 86-30-6 | N-Nitrosodiphenylamine(1) | 1.5 U |
| 101-55-3 | 4-Bromophenyl-phenylether | 1.5 U |
| 118-74-1 | Hexachlorobenzene | 1.5 U |
| 87-86-5 | Pentachlorophenol | 2.0 U |
| 85-01-8 | Phenanthrene | 1.0 U |
| 120-12-7 | Anthracene | 2.5 U |
| 84-74-2 | Di-n-Butylphthalate | 2.0 U |
| 206-44-0 | Fluoranthene | 1.5 U |
| 129-00-0 | Pyrene | 1.5 U |
| 85-68-7 | Butylbenzylphthalate | 3.5 U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 20 U |
| 56-55-3 | Benzo(a)Anthracene | 1.5 U |
| 117-81-7 | bis(2-Ethylhexyl)Phthalate | 7 ~~B~~ u 6/1/88 |
| 218-01-9 | Chrysene | 1.5 U |
| 117-84-0 | Di-n-Octyl Phthalate | 1.5 U |
| 205-99-2 | Benzo(b)Fluoranthene | 1.5 U |
| 207-08-9 | Benzo(k)Fluoranthene | 1.5 U |
| 50-32-8 | Benzo(a)Pyrene | 2.0 U |
| 193-39-5 | Indeno(1,2,3-cd)Pyrene | 3.5 U |
| 53-70-3 | Dibenz(a,h)Anthracene | 2.5 U |
| 191-24-2 | Benzo(g,h,i)Perylene | 4.0 U |

(1) - Cannot be separated from diphenylamine

CLF: 10/11/85

Form I

Prepared by:

ORGANICS ANALYSIS DATA SHEET
Page 4
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: CAL Case No. 9521/375BE Sample No. EX963

GC Report No. 375BE Lab Sample No. 4141002AB

Probability that Identification is Correct:
A= HIGH B= MODERATE C= UNKNOWN D= SOLVENT IMPURITY, see VOA

| | CAS# | COMPOUND NAME | FRACTION | SCAN NUMBER | PURITY | Estimated CONC. J VALUE |
|---|---|---|---|---|---|---|
| 1. | 30691-59-9 | AZIRIDINE, 1-HEXYL- | A/BN | 350 | 532 | 2.6 UG/L |

| | COMPOUND NAME | PROBABILITY | COMMENTS |
|---|---|---|---|
| 1. | AZIRIDINE, 1-HEXYL- | 1. C | 1. |

FORM 1, PART B

Sample Number
EX 965

# Organics Analysis Data Sheet
(Page 1)

Laboratory Name: ENSECO CAL LAB
Case No: 9487/3758E
Lab Sample ID No: 41410-3
QC Report No: 3758E
Sample Matrix: WATER
Contract No: 68-W8-0069
Data Release Authorized By:
Date Sample Received: 5/6/88

## Volatile Compounds

Concentration: Low
Date Extracted/Prepared: 5/13/88
Date Analyzed: 5/13/88
Conc/Dil Factor: 1 pH: NR
Percent Moisture: NR
Percent Moisture (Decanted): NR

| CAS Number | | ug/L |
|---|---|---|
| 74-87-3 | Chloromethane | 5 U |
| 74-83-9 | Bromomethane | 5 U |
| 75-01-4 | Vinyl Chloride | 5 U |
| 75-00-3 | Chloroethane | 1 U |
| 75-09-2 | Methylene Chloride | 5 U |
| 67-64-1 | Acetone | 10 U |
| 75-15-0 | Carbon Disulfide | 1 U |
| 75-35-4 | 1,1-Dichloroethene | 1 U |
| 75-34-3 | 1,1-Dichloroethane | 1 U |
| 156-60-5 | Trans-1,2-Dichloroethene | 1 U |
| 67-66-3 | Chloroform | 1 U |
| 107-06-2 | 1,2-Dichloroethane | 1 U |
| 78-93-3 | 2-Butanone | 10 U |
| 71-55-6 | 1,1,1-Trichloroethane | 1 U |
| 56-23-5 | Carbon Tetrachloride | 1 U |
| 108-05-4 | Vinyl Acetate | 10 U |
| 75-27-4 | Bromodichloromethane | 1 U |

| CAS Number | | ug/L |
|---|---|---|
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 1 U |
| 78-87-5 | 1,2-Dichloropropane | 1 U |
| 10061-02-6 | Trans-1,3-Dichloropropene | 1 U |
| 79-01-6 | Trichloroethene | 1 U |
| 124-48-1 | Dibromochloromethane | 1 U |
| 79-00-5 | 1,1,2-Trichloroethane | 1 U |
| 71-43-2 | Benzene | 1 U |
| 10061-01-5 | cis-1,3-Dichloropropene | 1 U |
| 110-75-8 | 2-Chloroethylvinylether | 10 U |
| 75-25-2 | Bromoform | 1 U |
| 591-78-6 | 2-Hexanone | 10 U |
| 108-10-1 | 4-Methyl-2-Pentanone | 10 U |
| 127-18-4 | Tetrachloroethene | 1 U |
| 108-88-3 | Toluene | 3 |
| 108-90-7 | Chlorobenzene | 1 U |
| 100-41-4 | Ethylbenzene | 1 U |
| 100-42-5 | Styrene | 1 U |
| | Total Xylenes | 1 U |

**Data Reporting Qualifiers**

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

**Value** If the result is a value greater than or equal to the detection limit, report the value.

**U** Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U (e.g. 10U) based on necessary concentration/dilution actions. (This is not necessarily the instrument detection limit.) The footnote should read: U - Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample

**J** Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicated the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. (e.g. 10J). If limit of detection is 10ug/l and a concentration of 3ug/l is calculated, report as 3J

**C** This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides >= 10ng/ul in the final extract should be confirmed by GC/MS

**B** This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

**Other** Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

NA Not Analyzed.
# See cover letter.
NR Not Required.
S Spiked Compound.

Prepared by:

ORGANICS ANALYSIS DATA SHEET
PAGE 4
TENTATIVELY IDENTIFIED COMPOUNDS

AB NAME: CAL CASE NO. 9521/375BE SAMPLE NO. EX965

IC REPORT NO. 3158E LAB SAMPLE NO. 4141003V

PROBABILITY THAT IDENTIFICATION IS CORRECT:
A= HIGH B= MODERATE C= LOW D= SEE ABN

| | CAS# | COMPOUND NAME | FRACTION | SCAN NUMBER | PURITY | ESTIMATED CONC. J VALUE |
|---|---|---|---|---|---|---|
| 1 | 127-18-4 | ETHENE, TETRACHLORO- | VOA | 307 | 969 | 5.9 UG/L |

| | COMPOUND NAME | PROBABILITY | COMMENTS |
|---|---|---|---|
| 1 | ETHENE, TETRACHLORO- | 1. A | 1. target cmpd. below R.L. |

FORM 1, PART B

Case No:9521/3758E

Sample Number
EX 965

# Organics Analysis Data Sheet
(Page 2)

## Semivolatile Compounds

Concentration: Low

Date Extracted/Prepared: 5/5/88

Date Analyzed: 5/18/88

Conc/DiL Factor: 1

GPC Cleanup: NO

Separatory Funnel Extraction: YES

Continuous Liquid - Liquid Extraction: NO

| CAS Number | | ug/L |
|---|---|---|
| 108-95-2 | Phenol | 1.0 U |
| 111-44-4 | bis(-2-Chloroethyl)Ether | 1.0 U |
| 95-57-8 | 2-Chlorophenol | 1.0 U |
| 541-73-1 | 1,3-Dichlorobenzene | 1.0 U |
| 106-46-7 | 1,4-Dichlorobenzene | 1.0 U |
| 100-51-6 | Benzyl Alcohol | 1.0 U |
| 95-50-1 | 1,2-Dichlorobenzene | 1.0 U |
| 95-48-7 | 2-Methylphenol | 1.0 U |
| 39638-32-9 | bis(2-chloroisopropyl)Ether | 1.0 U |
| 106-44-5 | 4-Methylphenol | 1.0 U |
| 621-64-7 | N-Nitroso-Di-n-Propylamine | 1.0 U |
| 67-72-1 | Hexachloroethane | 1.0 U |
| 98-95-3 | Nitrobenzene | 1.0 U |
| 78-59-1 | Isophorone | 1.0 U |
| 88-75-5 | 2-Nitrophenol | 1.0 U |
| 105-67-9 | 2,4-Dimethylphenol | 1.0 U |
| 65-85-0 | Benzoic Acid | 20 U |
| 111-91-1 | bis(-2-Chloroethoxy)Methane | 1.0 U |
| 120-83-2 | 2,4-Dichlorophenol | 1.0 U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 1.0 U |
| 91-20-3 | Naphthalene | 1.0 U |
| 106-47-8 | 4-Chloroaniline | 1.0 U |
| 87-68-3 | Hexachlorobutadiene | 1.0 U |
| 59-50-7 | 4-Chloro-3-Methylphenol | 1.0 U |
| 91-57-6 | 2-Methylnaphthalene | 1.0 U |
| 77-47-4 | Hexachlorocyclopentadiene | 1.0 U |
| 88-06-2 | 2,4,6-Trichlorophenol | 1.0 U |
| 95-95-4 | 2,4,5-Trichlorophenol | 1.0 U |
| 91-58-7 | 2-Chloronaphthalene | 1.0 U |
| 88-74-4 | 2-Nitroaniline | 5.0 U |
| 131-11-3 | Dimethyl Phthalate | 1.0 U |
| 208-96-8 | Acenaphthylene | 1.0 U |
| 99-09-2 | 3-Nitroaniline | 5.0 U |

| CAS Number | | ug/L |
|---|---|---|
| 83-32-9 | Acenaphthene | 1.0 U |
| 51-28-5 | 2,4-Dinitrophenol | 15 U |
| 100-02-7 | 4-Nitrophenol | 15 U |
| 132-64-9 | Dibenzofuran | 1.0 U |
| 121-14-2 | 2,4-Dinitrotoluene | 1.0 U |
| 606-20-2 | 2,6-Dinitrotoluene | 1.0 U |
| 84-66-2 | Diethylphthalate | 1.0 U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 1.0 U |
| 86-73-7 | Fluorene | 1.0 U |
| 100-01-6 | 4-Nitroaniline | 5.0 U |
| 534-52-1 | 4,6-Dinitro-2-Methylphenol | 15 U |
| 86-30-6 | N-Nitrosodiphenylamine(1) | 1.5 U |
| 101-55-3 | 4-Bromophenyl-phenylether | 1.5 U |
| 118-74-1 | Hexachlorobenzene | 1.5 U |
| 87-86-5 | Pentachlorophenol | 2.0 U |
| 85-01-8 | Phenanthrene | 1.0 U |
| 120-12-7 | Anthracene | 2.5 U |
| 84-74-2 | Di-n-Butylphthalate | 2.0 U |
| 206-44-0 | Fluoranthene | 1.5 U |
| 129-00-0 | Pyrene | 1.5 U |
| 85-68-7 | Butylbenzylphthalate | 3.5 U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 20 U |
| 56-55-3 | Benzo(a)Anthracene | 1.5 U |
| 117-81-7 | bis(2-Ethylhexyl)Phthalate | ~~7.8~~ 4 U |
| 218-01-9 | Chrysene | 1.5 U |
| 117-84-0 | Di-n-Octyl Phthalate | 1.5 U |
| 205-99-2 | Benzo(b)Fluoranthene | 1.5 U |
| 207-08-9 | Benzo(k)Fluoranthene | 1.5 U |
| 50-32-8 | Benzo(a)Pyrene | 2.0 U |
| 193-39-5 | Indeno(1,2,3-cd)Pyrene | 3.5 U |
| 53-70-3 | Dibenz(a,h)Anthracene | 2.5 U |
| 191-24-2 | Benzo(g,h,i)Perylene | 4.0 U |

(1) - Cannot be separated from diphenylamine

4/6/88

CLF: 10/11/85 Form I Prepared by: 7/85

ORGANICS ANALYSIS DATA SHEET
Page 4
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: CAL Case No. 9521/3758E Sample No. EX965

QC Report No. 3758E Lab Sample No. 4141003AB

Probability that Identification is Correct:
A= HIGH B= MODERATE C= UNKNOWN D= SOLVENT IMPURITY, see VOA

| | CAS# | COMPOUND NAME | FRACTION | SCAN NUMBER | PURITY | Estimated CONC. J VALUE |
|---|---|---|---|---|---|---|
| 1. | 30691-59-9 | AZIRIDINE, 1-HEXYL- | A/BN | 350 | 483 | 2.9 UG/L |

| | COMPOUND NAME | PROBABILITY | COMMENTS |
|---|---|---|---|
| 1. | AZIRIDINE, 1-HEXYL- | 1. C | 1. |

FORM 1, PART B

Sample Number
EX 966

# Organics Analysis Data Sheet
(Page 1)

Laboratory Name: ENSECO CAL LAB
Case No: 9487/3758E
Lab Sample ID No: 41410-4
QC Report No: 3758E
Sample Matrix: WATER
Contract No: 68-W8-0069
Data Release Authorized By:
Date Sample Received: 5/6/88

## Volatile Compounds

Concentration: Low
Date Extracted/Prepared: 5/13/88
Date Analyzed: 5/13/88
Conc/Dil Factor: 1 pH: NR
Percent Moisture: NR
Percent Moisture (Decanted): NR

| CAS Number | | ug/L |
|---|---|---|
| 74-87-3 | Chloromethane | 5 U |
| 74-83-9 | Bromomethane | 5 U |
| 75-01-4 | Vinyl Chloride | 5 U |
| 75-00-3 | Chloroethane | 1 U |
| 75-09-2 | Methylene Chloride | 5 U |
| 67-64-1 | Acetone | 10 U |
| 75-15-0 | Carbon Disulfide | 1 U |
| 75-35-4 | 1,1-Dichloroethene | 1 U |
| 75-34-3 | 1,1-Dichloroethane | 1 U |
| 156-60-5 | Trans-1,2-Dichloroethene | 1 U |
| 67-66-3 | Chloroform | 1 U |
| 107-06-2 | 1,2-Dichloroethane | 1 U |
| 78-93-3 | 2-Butanone | 10 U |
| 71-55-6 | 1,1,1-Trichloroethane | 1 U |
| 56-23-5 | Carbon Tetrachloride | 1 U |
| 108-05-4 | Vinyl Acetate | 10 U |
| 75-27-4 | Bromodichloromethane | 1 U |

| CAS Number | | ug/L |
|---|---|---|
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 1 U |
| 78-87-5 | 1,2-Dichloropropane | 1 U |
| 10061-02-6 | Trans-1,3-Dichloropropene | 1 U |
| 79-01-6 | Trichloroethene | 1 U |
| 124-48-1 | Dibromochloromethane | 1 U |
| 79-00-5 | 1,1,2-Trichloroethane | 1 U |
| 71-43-2 | Benzene | 1 U |
| 10061-01-5 | cis-1,3-Dichloropropene | 1 U |
| 110-75-8 | 2-Chloroethylvinylether | 10 U |
| 75-25-2 | Bromoform | 1 U |
| 591-78-6 | 2-Hexanone | 10 U |
| 108-10-1 | 4-Methyl-2-Pentanone | 10 U |
| 127-18-4 | Tetrachloroethene | 1 U |
| 108-88-3 | Toluene | 1 U |
| 108-90-7 | Chlorobenzene | 1 U |
| 100-41-4 | Ethylbenzene | 1 U |
| 100-42-5 | Styrene | 1 U |
| | Total Xylenes | 1 U |

**Data Reporting Qualifiers**

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

**Value** If the result is a value greater than or equal to the detection limit, report the value.

**U** Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U (e.g. 10U) based on necessary concentration/dilution actions. (This is not necessarily the instrument detection limit.) The footnote should read: U - Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample

**J** Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicated the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. (e.g. 10J). If limit of detection is 10ug/l and a concentration of 3ug/l is calculated, report as 3J

**C** This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides >= 10ng/ul in the final extract should be confirmed by GC/MS

**B** This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

**Other** Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

**NA** Not Analyzed.
**#** See cover letter.
**NR** Not Required.
**S** Spiked Compound

TENTATIVELY IDENTIFIED COMPOUNDS

NAME: CAL CASE NO. 9521/3758E SAMPLE NO. EX966

REPORT NO. 3758E LAB SAMPLE NO. 4141004V

PROBABILITY THAT IDENTIFICATION IS CORRECT:
A= HIGH B= MODERATE C= LOW D= SEE ABN

| | CAS# | COMPOUND NAME | FRACTION | SCAN NUMBER | PURITY | ESTIMATED CONC. J VALUE |
|---|---|---|---|---|---|---|
| 1 | 75-28-5 | PROPANE, 2-METHYL- | VOA | 70 | 924 | 22.0 UG/L |
| 2. | 71-55-6 | ETHANE, 1,1,1-TRICHLORO- | VOA | 172 | 932 | 4.3 UG/L |

| | COMPOUND NAME | PROBABILITY | COMMENTS |
|---|---|---|---|
| 1 | PROPANE, 2-METHYL- | 1. A | 1. |
| 2 | ETHANE, 1,1,1-TRICHLORO- | 2. A | 2. target cmpd. below R.L. |

FORM 1, PART B

Case No:9521/3758E

Sample Number
EX 966

# Organics Analysis Data Sheet
(Page 2)

## Semivolatile Compounds

Concentration: Low

Date Extracted/Prepared: 5/6/88

Date Analyzed: 5/18/88

Conc/DiL Factor: 1

GPC Cleanup: NO

Separatory Funnel Extraction: YES

Continuous Liquid - Liquid Extraction: NO

| CAS Number | | ug/L |
|---|---|---|
| 108-95-2 | Phenol | 1.0 U |
| 111-44-4 | bis(-2-Chloroethyl)Ether | 1.0 U |
| 95-57-8 | 2-Chlorophenol | 1.0 U |
| 541-73-1 | 1,3-Dichlorobenzene | 1.0 U |
| 106-46-7 | 1,4-Dichlorobenzene | 1.0 U |
| 100-51-6 | Benzyl Alcohol | 1.0 U |
| 95-50-1 | 1,2-Dichlorobenzene | 1.0 U |
| 95-48-7 | 2-Methylphenol | 1.0 U |
| 39638-32-9 | bis(2-chloroisopropyl)Ether | 1.0 U |
| 106-44-5 | 4-Methylphenol | 1.0 U |
| 621-64-7 | N-Nitroso-Di-n-Propylamine | 1.0 U |
| 67-72-1 | Hexachloroethane | 1.0 U |
| 98-95-3 | Nitrobenzene | 1.0 U |
| 78-59-1 | Isophorone | 1.0 U |
| 88-75-5 | 2-Nitrophenol | 1.0 U |
| 105-67-9 | 2,4-Dimethylphenol | 1.0 U |
| 65-85-0 | Benzoic Acid | 20 U |
| 111-91-1 | bis(-2-Chloroethoxy)Methane | 1.0 U |
| 120-83-2 | 2,4-Dichlorophenol | 1.0 U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 1.0 U |
| 91-20-3 | Naphthalene | 1.0 U |
| 106-47-8 | 4-Chloroaniline | 1.0 U |
| 87-68-3 | Hexachlorobutadiene | 1.0 U |
| 59-50-7 | 4-Chloro-3-Methylphenol | 1.0 U |
| 91-57-6 | 2-Methylnaphthalene | 1.0 U |
| 77-47-4 | Hexachlorocyclopentadiene | 1.0 U |
| 88-06-2 | 2,4,6-Trichlorophenol | 1.0 U |
| 95-95-4 | 2,4,5-Trichlorophenol | 1.0 U |
| 91-58-7 | 2-Chloronaphthalene | 1.0 U |
| 88-74-4 | 2-Nitroaniline | 5.0 U |
| 131-11-3 | Dimethyl Phthalate | 1.0 U |
| 208-96-8 | Acenaphthylene | 1.0 U |
| 99-09-2 | 3-Nitroaniline | 5.0 U |

| CAS Number | | ug/L |
|---|---|---|
| 83-32-9 | Acenaphthene | 1.0 U |
| 51-28-5 | 2,4-Dinitrophenol | 15 U |
| 100-02-7 | 4-Nitrophenol | 15 U |
| 132-64-9 | Dibenzofuran | 1.0 U |
| 121-14-2 | 2,4-Dinitrotoluene | 1.0 U |
| 606-20-2 | 2,6-Dinitrotoluene | 1.0 U |
| 84-66-2 | Diethylphthalate | 1.0 U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 1.0 U |
| 86-73-7 | Fluorene | 1.0 U |
| 100-01-6 | 4-Nitroaniline | 5.0 U |
| 534-52-1 | 4,6-Dinitro-2-Methylphenol | 15 U |
| 86-30-6 | N-Nitrosodiphenylamine(1) | 1.5 U |
| 101-55-3 | 4-Bromophenyl-phenylether | 1.5 U |
| 118-74-1 | Hexachlorobenzene | 1.5 U |
| 87-86-5 | Pentachlorophenol | 2.0 U |
| 85-01-8 | Phenanthrene | 1.0 U |
| 120-12-7 | Anthracene | 2.5 U |
| 84-74-2 | Di-n-Butylphthalate | 2.0 U |
| 206-44-0 | Fluoranthene | 1.5 U |
| 129-00-0 | Pyrene | 1.5 U |
| 85-68-7 | Butylbenzylphthalate | 3.5 U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 20 U |
| 56-55-3 | Benzo(a)Anthracene | 1.5 U |
| 117-81-7 | bis(2-Ethylhexyl)Phthalate | 4 B U |
| 218-01-9 | Chrysene | 1.5 U |
| 117-84-0 | Di-n-Octyl Phthalate | 1.5 U |
| 205-99-2 | Benzo(b)Fluoranthene | 1.5 U |
| 207-08-9 | Benzo(k)Fluoranthene | 1.5 U |
| 50-32-8 | Benzo(a)Pyrene | 2.0 U |
| 193-39-5 | Indeno(1,2,3-cd)Pyrene | 3.5 U |
| 53-70-3 | Dibenz(a,h)Anthracene | 2.5 U |
| 191-24-2 | Benzo(g,h,i)Perylene | 4.0 U |

(1) - Cannot be separated from diphenylamine

CLF: 10/11/85

Form I

Prepared by:

ORGANICS ANALYSIS DATA SHEET
Page 4
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: CAL Case No. 9521/3758E Sample No. EX966

Report No. 3758E Lab Sample No. 4141004AB

Probability that Identification is Correct:
A= HIGH B= MODERATE C= UNKNOWN D= SOLVENT IMPURITY, see VOA

| CAS# | COMPOUND NAME | FRACTION | SCAN NUMBER | PURITY | Estimated CONC. J VALUE |
|---|---|---|---|---|---|
| | No A/BN | | | | |

FORM 1, PART B

Case No:9521/3758E

Sample Number
EX 961

# Organics Analysis Data Sheet
(Page 3)

**Pesticide/PCBs**

Concentration: LOW

Date Extracted/Prepared: 5/6/88

Date Analyzed: 5/17/88

Conc/Dil Factor: 1

GPC Cleanup: NO

Separatory Funnel Extraction: YES

Continuous Liquid - Liquid Extraction: NO

| CAS Number | | ug/L |
|---|---|---|
| 319-84-6 | Alpha-BHC | 0.010 U |
| 319-85-7 | Beta-BHC | 0.0050 U |
| 319-86-8 | Delta-BHC | 0.0050 U |
| 58-89-9 | Gamma-BHC (Lindane) | 0.0050 U |
| 76-44-8 | Heptachlor | 0.030 U |
| 309-00-2 | Aldrin | 0.0050 U |
| 1024-57-3 | Heptachlor Epoxide | 0.0050 U |
| 959-98-8 | Endosulfan I | 0.010 U |
| 60-57-1 | Dieldrin | 0.010 U |
| 72-55-9 | 4,4'-DDE | 0.0050 U |
| 72-20-8 | Endrin | 0.010 U |
| 33213-65-9 | Endosulfan II | 0.010 U |
| 72-54-8 | 4,4'-DDD | 0.020 U |
| 1031-07-8 | Endosulfan Sulfate | 0.10 U |
| 50-29-3 | 4,4'-DDT | 0.020 U |
| 72-43-5 | Methoxychlor | 0.020 U |
| 53494-70-5 | Endrin Ketone | 0.030 U |
| 57-74-9 | Chlordane | 0.020 U |
| 8001-35-2 | Toxaphene | 0.25 U |
| 12674-11-2 | Aroclor-1016 | 0.10 U |
| 11104-28-2 | Aroclor-1221 | 0.10 U |
| 11141-16-5 | Aroclor-1232 | 0.10 U |
| 53469-21-9 | Aroclor-1242 | 0.10 U |
| 12672-29-6 | Aroclor-1248 | 0.10 U |
| 11097-69-1 | Aroclor-1254 | 0.10 U |
| 11096-82-5 | Aroclor-1260 | 0.10 U |

$V_i$ = Volume of extract injected (ul)

$V_s$ = Volume of water extracted (ml)

$W_s$ = Weight of sample extracted (g)

$V_t$ = Volume of total extract (ul)

$V_s$ =970 or $W_s$ =NR $V_t$ = 5000 $V_i$ = 5

Prepared by:

EX 963

# Organics Analysis Data Sheet
(Page 3)

## Pesticide/PCBs

Concentration: LOW

GPC Cleanup: NO

Date Extracted/Prepared: 5/6/88

Separatory Funnel Extraction: YES

Date Analyzed: 5/17/88

Continuous Liquid - Liquid Extraction: NO

Conc/Dil Factor: 1

| CAS Number | | ug/L |
|---|---|---|
| 319-84-6 | Alpha-BHC | 0.010 U |
| 319-85-7 | Beta-BHC | 0.0050 U |
| 319-86-8 | Delta-BHC | 0.0050 U |
| 58-89-9 | Gamma-BHC (Lindane) | 0.0050 U |
| 76-44-8 | Heptachlor | 0.030 U |
| 309-00-2 | Aldrin | 0.0050 U |
| 1024-57-3 | Heptachlor Epoxide | 0.0050 U |
| 959-98-8 | Endosulfan I | 0.010 U |
| 60-57-1 | Dieldrin | 0.010 U |
| 72-55-9 | 4,4'-DDE | 0.0050 U |
| 72-20-8 | Endrin | 0.010 U |
| 33213-65-9 | Endosulfan II | 0.010 U |
| 72-54-8 | 4,4'-DDD | 0.020 U |
| 1031-07-8 | Endosulfan Sulfate | 0.10 U |
| 50-29-3 | 4,4'-DDT | 0.020 U |
| 72-43-5 | Methoxychlor | 0.020 U |
| 53494-70-5 | Endrin Ketone | 0.030 U |
| 57-74-9 | Chlordane | 0.020 U |
| 8001-35-2 | Toxaphene | 0.26 U |
| 12674-11-2 | Aroclor-1016 | 0.10 U |
| 11104-28-2 | Aroclor-1221 | 0.10 U |
| 11141-16-5 | Aroclor-1232 | 0.10 U |
| 53469-21-9 | Aroclor-1242 | 0.10 U |
| 12672-29-6 | Aroclor-1248 | 0.10 U |
| 11097-69-1 | Aroclor-1254 | 0.10 U |
| 11096-82-5 | Aroclor-1260 | 0.10 U |

$V_i$ = Volume of extract injected (ul)

$V_s$ = Volume of water extracted (ml)

$W_s$ = Weight of sample extracted (g)

$V_t$ = Volume of total extract (ul)

$V_s$ =790 or $W_s$ =NR $V_t$ = 5000 $V_i$ = 5

Sample Number
EX 965

# Organics Analysis Data Sheet
(Page 3)

**Pesticide/PCBs**

Concentration: LOW

Date Extracted/Prepared: 5/6/88

Date Analyzed: 5/17/88

Conc/Dil Factor: 1

GPC Cleanup: NO

Separatory Funnel Extraction: YES

Continuous Liquid - Liquid Extraction: NO

| CAS Number | | ug/L |
|---|---|---|
| 319-84-6 | Alpha-BHC | 0.010 U |
| 319-85-7 | Beta-BHC | 0.0050 U |
| 319-86-8 | Delta-BHC | 0.0050 U |
| 58-89-9 | Gamma-BHC (Lindane) | 0.0050 U |
| 76-44-8 | Heptachlor | 0.030 U |
| 309-00-2 | Aldrin | 0.0050 U |
| 1024-57-3 | Heptachlor Epoxide | 0.0050 U |
| 959-98-8 | Endosulfan I | 0.010 U |
| 60-57-1 | Dieldrin | 0.010 U |
| 72-55-9 | 4,4'-DDE | 0.0050 U |
| 72-20-8 | Endrin | 0.010 U |
| 33213-65-9 | Endosulfan II | 0.010 U |
| 72-54-8 | 4,4'-DDD | 0.020 U |
| 1031-07-8 | Endosulfan Sulfate | 0.10 U |
| 50-29-3 | 4,4'-DDT | 0.020 U |
| 72-43-5 | Methoxychlor | 0.020 U |
| 53494-70-5 | Endrin Ketone | 0.030 U |
| 57-74-9 | Chlordane | 0.020 U |
| 8001-35-2 | Toxaphene | 0.25 U |
| 12674-11-2 | Aroclor-1016 | 0.10 U |
| 11104-28-2 | Aroclor-1221 | 0.10 U |
| 11141-16-5 | Aroclor-1232 | 0.10 U |
| 53469-21-9 | Aroclor-1242 | 0.10 U |
| 12672-29-6 | Aroclor-1248 | 0.10 U |
| 11097-69-1 | Aroclor-1254 | 0.10 U |
| 11096-82-5 | Aroclor-1260 | 0.10 U |

$V_i$ = Volume of extract injected (ul)

$V_s$ = Volume of water extracted (ml)

$W_s$ = Weight of sample extracted (g)

$V_t$ = Volume of total extract (ul)

$V_s$ =870 or $W_s$ =NR $V_t$ = 5000 $V_i$ = 5

EX 966

# Organics Analysis Data Sheet
(Page 3)

## Pesticide/PCBs

Concentration: LOW

Date Extracted/Prepared: 5/6/88

Date Analyzed: 5/18/88

Conc/Dil Factor: 1

GPC Cleanup: NO

Separatory Funnel Extraction: YES

Continuous Liquid - Liquid Extraction: NO

| CAS Number | | ug/L |
|---|---|---|
| 319-84-6 | Alpha-BHC | 0.010 U |
| 319-85-7 | Beta-BHC | 0.0050 U |
| 319-86-8 | Delta-BHC | 0.0050 U |
| 58-89-9 | Gamma-BHC (Lindane) | 0.0050 U |
| 76-44-8 | Heptachlor | 0.030 U |
| 309-00-2 | Aldrin | 0.0050 U |
| 1024-57-3 | Heptachlor Epoxide | 0.0050 U |
| 959-98-8 | Endosulfan I | 0.010 U |
| 60-57-1 | Dieldrin | 0.010 U |
| 72-55-9 | 4,4'-DDE | 0.0050 U |
| 72-20-8 | Endrin | 0.010 U |
| 33213-65-9 | Endosulfan II | 0.010 U |
| 72-54-8 | 4,4'-DDD | 0.020 U |
| 1031-07-8 | Endosulfan Sulfate | 0.10 U |
| 50-29-3 | 4,4'-DDT | 0.020 U |
| 72-43-5 | Methoxychlor | 0.020 U |
| 53494-70-5 | Endrin Ketone | 0.030 U |
| 57-74-9 | Chlordane | 0.020 U |
| 8001-35-2 | Toxaphene | 0.25 U |
| 12674-11-2 | Aroclor-1016 | 0.10 U |
| 11104-28-2 | Aroclor-1221 | 0.10 U |
| 11141-16-5 | Aroclor-1232 | 0.10 U |
| 53469-21-9 | Aroclor-1242 | 0.10 U |
| 12672-29-6 | Aroclor-1248 | 0.10 U |
| 11097-69-1 | Aroclor-1254 | 0.10 U |
| 11096-82-5 | Aroclor-1260 | 0.10 U |

$V_i$ = Volume of extract injected (ul)

$V_s$ = Volume of water extracted (ml)

$W_s$ = Weight of sample extracted (g)

$V_t$ = Volume of total extract (ul)

$V_s$ =940 or $W_s$ =NR $V_t$ = 5000 $V_i$ = 5

# 3

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International Specialists in the Environment

CRL Receipt Date 5/5 FIT Receipt Date 5/31 Review Completed 6/15/88

TO: G. Breen
FROM: Zena Gold-Kaufman ZGK
SUBJECT: Inland Steel
PAN: MN0162 (1 hour charged for review) Case # 9250

Sample Description

| Organics (VOA, ABN, Pest/PCB) | | Inorganics (Metals, Cyanide) | |
|---|---|---|---|
| # | Low Soil | # | Low Soil |
| | Low Water | | Low Water |
| | Drinking Water | 4 | Drinking Water |
| | Other | | Other |

Project Data Status _____ Completed!!

_____ Incomplete, awaiting _____

FIT Data Review Findings:

There are no qualifiers on this data- as CRL does not require qualifiers.

***Check Data Sheets for Transcription Errors***

✓ Compounds were detected in sample(s); see enclosed sheet.

Book No. 8 Page No. 64 Date Sampled 5/4/88

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8TF A05 [illegible] ZZ

JM 31 May 88

ACTIVITY # ~~C76100~~ C761ZZ

# ENVIRONMENTAL PROTECTION AGENCY
## FOR THE TEAM: METALS

DIVISION/BRANCH SUPERFUND (FIT) SAMPLE DATE 5/5/88 LAB ARRIVAL DATE 5/6/88 DUE DATE 5/27/88

DU NUMBER Y405 DATA SET NUMBER 5094 STUDY INLAND STEEL ST. PAUL, MINN PRIORITY N CONTRACTOR N

| CRL LOG NUMBER | SAMPLE DESCRIPTION | TOTAL METALS WATER TOTAL ICAP UG/L MET111 | TOTAL METALS WATER AS UG/L MET161 | TOTAL METALS WATER PB UG/L MET1191 | TOTAL METALS WATER SB UG/L MET1201 | TOTAL METALS WATER SE UG/L MET1211 | TOTAL METALS WATER TL UG/L MET1221 |
|---|---|---|---|---|---|---|---|
| 88FB19S05 | RW1 5-157863 | X | X <2 | X <2 | X <2 | X <2 PM 5-23-88 | X <2 |
| 88FB19S06 | RW2 5-157876 | X | X <2 | X <2 | X <2 | X <2 MS 5/23/88 | X <2 |
| 88FB19D06 | DUPLICATE 5-157890 | X | X <2 | X <2 | X <2 | X <2 PM 5-23-88 | X <2 |
| 88FB19K01 | BLANK 5-157897 | X | X <2 | X <2 | X <2 | X <2 MS 5/23/88 | X <2 |
| | | | PM | MMT | MS | | MS |
| | | | 5-18-88 | 5-10-88 | 5/25/88 | | 5/23/88 |

[illegible] JUN 07 1988

U.S. EPA CENTRAL REGIONAL LAB

8TFA05WU2 1

ACTIVITY # ~~C76100~~ C76122

(9)

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: METALS

DIVISION/BRANCH SUPERFUND (FIT) SAMPLING DATE 5/5/88 LAB ARRIVAL DATE 5/6/88 DUE DATE 5/27/88

DU NUMBER Y905 DATASET NUMBER 5094 STUDY INLAND STEEL ST. PAUL, MINNESOTA PRIORITY N CONTRACTOR N

| CRL LOG NUMBER | SAMPLE DESCRIPTION | MATRIX WATER CADMIUM (CD) TEST UNITS UG/L ME1235826 | |
|---|---|---|---|
| 88FB19 | | | |
| SU5 | RW1 5-157863 | X ~~Z2~~ <0.2 | |
| SU6 | RW2 5-157876 | X ~~Z2~~ <0.2 ~~<0.10~~ | |
| DU6 | DUPLICATE 5-157890 | X ~~Z2~~ <0.2 | |
| RU1 | BLANK 5-157897 | X ~~Z2~~ <0.2 | |
| | | ~~AAS~~ | PM |
| | | ~~5/23/88~~ | 5-26-88 |

JUN 09 1988

U.S. EPA CENTRAL REGIONAL LAB

CRL 3/8

-121188

UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION 5
CHICAGO, ILLINOIS

9521/3758

27 MAY 1988

DATE:

SUBJECT: Review of Region 5 data for Inland Steel

FROM: Curtis Ross, Director CR
Region 5 Central Regional Laboratory

To. Data User: FIT

Attached are the results for:

CRL Data Set Numbers: SF 5094
Sample Numbers: 88FB19S05-R01
Parameter(s): ICP
Laboratory: CRL

Results Status

(X) DATA ACCEPTABLE FOR USE*
( ) DATA QUALIFIED AS TO USE
( ) DATA UNACCEPTABLE FOR USE

* For data acceptability requirements, refer to the method capability statement for the methods referenced.

Comments by the Quality Control Coordinator:

RECEIVED BY
S Griffin
MAY 27 1988
U.S. EPA CENTRAL
REGIONAL LAB

If there are any questions regarding the data, refer them to Steve Parker, the Quality Control Coordinator, at 353-3805.

Please sign and date this form below and return it with any comments to:

Sylvia Griffin
Data Management Coordinator
Region 5 Central Regional Laboratory
(5SCRL)

RECEIVED BY/DATE:

Comments.

JVM
26 May 86



Y905/C761ZZ
ETFA05WUZZ

DATA SET : SF5094 Inland Steel St. Paul

| ELEMENT | | FB19R01 BLK | | FB19S05 RW1 | | FB19S06 RW2 | | FB19D06 RW4 |
|---|---|---|---|---|---|---|---|---|
| AG µg/l | < | 6.00 | < | 6.00 | < | 6.00 | < | 6.00 |
| AL | < | 80.0 | < | 80.0 | < | 80.0 | < | 80.0 |
| B | < | 80.0 | | 87.6 | < | 80.0 | < | 80.0 |
| BA | < | 6. | | 22. | | 159. | | 159. |
| BE | < | 1.00 | < | 1.00 | < | 1.00 | < | 1.00 |
| ~~CD~~ | ~~<~~ | ~~10.0~~ | ~~<~~ | ~~10.0~~ | ~~<~~ | ~~10.0~~ | ~~<~~ | ~~10.0~~ JV |
| CO | < | 6.00 | < | 6.00 | < | 6.00 | < | 6.00 |
| CR | < | 8.00 | < | 8.00 | < | 8.00 | < | 8.00 |
| CU | < | 6.00 | < | 6.00 | | 6.57 | | 6.88 |
| FE | < | 80. | | 538. | | 508. | | 522. |
| LI | < | 10.0 | | 13.1 | | 10.5 | | 10.5 |
| MN | < | 5. | | 283. | | 568. | | 566. |
| MO | < | 15.0 | < | 15.0 | < | 15.0 | < | 15.0 |
| NI | < | 15.0 | < | 15.0 | < | 15.0 | < | 15.0 |
| SN | < | 40.0 | < | 40.0 | < | 40.0 | < | 40.0 |
| SR | < | 10. | | 255. | | 123. | | 123. |
| ~~TI~~ | | ~~76.3~~ | | ~~77.3~~ | | ~~78.7~~ | | ~~77.0~~ JV |
| V | < | 5.00 | < | 5.00 | < | 5.00 | < | 5.00 |
| Y | < | 5.00 | < | 5.00 | < | 5.00 | < | 5.00 |
| ZN | < | 40.0 | < | 40.0 | < | 40.0 | < | 40.0 |
| CA mg/l | < | 0.5 | | | | | | |
| CA | | | | 88.5 | | 45.2 | | 45.1 |
| K | < | 5.00 | < | 5.00 | < | 5.00 | < | 5.00 |
| MG | < | 0.1 | | 34.6 | | 15.7 | | 15.7 |
| NA | < | 1.00 | | 8.80 | | 7.22 | | 7.20 |

O – ~~ZGK~~ 6/15/88

Iron Comp

recd 5/18/88

UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION 5
CHICAGO ILLINOIS

17 MAY 1988

S Griffin

U.S. E...
REGIONAL ...

DATE

SUBJECT Review of Region 5 data for Inland Steel

FROM Curtis Ross Director
Region 5 Central Regional Laboratory

To Data User FIT

Attached are the results for

CRL Data Set Numbers SF 5094
Sample Numbers 88 FB 19505 / D06 R01
Parameter(s) CN
Laboratory CRL

Results Status

(✓) DATA ACCEPTABLE FOR USE*
( ) DATA QUALIFIED AS TO USE
( ) DATA UNACCEPTABLE FOR USE

* For data acceptability requirements refer to the method capability statement for the methods referenced

Comments by the Quality Control Coordinator

If there are any questions regarding the data refer them to Steve Parker, the Quality Control Coordinator, at 353-3805

Please sign and date this form below and return it with any comments to

Sylvia Griffin
Data Management Coordinator
Region 5 Central Regional Laboratory
(5SCRL)

RECEIVED BY/DATE:

Comments

ACTIVITY #C 76100 OK-DB 5/10/88

# ENVIRONMENTAL PROTECTION AGENCY
## FOR THE TEAM: MINERALS - NUTRIENTS

DIVISION/BRANCH SUPER FUND (FIT) SAMPLE DATE 5/5/88 LAB ARRIVAL DATE 5/6/88 DUE DATE 5/27/88

DU NUMBER Y905 DATA SET NUMBER 5094 STUDY INLAND STEEL ST. PAUL, MINNESOTA PRIORITY N CONTRACTOR N

| CRL LOG NUMBER | SAMPLE DESCRIPTION | WATER PHENOLICS UG PHENOL/L MIN 74818 | WATER CYANIDE UG CN/L MIN 74919 | WATER GROSS ALPHA P CI/L MIN 76020 | WATER $CR^{+6}$ UG $CR^{+6}$/L MIN 74616 | WATER MERCURY UG HG/L MIN 74717 |
|---|---|---|---|---|---|---|
| 88FB14S05 | RW1 5-157864 | | X * K5 | | | |
| 88FB14S06 | RW2 5-157875 | | X * K5 | | | |
| 88FB14D06 | DUPLICATE 5-157884 | | X * K5 | | | |
| 88FB14R01 | BLANK 5-157846 | | X * K5 | | | |

* These sample were tested by Auto U.V screening method # 335.3 CRL.

5/10/88
H. Pham

# 4

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International Specialists in the Environment

CRL Receipt Date 6/10/88 FIT Receipt Date 7/15/88 Review Completed 7/19/88

TO: Gerard Breen

FROM: Zena Gold-Kaufman ZGK

SUBJECT: Inland Steel

PAN: MN0163 SA (1 hour charged for review) Case # 9521

Sample Description

| Organics (VOA, ABN, Pest/PCB) | | Inorganics (Metals, Cyanide) | |
|---|---|---|---|
| # 3 | Low Soil | # | Low Soil |
| 4 | Low Water | | Low Water |
| | Drinking Water | | Drinking Water |
| | Other | | Other |

Project Data Status _____ Completed!!

_____ Incomplete, awaiting _____

FIT Data Review Findings:
Some pesticides detected in EX953, along with PAHs
EX954: Halogenated hydrocarbons, ketones.
Otherwise CLA detected

***Check Data Sheets for Transcription Errors***

_____ Compounds were detected in sample(s); see enclosed sheet.

Book No. 8 Page No. ~~04~~ 66 Date Sampled 5/4/88

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A. Organics

1. Water Samples - ug/L or ppb (parts per billion)
2. Soils or Sediments - ug/kg or ppb (parts per billion)

B. Metals

1. Water Samples - ug/L or ppb (parts per billion)
2. Soils or Sediments - mg/kg or ppm (parts per million)

DEFINITION OF FOOTNOTES TO ANALYTICAL DATA

A. Organics

| FOOTNOTE | DEFINITION | INTERPRETATION |
|---|---|---|
| U | Indicates compound was analyzed for but not detected. | Compound was not detected. |
| J | Indicates an estimated value. | Compound value may be semi-quantitative. |
| UJ | Quantitation limit is estimated due to a Quality Control (QC) protocol. | Compound was not detected. |
| C | This flag applies to pesticide results where the identification has been confirmed by GC/MS. Single component pesticides >10 ng/ul in the final extract shall be confirmed by GC/MS. | Compound was confirmed by mass spectroscopy |
| B | This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action. | Compound value may be semi-quantitative if it is <5x the blank concentration (<10x the blank concentrations for common lab artifacts: phthalates, methylene chloride acetone, toluene, 2-butanone). |
| E | This flag identifies compounds whose concentrations exceed the calibration range of the GC/MS instrument for that specific analysis. This flag will not apply to pesticides/PCBs analyzed by GC/EC methods. | Compound value may be semi-quantitative. |
| D | This flag identifies all compounds identified in an analysis at a secondary dilution factor. | Alerts data user to a possible change in the CRQL. |
| | This flag indicates that a TIC is a suspected aldol-condensation product. | Alerts data user of a lab artifact. |
| R | Results are unusable due to a major violation of QC protocol. | Compound value is not usable. |

B. Metals

| FOOTNOTE | DEFINITION | INTERPRETATION |
|---|---|---|
| NEW | | |
| E | Estimated or not reported due to interference. See laboratory narrative. | Compound or element was not detected or value may be semi-quantitative. |
| S | Analysis by Method of Standard Additions. | Value may be quantitative. |
| N | Spike recoveries outside QC protocols which indicates a possible matrix problem. Data may be biased high or low. See spike results and laboratory narrative. | Value may be quantitative or semi-quantitative. |
| * | Duplicate value outside QC protocols which indicates a possible matrix problem. | Value may be semi-quantitative. |
| + | Correlation coefficient for standard additions is less than 0.995. See review and laboratory narrative. | Data value may be biased. |
| B | Value is real, but is above instrument DL and below CRDL. | Value may be quantitative or semi-quantitative. |
| | DL is estimated because of a QC protocol. DL is possibly above or below CRDL. | Compound or element was not detected. |
| | Value is above CRDL and is an estimated value because of a QC Protocol. | Value may be semi-quantitative. |
| U | Compound was analyzed for but not detected. | Compound was not detected. |
| | Duplicate injection precision not met. | Value may be semi-quantitative. |
| | Post digestion spike for furnance AA analysis is out of control limits (35-115%), while sample absorbance is <50% of spike absorbance. | Value may be semi-quantitative. |

Other Symbols Used

Value not available due to insufficient data.
Value not calculated since chemical is not a carcinogen.
Estimated value.

7/15/88



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE: 7/13/88

SUBJECT: Review of Region V CLP Data
Received for Review on 6-10-88

FROM: Curtis Ross, Director (5SCRL)
Central Regional Laboratory
Patrick J. Chuillo for

TO: Data User: Eit

We have reviewed the data for the following case(s).

SITE NAME: Inland Steel (MWD) SMO Case No. 9521

EPA Data Set No. SF 5154 No. of Samples: 7 D.U./Activity Numbers Y905 / C72122

CRL No. 88FB21 S20-S24, D24, R05

SMO Traffic No. EX951-954, 956, 959-960

CLP Laboratory: Wantech Hrs. Required for Review: 7

Following are our findings:

This review covers 7 samples (3 soils & 4 water) for RAS Organics.

Qualifiers and Calibration outliers are noted on the following pages of the review narrative.

7/7/88

( ✓ ) Data are acceptable for use.
( ✓ ) Data are acceptable for use with qualifications referenced above. See Data Qualifier sheets and Calibration Outlier forms for flags and additional comments.
( ) Data are preliminary - pending verification by Contractor Laboratory. See Case Summary above.
( ) Data are unacceptable.

cc: Carla Dempsey, CLP Quality Assurance Office

DATA QUALIFIERS

Contractor: Wantec

Case 9521

Below is a summary of the out-of-control audits and the possible effect on the data for this case:

1. Sample holding times:-
All holding times were met for soil and water samples

2. GC/MS Tuning + GC Instrument Performance:-
All GC/MS BFB + DFTPP tuning criteria were achieved DDT + Endrin break down was <20%.

3. Calibration:-
Volatile and semi volatile outliers for initial and continuing calibrations are noted on the calibration outlier forms which follow. No outliers for PCB/Pesticide parameters were noted.

4. Blanks.
Volatile blanks VBLK0505 + VBLK0512 had detectable levels of acetone. VBLK0512 had detectable levels of 2 hexanone Acetone was also noted in all associated volatile samples at levels <10 times the blank level. Each organic Analyses data sheet (form 1) has been flagged (UJ at level indicated for this parameter. Semivolatile soil blank had detectable amounts of Di-n-octyl phthalate The water blank had bis(2-Ethyl hexyl) phthalate and Di-n-octyl phthalate below detection limit. All associated samples for these parameters are flagged UJ Pesticide/PCB blanks were free of contaminants.

5. Surrogate Recoveries:-

Reviewed by: Ali

Phone: 353-9079

Date: 7/11/

DATA QUALIFIERS

Contractor: Wantec

Case 9521

Below is a summary of the out-of-control audits and the possible effect on the data for this case:

Surrogate recoveries for VOA/semivolatile & Pesticide/PCB fractions were acceptable.

6. Matrix Spike /MSD
All volatile MS/MSD recoveries /RPD were acceptable for both water and soil matrices.
Semivolatile matrix spike for soil had low recovery for N-Nitroso-di-n-prop.(1) (40%) and pentachlorophenol (12%) and RPD for the above compound and 1,2,4-Trichlorobenzene + 4-chloro-3-methyl phenol was high (44%, 28, + 50%). The MSD had high recovery for 2,4 Dinitrotoluene (97%) and low recovery for pyrene (12%). The native ~~sample~~ unspiked sample (Ex 951) will be flagged UJ for this parameter.
The semivolatile water MS recoveries were high for 4-chloro-3-methyl phenol (122%) + 2,4, Dinitrotoluene (117%) and for MSD 4-chloro methyl phenol (105%) Dinitrotoluene (121)%. The RPD's were acceptable. The native unspiked sample (Ex 951) will be flagged UJ for these parameters.
Pesticide/PCB recoveries for MS for water were high for Lindane (146%) and Aldrin (133%) for MSD ~~the Lindane was~~ Aldrin had ~~low~~ high recovery (136%). The RPD for Lindane was high (36%). The native unspiked sample Ex 954 ~~was~~ will be flagged UJ for these parameters. The soil MS + MSD had high recoveries for Aldrin (132% 133%) the RPD's were acceptable. The native unspiked sample Ex 952 will be flagged UJ for this parameter.

Reviewed by: AK

Phone: 353/9079

Case: 9521

Contractor: Wantec

# TENTATIVELY IDENTIFIED COMPOUNDS WATCH ASSESSMENT

NOTE: Reviewer should note directly on Organic Analysis Data Sheet (OADS) those matches that in his opinion (based on contract criteria) are unreasonable.

## CRITERIA

(1) Relative intensities of major ions (>10%) reference spectrum should be present in the sample spectrum.

(2) Relative intensities of major ions in sample spectrum should agree to within ± 20% of reference spectrum intensities.

(3) Molecular ions present in reference spectrum should be present in sample spectrum.

(4) Ions present in sample spectrum, but not in reference spectrum should be reviewed for possible background contamination or presence of coeluting interferences.

(5) Ions present in reference spectrum, but not in the sample spectrum should be reviewed for possible subtraction from the sample spectrum because of background contamination or coeluting interferences.

(6) If, in the reviewer's opinion, no valid identification can be made the compound should be labelled as "unknown" and the initials and date of the reviewer placed on the OADS.

Reviewer's Initials/Date: AIC 7/7/88

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGION V
CALIBRATION OUTLIERS
SEMIVOLATILE HSL COMPOUNDS
(Page 1)

CASE/SAS # ~~9512~~ 9521 CONTRACTOR Wantec

| Instrument # | Init. Cal. | | | Cont. Cal. | | | Cont. Cal. | | | Cont. Cal. | | | Cont. Cal. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DATE/TIME: | 5/15/88 | | | 5/20/88 14:3 | | | 5/31/88 11:36 | | | | | | | | |
| | RF | %RSD | * | RF | %D | * | RF | %D | * | RF | %D | * | RF | %D | * |
| Phenol | | | | | | | | | | | | | | | |
| bis(-2-Chloroethyl)Ether | | | | | | | | | | | | | | | |
| 2-Chlorophenol | | | | | | | | | | | | | | | |
| 1,3-Dichlorobenzene | | | | | | | | | | | | | | | |
| 1,4-Dichlorobenzene | | | | | | | | | | | | | | | |
| Benzyl Alcohol | | | | | | | | | | | | | | | |
| 1,2-Dichlorobenzene | | | | | | | | | | | | | | | |
| 2-Methylphenol | | | | | | | | | | | | | | | |
| bis(2-chloroisopropyl)Ether | | | | | | | | | | | | | | | |
| 4-Methylphenol | | | | | | | | | | | | | | | |
| N-Nitroso-Di-n-Propylamine | | | | | | | | | | | | | | | |
| Hexachloroethane | | | | | | | | | | | | | | | |
| Nitrobenzene | | | | | | | | | | | | | | | |
| Isophorone | | | | | | | | | | | | | | | |
| 2-Nitrophenol | | | | | | | | | | | | | | | |
| 2,4-Dimethylphenol | | | | | | | | | | | | | | | |
| Benzoic Acid | | | | | 36.3 | J | | 44 | J | | | | | | |
| bis(2-Chloroethoxy)Methane | | | | | | | | | | | | | | | |
| 2,4-Dichlorophenol | | | | | | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | | | | | 49.9 | J | | | | | | | | | |
| Naphthalene | | | | | | | | | | | | | | | |
| 4-Chloroaniline | | | | | | | | | | | | | | | |
| Hexachlorobutadiene | | | | | | | | | | | | | | | |
| 4-Chloro-3-Methylphenol | | | | | | | | | | | | | | | |
| 2-Methylnaphthalene | | | | | | | | | | | | | | | |
| Hexachlorocyclopentadiene | | | | | | | | | | | | | | | |
| 2,4,6-Trichlorophenol | | | | | | | | | | | | | | | |
| 2,4,5-Trichlorophenol | | | | | | | | | | | | | | | |
| 2-Chloronaphthalene | | | | | | | | | | | | | | | |
| 2-Nitroaniline | | | | | | | | | | | | | | | |
| Dimethyl Phthalate | | | | | | | | | | | | | | | |
| Acenaphthylene | | | | | | | | | | | | | | | |
| 3-Nitroaniline | | | | | | | | | | | | | | | |
| Acenaphthene | | | | | | | | | | | | | | | |
| 2,4-Dinitrophenol | | | | | 118.5 | J | | | | | | | | | |
| 4-Nitrophenol | | | | | | | | | | | | | | | |
| Dibenzofuran | | | | | | | | | | | | | | | |

AFFECTED SAMPLES:

| | | | | |
|---|---|---|---|---|
| | | | | |
| | Ex956 | Ex952 | | |
| | Ex959 | Ex951 | | |
| | Ex960 | Ex953 | | |
| | Ex 954 | Ex951 | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

Reviewer Initials/Date: AM 7/7

* These flags should be applied to the analytes on the sample data sheets.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGION V
CALIBRATION OUTLIERS
SEMIVOLATILE HSL COMPOUNDS
Page 2

CASE/SAS # 9521 CONTRACTOR Wantec

| Instrument # | Init. Cal. | | | Cont. Cal. | | | Cont. Cal. | | | Cont. Cal. | | | Cont. Cal. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DATE/TIME: | 5/15/88 | | | 5/19/88 14:58 | | | 5/31/88 11:36 | | | - | | | | | |
| | RF | %RSD | * | RF | %D | * | RF | %D | * | RF | %D | * | RF | %D | * |
| 2,4-Dinitrotoluene | | | | | | | | | | | | | | | |
| 2,6-Dinitrotoluene | | | | | | | | | | | | | | | |
| Diethylphthalate | | | | | | | | | | | | | | | |
| 4-Chlorophenyl-phenylether | | | | | | | | | | | | | | | |
| Fluorene | | | | | | | | | | | | | | | |
| 4-Nitroaniline | | 38.7 | J | | 38.1 | J | | | | | | | | | |
| 4,6-Dinitro-2-Methylphenol | | | | | 73 | J | | 85 | J | | | | | | |
| N-Nitrosodiphenylamine | | | | | | | | | | | | | | | |
| 4-Bromophenyl-phenylether | | | | | | | | | | | | | | | |
| Hexachlorobenzene | | | | | | | | | | | | | | | |
| Pentachlorophenol | | | | | | | | | | | | | | | |
| Phenanthrene | | | | | | | | | | | | | | | |
| Anthracene | | | | | | | | | | | | | | | |
| Di-n-Butylphthalate | | | | | | | | | | | | | | | |
| Fluoranthene | | | | | | | | | | | | | | | |
| Pyrene | | | | | | | | | | | | | | | |
| Butylbenzylphthalate | | | | | | | | | | | | | | | |
| Benzo(a)Anthracene | | | | | | | | | | | | | | | |
| bis(2-Ethylhexyl)Phthalate | | | | | | | | | | | | | | | |
| Chrysene | | | | | | | | | | | | | | | |
| Di-n-Octyl Phthalate | | | | | | | | | | | | | | | |
| Benzo(b)Fluoranthene | | | | | | | | | | | | | | | |
| Benzo(k)Fluoranthene | | | | | | | | | | | | | | | |
| Benzo(a)Pyrene | | | | | | | | | | | | | | | |
| Indeno(1,2,3-cd)Pyrene | | | | | | | | | | | | | | | |
| Dibenz(a,h)Anthracene | | | | | | | | | | | | | | | |
| Benzo(g,h,i) Perylene | | | | | | | | | | | | | | | |

SEE PAGE 1 FOR AFFECTED SAMPLES.

* These flags should be applied to the analytes on the sample data sheets.

Reviewer's Initials/Date: AK 7/6/88

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGION V
CALIBRATION OUTLIERS
VOLATILE HSL COMPOUNDS

CASE/~~SAS~~ # 9521 Water CONTRACTOR Wantech

| Instrument # | Init. Cal. | | | Cont. Cal. | | | Cont. Cal. | | | Cont. Cal. | | | Cont. Cal. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DATE/TIME: | 5/4/88 | | | 5/5/88 11:28 | | | | | | | | | | | |
| | RF | %RSD | * | RF | %D | * | RF | %D | * | RF | %D | * | RF | %D | * |
| Chloromethane | | | | | | | | | | | | | | | |
| Bromomethane | | | | | | | | | | | | | | | |
| Vinyl Chloride | | | | | | | | | | | | | | | |
| Chloroethane | | | | | | | | | | | | | | | |
| Methylene Chloride | | | | | | | | | | | | | | | |
| Acetone | 3. | 33.2 | J | | | | | | | | | | | | |
| Carbon Disulfide | | | | | | | | | | | | | | | |
| 1,1-Dichloroethane | | | | | | | | | | | | | | | |
| 1,1-Dichloroethene | | | | | | | | | | | | | | | |
| Trans-1,2-Dichloroethene | | | | | | | | | | | | | | | |
| Chloroform | | | | | | | | | | | | | | | |
| 2-Butanone | | | | | | | | | | | | | | | |
| 1,2-Dichloroethane | | | | | 32.1 | J | | | | | | | | | |
| 1,1,1-Trichloroethane | | | | | | | | | | | | | | | |
| Carbon Tetrachloride | | | | | | | | | | | | | | | |
| Vinyl Acetate | | | | | 27.8 | J | | | | | | | | | |
| Bromodichloromethane | | | | | | | | | | | | | | | |
| 1,2-Dichloropropane | | | | | | | | | | | | | | | |
| Trans-1,3-Dichloropropene | | | | | 25.9 | J | | | | | | | | | |
| Trichloroethene | | | | | | | | | | | | | | | |
| Dibromochloromethane | | | | | | | | | | | | | | | |
| 1,1,2-Trichloroethane | | | | | | | | | | | | | | | |
| Benzene | | | | | | | | | | | | | | | |
| cis-1,3-Dichloropropene | | | | | | | | | | | | | | | |
| 2-Chloroethylvinylether | | | | | | | | | | | | | | | |
| Bromoform | | | | | | | | | | | | | | | |
| 4-Methyl-2-Pentanone | | | | | | | | | | | | | | | |
| 2-Hexanone | | | | | 29.8 | J | | | | | | | | | |
| Tetrachloroethene | | | | | | | | | | | | | | | |
| 1,1,2,2-Tetrachloroethane | | | | | | | | | | | | | | | |
| Toluene | | | | | | | | | | | | | | | |
| Chlorobenzene | | | | | | | | | | | | | | | |
| Ethylbenzene | | | | | | | | | | | | | | | |
| Styrene | | | | | | | | | | | | | | | |
| m-Xylene | | | | | | | | | | | | | | | |
| o/p-Xylene | | | | | | | | | | | | | | | |

AFFECTED SAMPLES:

Ex 960
Ex 954
Ex 956
Ex 959

Reviewer's Initials/Date: AL 7/7/88

* These flags should be applied to the analytes on the sample data sheets.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGION V
CALIBRATION OUTLIERS
VOLATILE HSL COMPOUNDS

CASE/SAS # 9521 ~~WATER~~ SOIL CONTRACTOR Wantech

| Instrument # | Init. Cal. | | | Cont. Cal. | | | Cont. Cal. | | | Cont. Cal. | | | Cont. Cal. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DATE/TIME: | 5/10/88 | | | 5/12/88 12:5 | | | | | | | | | | | |
| | RF | %RSD | * | RF | %D | * | RF | %D | * | RF | %D | * | RF | %D | * |
| Chloromethane | | | | | 32 | J | | | | | | | | | |
| Bromomethane | | | | | 49.2 | J | | | | | | | | | |
| Vinyl Chloride | | | | | | | | | | | | | | | |
| Chloroethane | | | | | | | | | | | | | | | |
| Methylene Chloride | | | | | | | | | | | | | | | |
| Acetone | | 64 | J | | | | | | | | | | | | |
| Carbon Disulfide | | | | | | | | | | | | | | | |
| 1,1-Dichloroethane | | | | | | | | | | | | | | | |
| 1,1-Dichloroethene | | | | | | | | | | | | | | | |
| Trans-1,2-Dichloroethene | | | | | | | | | | | | | | | |
| Chloroform | | | | | | | | | | | | | | | |
| 2-Butanone | | 48.4 | J | | | | | | | | | | | | |
| 1,2-Dichloroethane | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | | | | | | | | | | | | | | | |
| Carbon Tetrachloride | | | | | | | | | | | | | | | |
| Vinyl Acetate | | | | | | | | | | | | | | | |
| Bromodichloromethane | | | | | | | | | | | | | | | |
| 1,2-Dichloropropane | | | | | | | | | | | | | | | |
| Trans-1,3-Dichloropropene | | | | | 28.7 | J | | | | | | | | | |
| Trichloroethene | | | | | | | | | | | | | | | |
| Dibromochloromethane | | | | | | | | | | | | | | | |
| 1,1,2-Trichloroethane | | | | | | | | | | | | | | | |
| Benzene | | | | | | | | | | | | | | | |
| cis-1,3-Dichloropropene | | | | | | | | | | | | | | | |
| 2-Chloroethylvinylether | | | | | | | | | | | | | | | |
| Bromoform | | | | | | | | | | | | | | | |
| 4-Methyl-2-Pentanone | | 32 | J | | 25.5 | J | | | | | | | | | |
| 2-Hexanone | | 25.8 | J | | | | | | | | | | | | |
| Tetrachloroethene | | | | | | | | | | | | | | | |
| 1,1,2,2-Tetrachloroethane | | | | | 25.9 | J | | | | | | | | | |
| Toluene | | | | | | | | | | | | | | | |
| Chlorobenzene | | | | | | | | | | | | | | | |
| Ethylbenzene | | | | | | | | | | | | | | | |
| Styrene | | | | | 39.6 | J | | | | | | | | | |
| m-Xylene | | | | | | | | | | | | | | | |
| o/p-Xylene | | | | | | | | | | | | | | | |

AFFECTED SAMPLES:

Ex 951
Ex 953
Ex 952

Reviewer's Initials/Date: AA 7/7/88

* These flags should be applied to the analytes on the sample data sheets.

**LEE WAN & ASSOCIATES, INC.**

THE WAN CENTER
3342 International Park Drive, S.E., Atlanta, Georgia 30316
(404) 244-0827 • FAX (404) 243-5355

JUN 10 1988
U.S. EPA CENTRAL
REGIONAL LAB

June 9, 1988

Mr. Curtis Ross
USEPA Region V
536 South Clark Street
10th Floor, CRL
Chicago, IL 60605

Dear Mr. Ross:

Enclosed please find the data package for case number 9521 sample delivery group EX951.

This data package is due on June 14, 1988 and we are pleased to submit the results to you several days early.

If you have any questions or comments, please do not hesitate to contact me.

Sincerely,

Leon Tzou
Acting Director, Laboratory Division

LT/dem

cc: File 88603
LSDG #8035

CASE NARRATIVE

| | | | |
|---|---|---|---|
| Lab Name: | Wan Technologies, Inc. | Lab Code: | WANTEC |
| Case Number: | | 9521 | |
| Sampling Delivery Group: | | EX951 | |

The following data package contains the results of the analyses of the samples from case #9521. Four water samples and 3 low soil samples were received May 5, 1988. The deadline for submittal of the data package is the close of business on June 14, 1988. The analyses of these samples for organics were performed according to the methodologies specified in the SOW 10/86, Exhibit D (as modified 7/87). The reporting forms and instructions as provided in the "Instruction Package for Preparation of Pre-Award Performance Evaluation Samples" (8/87), were used in the preparation of this data package.

## VOLATILES

Analyses for volatiles were carried out on a Finnigan-Mat OWA-30 GC/MS (Instrument Code: 10501) equipped with an SuperIncos software package and interfaced with a Tekmar LSC-2 purge and trap system. The chromatography was carried out on a 2.4m x 2mm ID glass column packed with Carbopack B (60/80 mesh modified with 1% SP-1000). The list of TCL and TIC compounds identified and quantified in the water samples is reported in the following sections of the data package.

## SEMIVOLATILES

Analyses for semivolatiles were carried out on an Extrel Model ELQ-400 GC/MS (Instrument Code: EXTR) equipped with an Extrel software package and HP 5890A gas chromatograph. The chromatography was carried out on a J & W DB-5 fused silica column. The results of the TCL and TIC compounds identified and quantified are reported in the following sections of the data package.

PESTICIDES/PCBs

Analyses for pesticides/PCBs were carried out on an HP 5890A gas chromatograph (Instrument Code: H58901) equipped with an ECD, a Nelson Analytical data system, and an HP 3392A integrator (as backup for the data system). The chromatography was carried out on an OV-17/210 column for quantitation and on an OV-1 column for confirmation.

Because of the way the Nelson data system works, the data and time the data are processed is printed. The actual injection time has been handwritten on all chromatograms. Because of an operational error, the Nelson data system started to collect data 2.55 minutes earlier than the beginning of the GC program for one of the continuing Evaluation Mixtures B's in the OV-17/210 analysis (file 8511A45). As the result, actual retention times of all peaks should be 2.55 minutes less than those shown in that file. The chromatogram of the same run from the integrator is also included in the package for comparison.

---

Release of the data contained in this hardcopy package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Director, as verified by the following signature:

Leon Tzou

6/9/88

Leon Tzou/Acting Laboratory Director

Date

SAMPLE DATE: 5/4-5/88
LOG-IN DATE: 5/20/88
DUE DATE: 7/13/88

MAY 18 1988

SUPERFUND 5154

# CENTRAL REGIONAL LABORATORY SAMPLE DATA REPORT
## ORGANICS/INORGANICS

THIS FORM IS TO BE USED FOR SAMPLES SENT TO CONTRACT ONLY

CASE NUMBER/SAS No. 9521 SITE NAME Inland Steel LABORATORY Wantech/Weston DATE SHIPPED 5/4/88

SUPERFUND DU NUMBER U905 EPA RPM or OSC (S.M.S.)/(CES) _____ CERCLIS NUMBER MND980609907 PAGE 1 OF 1

ACTIVITY NUMBER C92100

| CRL LOG NUMBER | ORGANIC TRAFFIC REPORT NUMBER or SAS Packing List No. | INORGANIC TRAFFIC REPORT NUMBER | WATER OR LIQUIDS: ACID-BASE NEUTRAL CPDS ORGANIC SCAN UG/L TOX17574 | VOLATILE ORGANIC ANALYSIS ORGANIC SCAN UG/L TOX17564 | WATER POLYCHLORINATED BIPHENYLS UG/L PES 17144 | WATER CHLORINATED PESTICIDES UG/L PES17134 | TOTAL METALS IN WATER UG/L MET111 | WATER CYANIDE UG/L MIN74919 | NITRATE/NITRITE MG/L MIN7284 | AMMONIA MG/L MIN7294 | RESIDUE, FILTERABLE TDS MG/L MIN7362 | RESIDUE, NON-FILT TSS MG/L MIN7372 | | | SEDIMENTS or SOILS: ACID-BASE NEUTRAL CPDS ORGANIC SCAN MG/KG TOX215722 | VOLATILE ORGANIC ANALYSIS ORGANIC SCAN MG/KG TOX215622 | SEDIMENTS POLYCHLORINATED BIPHENYLS MG/KG PES211422 | SEDIMENT CHLORINATED PESTICIDES MG/KG 211322 | TOTAL METALS MG/KG MET413 | CYANIDE MG/KG MIN44930 | EP TOXICITY METALS MG/KG | AMMONIA MG/KG MIN42925 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 88FB21S20 | EX951 | MEX6161 | ✓ | | | | | | | | | | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | |
| 88FB21S21 | EX952 | MEX6171 | ✓ | | | | | | | | | | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | |
| 88FB21S22 | EX953 | MEX6181 | ✓ | | | | | | | | | | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | |
| 88FB21S23 | EX954 | MEX6191 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | | | | | | | | | | | | | |
| 88FB21S24 | EX956 | MEX6201 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | | | | | | | | | | | | | |
| 88FB21D24 | EX959 | MEX6231 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | | | | | | | | | | | | | |
| 88FB21B05 | EX960 | MEX6241 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | | | | | | | | | | | | | |
| | OSC TR | DATO | | | | | | | | | | | | | | | | | | | | | | | | |

2B

SOIL VOLATILE SURROGATE RECOVERY

Lab Name: WANTEC Contract: 68W80075

ab Code: WANTEC Case No.: 9521 SAS No.: SDG No.: EX951

'evel:(low/med) LOW

| | EPA SAMPLE NO. | S1 (TOL)# | S2 (BFB)# | S3 (DCE)# | OTHER | TOT OUT |
|---|---|---|---|---|---|---|
| 1 | VBLK | 91 | 106 | 89 | | 0 |
| 2 | EX951 | 95 | 109 | 107 | | 0 |
| 3 | EX953 | 92 | 99 | 114 | | 0 |
| 4 | EX952 | 89 | 98 | 110 | | 0 |
| 5 | EX951MS | 97 | 105 | 115 | | 0 |
| 6 | EX951MSD | 94 | 100 | 106 | | 0 |
| 7 | | | | | | |
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| | | QC LIMITS |
|---|---|---|
| S1 (TOL) | = TOLUENE-D8 | (81-117) |
| S2 (BFB) | = BROMOFLUOROBENZENE | (74-121) |
| S3 (DCE) | = 1,2-DICHLOROETHANE-D4 | (70-121) |

# Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

0006



FORM II VOA-2 1/87 Rev.

2A
WATER VOLATILE SURROGATE RECOVERY

Lab Name: WANTEC Contract: 68W80075

ab Code: WANTEC Case No.: 9521 SAS No.: SDG No.: EX951

| | EPA SAMPLE NO. | S1 (TOL)# | S2 (BFB)# | S3 (DCE)# | OTHER | TOT OUT |
|---|---|---|---|---|---|---|
| 1 | VBLK | 100 | 100 | 101 | | 0 |
| 2 | EX960 | 96 | 107 | 97 | | 0 |
| 3 | EX954 | 95 | 96 | 95 | | 0 |
| 4 | EX954MS | 97 | 96 | 107 | | 0 |
| 5 | EX954MSD | 94 | 94 | 100 | | 0 |
| 6 | EX956 | 88 | 93 | 96 | | 0 |
| 7 | EX959 | 99 | 96 | 95 | | 0 |
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| | | QC LIMITS |
|---|---|---|
| S1 (TOL) | = TOLUENE-D8 | (88-110) |
| S2 (BFB) | = BROMOFLUOROBENZENE | (86-115) |
| S3 (DCE) | = 1,2-DICHLOROETHANE-D4 | (76-114) |

# Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

0005



FORM II VOA-1 1/87 Rev.

2C

# WATER SEMIVOLATILE SURROGATE RECOVERY

Lab Name: WANTEC Contract: 68W80075

Lab Code: WANTEC Case No.: 9521 SAS No.: SDG No.: EX951

| | EPA SAMPLE NO. | S1 (NBZ)# | S2 (FBP)# | S3 (TPH)# | S4 (PHL)# | S5 (2FP)# | S6 (TBP)# | OTHER | TOT OUT |
|---|---|---|---|---|---|---|---|---|---|
| 1 | SBLK | 54 | 61 | 79 | 15 | 45 | 69 | | 0 |
| 2 | EX956 | 36 | 43 | 79 | 12 | 18 * | 67 | | 1 |
| 3 | EX959 | 40 | 43 * | 68 | 18 | 33 | 56 | | 1 |
| 4 | EX960 | 49 | 58 | 74 | 20 | 40 | 64 | | 0 |
| 5 | EX954 | 42 | 39 * | 62 | 14 | 24 | 50 | | 1 |
| 6 | EX954MS | 35 * | 49 | 70 | 18 | 26 | 59 | | 1 |
| 7 | EX954MSD | 46 | 46 | 73 | 15 | 22 | 58 | | 0 |
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| | | QC LIMITS |
|---|---|---|
| S1 (NBZ) | = Nitrobenzene-d5 | (35-114) |
| S2 (FBP) | = 2-Fluorobiphenyl | (43-116) |
| S3 (TPH) | = Terphenyl-d14 | (33-141) |
| S4 (PHL) | = Phenol-d6 | (10- 94) |
| S5 (2FP) | = 2-Fluorophenol | (21-100) |
| S6 (TBP) | = 2,4,6-Tribromophenol | (10-123) |

# Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

0211

2D
SOIL SEMIVOLATILE SURROGATE RECOVERY

Lab Name: WANTEC Contract: 68W80075

Lab Code: WANTEC Case No.: 9521 SAS No.: SDG No.: EX951

Level:(low/med) LOW

| | EPA SAMPLE NO. | S1 (NBZ)# | S2 (FBP)# | S3 (TPH)# | S4 (PHL)# | S5 (2FP)# | S6 (TBP)# | OTHER | TOT OUT |
|---|---|---|---|---|---|---|---|---|---|
| 1 | SBLK | 48 | 38 | 70 | 44 | 41 | 43 | | 0 |
| 2 | EX952 | 45 | 43 | 88 | 42 | 53 | 63 | | 0 |
| 3 | EX951 | 60 | 79 | 92 | 55 | 72 | 97 | | 0 |
| 4 | EX951MS | 67 | 78 | 93 | 68 | 76 | 93 | | 0 |
| 5 | EX951MSD | 58 | 72 | 94 | 61 | 63 | 91 | | 0 |
| 6 | EX953 | 63 | 80 | 80 | 57 | 75 | 80 | | 0 |
| 7 | EX951 DL | 48 | 70 | 82 | 49 | 70 | 80 | | 0 |
| 8 | EX951MS DL | 18 D | 68 | 80 | 64 | 76 | 78 | | 0 |
| 9 | EX951MSD DL | 44 | 67 | 81 | 57 | 58 | 75 | | 0 |
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| | | QC LIMITS |
|---|---|---|
| S1 (NBZ) | = Nitrobenzene-d5 | (23-120) |
| S2 (FBP) | = 2-Fluorobiphenyl | (30-115) |
| S3 (TPH) | = Terphenyl-d14 | (18-137) |
| S4 (PHL) | = Phenol-d6 | (24-113) |
| S5 (2FP) | = 2-Fluorophenol | (25-121) |
| S6 (TBP) | = 2,4,6-Tribromophenol | (19-122) |

# Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

0212



FORM II SV-2 1/87 Rev.

2D
SOIL SEMIVOLATILE SURROGATE RECOVERY

Lab Name: WANTEC Contract: 68W80075

Lab Code: WANTEC Case No.: 9521 SAS No.: SDG No.: EX951

Level:(low/med) MED

| | EPA SAMPLE NO. | S1 (NBZ)# | S2 (FBP)# | S3 (TPH)# | S4 (PHL)# | S5 (2FP)# | S6 (TBP)# | OTHER | TOT OUT |
|---|---|---|---|---|---|---|---|---|---|
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| | | QC LIMITS |
|---|---|---|
| S1 (NBZ) | = Nitrobenzene-d5 | (23-120) |
| S2 (FBP) | = 2-Fluorobiphenyl | (30-115) |
| S3 (TPH) | = Terphenyl-d14 | (18-137) |
| S4 (PHL) | = Phenol-d6 | (24-113) |
| S5 (2FP) | = 2-Fluorophenol | (25-121) |
| S6 (TBP) | = 2,4,6-Tribromophenol | (19-122) |

# Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

0213



FORM II SV-2

1/87 Rev.

2F

# SOIL PESTICIDE SURROGATE RECOVERY

ab Name: WANTEC Contract: 68W80075

Lab Code: WANTEC Case No.: 9521 SAS No.: SDG No.: EX951

evel:(low/med) LOW

| | EPA SAMPLE NO. | S1 (DBC)# | OTHER |
|---|---|---|---|
| 1 | PBLK | 104 | |
| 2 | EX951 | 114 | |
| 3 | EX952 | 39 | |
| 4 | EX952MS | 132 | |
| 5 | EX952MSD | 116 | |
| 6 | EX953 | 114 | |
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ADVISORY QC LIMITS (20-150)

S1 (DBC) = DIBUTYL CHLORENDATE

# Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

2E

# WATER PESTICIDE SURROGATE RECOVERY

Lab Name: WANTEC Contract: 68W80075

Lab Code: WANTEC Case No.: 9521 SAS No.: SDG No.: EX951

| | EPA SAMPLE NO. | S1 (DBC)# | OTHER |
|---|---|---|---|
| 1 | PBLK | 106 | |
| 2 | EX954 | 113 | |
| 3 | EX954MS | 112 | |
| 4 | EX954MSD | 125 | |
| 5 | EX956 | 99 | |
| 6 | EX959 | 103 | |
| 7 | EX960 | 107 | |
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ADVISORY QC LIMITS (24-154)

S1 (DBC) = DIBUTYL CHLORENDATE

# Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out



FORM II PEST-1 1/87 Rev.

3B

# SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: WANTEC Contract: 68W80075

Lab Code: WANTEC Case No.: 9521 SAS No.: SDG No.: EX951

Matrix Spike - EPA Sample No.: EX951 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 | 63. | 0. | 70. | 110. | 59-172 |
| TRICHLOROETHENE | 63. | 1. | 54. | 85. | 62-137 |
| BENZENE | 63. | 0. | 89. | 141. | 66-142 |
| TOLUENE | 63. | 2. | 74. | 114. | 59-139 |
| CHLOROBENZENE | 63. | 0. | 69. | 110. | 60-133 |

| COMPOUND | SPIKE ADDED (UG/KG) | MSD CONCENTRATION (UG/KG) | MSD % REC # | % RPD # | QC LIMITS RPD | QC LIMITS REC. |
|---|---|---|---|---|---|---|
| 1,1-DICHLOROETHENE | 59. | 58. | 98. | 12. | 22 | 59-172 |
| TRICHLOROETHENE | 59. | 48. | 80. | 7. | 24 | 62-137 |
| BENZENE | 59. | 80. | 135. | 5. | 21 | 66-142 |
| TOLUENE | 59. | 65. | 106. | 7. | 21 | 59-139 |
| CHLOROBENZENE | 59. | 62. | 104. | 5. | 21 | 60-133 |

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

+ Values outside of QC limits

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

COMMENTS:

3A

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: WANTEC Contract: 68W80075

Lab Code: WANTEC Case No.: 9521 SAS No.: SDG No.: EX951

Matrix Spike - EPA Sample No.: EX954

| COMPOUND | SPIKE ADDED (UG/L ) | SAMPLE CONCENTRATION (UG/L ) | MS CONCENTRATION (UG/L ) | MS % REC # | QC LIMITS REC. |
|---|---|---|---|---|---|
| 1,1-DICHLOROETHENE | 50. | 0. | 55. | 110. | 61-145 |
| TRICHLOROETHENE | 50. | 4. | 48. | 87. | 71-120 |
| BENZENE | 50. | 0. | 50. | 100. | 76-127 |
| TOLUENE | 50. | 2. | 46. | 87. | 76-125 |
| CHLOROBENZENE | 50. | 0. | 45. | 89. | 75-130 |

| COMPOUND | SPIKE ADDED (UG/L ) | MSD CONCENTRATION (UG/L ) | MSD % REC # | % RPD # | QC LIMITS RPD | QC LIMITS REC. |
|---|---|---|---|---|---|---|
| 1,1-DICHLOROETHENE | 50. | 55. | 109. | 1. | 14 | 61-145 |
| TRICHLOROETHENE | 50. | 47. | 84. | 3. | 14 | 71-120 |
| BENZENE | 50. | 50. | 100. | 1. | 11 | 76-127 |
| TOLUENE | 50. | 46. | 88. | 0. | 13 | 76-125 |
| CHLOROBENZENE | 50. | 48. | 95. | 6. | 13 | 75-130 |

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

+ Values outside of QC limits

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

COMMENTS:

3C

WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: WANTEC Contract: 68W80075

Lab Code: WANTEC Case No.: 9521 SAS No.: SDG No.: EX951

Matrix Spike - EPA Sample No.: EX954

| COMPOUND | SPIKE ADDED (UG/L ) | SAMPLE CONCENTRATION (UG/L ) | MS CONCENTRATION (UG/L ) | MS % REC # | QC LIMITS REC. |
|---|---|---|---|---|---|
| Phenol | 91. | 0. | 35. | 39. | 12- 89 |
| 2-Chlorophenol | 91. | 0. | 71. | 78. | 27-123 |
| 1,4-Dichlorobenzene | 45. | 0. | 29. | 64. | 36- 97 |
| N-Nitroso-di-n-prop.(1) | 45. | 0. | 39. | 86. | 41-116 |
| 1,2,4-Trichlorobenzene | 45. | 0. | 24. | 53. | 39- 98 |
| 4-Chloro-3-methylphenol | 91. | 0. | 111. | 122. * | 23- 97 |
| Acenaphthene | 45. | 0. | 49. | 108. | 46-118 |
| 4-Nitrophenol | 91. | 0. | 38. | 41. | 10- 80 |
| 2,4-Dinitrotoluene | 45. | 0. | 53. | 117. * | 24- 96 |
| Pentachlorophenol | 91. | 0. | 57. | 62. | 9-103 |
| Pyrene | 45. | 0. | 12. | 26. * | 26-127 |

| COMPOUND | SPIKE ADDED (UG/L ) | MSD CONCENTRATION (UG/L ) | MSD % REC # | % RPD # | QC LIMITS RPD | QC LIMITS REC. |
|---|---|---|---|---|---|---|
| Phenol | 87. | 28. | 32. | 19. | 42 | 12- 89 |
| 2-Chlorophenol | 87. | 60. | 70. | 11. | 40 | 27-123 |
| 1,4-Dichlorobenzene | 43. | 26. | 61. | 6. | 28 | 36- 97 |
| N-Nitroso-di-n-prop.(1) | 43. | 36. | 84. | 2. | 38 | 41-116 |
| 1,2,4-Trichlorobenzene | 43. | 21. | 48. | 10. | 28 | 39- 98 |
| 4-Chloro-3-methylphenol | 87. | 91. | 105. * | 15. | 42 | 23- 97 |
| Acenaphthene | 43. | 43. | 100. | 8. | 31 | 46-118 |
| 4-Nitrophenol | 87. | 38. | 44. | 5. | 50 | 10- 80 |
| 2,4-Dinitrotoluene | 43. | 53. | 121. * | 4. | 38 | 24- 96 |
| Pentachlorophenol | 87. | 72. | 83. | 29. | 50 | 9-103 |
| Pyrene | 43. | 11. | 26. | 2. | 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: 5 out of 22 outside limits

COMMENTS:

3D

SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: WANTEC Contract: 68W80075

Lab Code: WANTEC Case No.: 9521 SAS No.: SDG No.: EX951

Matrix Spike - EPA Sample No.: EX951 Level:(low/med) LOW

| COMPOUND | SPIKE ADDED (UG/KG) | SAMPLE CONCENTRATION (UG/KG) | MS CONCENTRATION (UG/KG) | MS % REC # | QC LIMITS REC. |
|---|---|---|---|---|---|
| Phenol | 7576. | 0. | 4421. | 58. | 26- 90 |
| 2-Chlorophenol | 7576. | 0. | 4698. | 62. | 25-102 |
| 1,4-Dichlorobenzene | 3788. | 0. | 2395. | 63. | 28-104 |
| N-Nitroso-di-n-prop.(1) | 3788. | 0. | 1505. | 40. * | 41-126 |
| 1,2,4-Trichlorobenzene | 3788. | 0. | 1587. | 42. | 38-107 |
| 4-Chloro-3-methylphenol | 7576. | 0. | 3273. | 43. | 26-103 |
| Acenaphthene | 3788. | 0. | 2969. | 78. | 31-137 |
| 4-Nitrophenol | 7576. | 0. | 4560. | 60. | 11-114 |
| 2,4-Dinitrotoluene | 3788. | 0. | 2658. | 70. | 28- 89 |
| Pentachlorophenol | 7576. | 0. | 7833. | 103. | 17-109 |
| Pyrene | 3788. | 0. | 438. | 12. * | 35-142 |

| COMPOUND | SPIKE ADDED (UG/KG) | MSD CONCENTRATION (UG/KG) | MSD % REC # | % RPD # | QC LIMITS RPD | QC LIMITS REC. |
|---|---|---|---|---|---|---|
| Phenol | 7576. | 4326. | 57. | 2. | 35 | 26- 90 |
| 2-Chlorophenol | 7576. | 4420. | 58. | 6. | 50 | 25-102 |
| 1,4-Dichlorobenzene | 3788. | 2227. | 59. | 7. | 27 | 28-104 |
| N-Nitroso-di-n-prop.(1) | 3788. | 2355. | 62. | 44. * | 38 | 41-126 |
| 1,2,4-Trichlorobenzene | 3788. | 2104. | 56. | 28. * | 23 | 38-107 |
| 4-Chloro-3-methylphenol | 7576. | 5448. | 72. | 50. * | 33 | 26-103 |
| Acenaphthene | 3788. | 2942. | 78. | 1. | 19 | 31-137 |
| 4-Nitrophenol | 7576. | 6151. | 81. | 30. | 50 | 11-114 |
| 2,4-Dinitrotoluene | 3788. | 3659. | 97. * | 32. | 47 | 28- 89 |
| Pentachlorophenol | 7576. | 7560. | 100. | 4. | 47 | 17-109 |
| Pyrene | 3788. | 439. | 12. * | 0. | 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: 3 out of 11 outside limits
Spike Recovery: 4 out of 22 outside limits

COMMENTS:

3E

WATER PESTICIDE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: WANTEC Contract: 68W80075

Lab Code: WANTEC Case No.: 9521 SAS No.: SDG No.: EX951

Matrix Spike - EPA Sample No.: EX954

| COMPOUND | SPIKE ADDED (UG/L ) | SAMPLE CONCENTRATION (UG/L ) | MS CONCENTRATION (UG/L ) | MS % REC # | QC LIMITS REC. |
|---|---|---|---|---|---|
| GAMMA-BHC | .19 | .00 | .28 | 146. * | 56-123 |
| HEPTACHLOR | .19 | .00 | .18 | 93. | 40-131 |
| ALDRIN | .19 | .00 | .26 | 133. * | 40-120 |
| DIELDRIN | .48 | .00 | .46 | 96. | 52-126 |
| ENDRIN | .48 | .00 | .56 | 115. | 56-121 |
| 4,4'-DDT | .48 | .00 | .51 | 106. | 38-127 |

| COMPOUND | SPIKE ADDED (UG/L ) | MSD CONCENTRATION (UG/L ) | MSD % REC # | % RPD # | QC LIMITS RPD | QC LIMITS REC. |
|---|---|---|---|---|---|---|
| GAMMA-BHC | .20 | .20 | 101. | 36. * | 15 | 56-123 |
| HEPTACHLOR | .20 | .20 | 97. | 4. | 20 | 40-131 |
| ALDRIN | .20 | .28 | 138. * | 4. | 22 | 40-120 |
| DIELDRIN | .50 | .48 | 95. | 0. | 18 | 52-126 |
| ENDRIN | .50 | .58 | 115. | 0. | 21 | 56-121 |
| 4,4'-DDT | .50 | .53 | 105. | 1. | 27 | 38-127 |

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

* Values outside of QC limits

RPD: 1 out of 6 outside limits
Spike Recovery: 3 out of 12 outside limits

COMMENTS:

3F

# SOIL PESTICIDE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: WANTEC Contract: 68W80075

Lab Code: WANTEC Case No.: 9521 SAS No.: SDG No.: EX951

Matrix Spike - EPA Sample No.: EX952 Level:(low/med) LOW

| COMPOUND | SPIKE ADDED (UG/KG) | SAMPLE CONCENTRATION (UG/KG) | MS CONCENTRATION (UG/KG) | MS % REC # | QC LIMITS REC. |
|---|---|---|---|---|---|
| GAMMA-BHC | 29.43 | .00 | 28.10 | 95. | 46-127 |
| HEPTACHLOR | 29.43 | .00 | 26.44 | 90. | 35-130 |
| ALDRIN | 29.43 | .00 | 38.91 | 132. * | 34-132 |
| DIELDRIN | 73.58 | .00 | 68.04 | 92. | 31-134 |
| ENDRIN | 73.58 | .00 | 84.66 | 115. | 42-139 |
| 4,4'-DDT | 73.58 | .00 | 74.60 | 101. | 23-134 |

| COMPOUND | SPIKE ADDED (UG/KG) | MSD CONCENTRATION (UG/KG) | MSD % REC # | % RPD # | QC LIMITS RPD | QC LIMITS REC. |
|---|---|---|---|---|---|---|
| GAMMA-BHC | 29.24 | 27.99 | 96. | 0. | 50 | 46-127 |
| HEPTACHLOR | 29.24 | 26.38 | 90. | 0. | 31 | 35-130 |
| ALDRIN | 29.24 | 38.81 | 133. * | 0. | 43 | 34-132 |
| DIELDRIN | 73.10 | 67.76 | 93. | 0. | 38 | 31-134 |
| ENDRIN | 73.10 | 83.57 | 114. | 1. | 45 | 42-139 |
| 4,4'-DDT | 73.10 | 75.76 | 104. | 2. | 50 | 23-134 |

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

* Values outside of QC limits

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

COMMENTS:

4A
VOLATILE METHOD BLANK SUMMARY

Lab Name: WANTEC Contract: 68W80075

Lab Code: WANTEC Case No.: 9521 SAS No.: SDG No.: EX951

Lab File ID: VBLK0505 Lab Sample ID: VBLK0505

Date Analyzed: 5/ 5/88 Time Analyzed: 12:19

Matrix: (soil/water) WATER Level:(low/med) LOW

Instrument ID: 10501

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | TIME ANALYZED |
|---|---|---|---|---|
| 1 | EX960 | 803507 | 803507 | 13:50 |
| 2 | EX954 | 803504 | 803504 | 15:23 |
| 3 | EX954MS | 803504 | 803504MS | 16:54 |
| 4 | EX954MSD | 803504 | 803504MD | 17:45 |
| 5 | EX956 | 803505 | 803505 | 18:36 |
| 6 | EX959 | 803506 | 803506 | 20:17 |
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COMMENTS:

4A

# VOLATILE METHOD BLANK SUMMARY

Lab Name: WANTEC Contract: 68W80075

Lab Code: WANTEC Case No.: 9521 SAS No.: SDG No.: EX951

Lab File ID: VBLK0512 Lab Sample ID: VBLK0512

Date Analyzed: 5/12/88 Time Analyzed: 14:28

Matrix: (soil/water) SOIL Level:(low/med) LOW

Instrument ID: 10501

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | TIME ANALYZED |
|---|---|---|---|---|
| 1 | EX951 | 803501 | 803501B | 15:16 |
| 2 | EX953 | 803503 | 803503B | 16:54 |
| 3 | EX952 | 803502 | 803502C | 17:43 |
| 4 | EX951MS | 803501 | 803501MS | 18:27 |
| 5 | EX951MSD | 803501 | 803501MD | 19:15 |
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COMMENTS:

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK

Lab Name: WANTEC Contract: 68W80075

Lab Code: WANTEC Case No.: 9521 SAS No.: SDG No.: EX951

Matrix: (soil/water) WATER Lab Sample ID: VBLK0505

Sample wt/vol: 5. (g/mL) ML Lab File ID: VBLK0505

Level: (low/med) LOW Date Received: 0/ 0/ 0

% Moisture: not dec.100. Date Analyzed: 5/ 5/88

Column: (pack/cap) PACK Dilution Factor: 1.00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 74-87-3 | CHLOROMETHANE | 10. | U |
| 74-83-9 | BROMOMETHANE | 10. | U |
| 75-01-4 | VINYL CHLORIDE | 10. | U |
| 75-00-3 | CHLOROETHANE | 10. | U |
| 75-09-2 | METHYLENE CHLORIDE | 5. | U |
| 67-64-1 | ACETONE | 20. | |
| 75-15-0 | CARBON DISULFIDE | 5. | U |
| 75-35-4 | 1,1-DICHLOROETHENE | 5. | U |
| 75-34-3 | 1,1-DICHLOROETHANE | 5. | U |
| 156-60-5 | 1,2-DICHLOROETHENE (TOTAL) | 5. | U |
| 67-66-3 | CHLOROFORM | 5. | U |
| 107-06-2 | 1,2-DICHLOROETHANE | 5. | U |
| 78-93-3 | 2-BUTANONE | 10. | U |
| 71-55-6 | 1,1,1-TRICHLOROETHANE | 5. | U |
| 56-23-5 | CARBON TETRACHLORIDE | 5. | U |
| 108-05-4 | VINYL ACETATE | 10. | U |
| 75-27-4 | BROMODICHLOROMETHANE | 5. | U |
| 78-87-5 | 1,2-DICHLOROPROPANE | 5. | U |
| 10061-01-5 | CIS-1,3-DICHLOROPROPENE | 5. | U |
| 79-01-6 | TRICHLOROETHENE | 5. | U |
| 124-48-1 | DIBROMOCHLOROMETHANE | 5. | U |
| 79-00-5 | 1,1,2-TRICHLOROETHANE | 5. | U |
| 71-43-2 | BENZENE | 5. | U |
| 10061-02-6 | TRANS-1,3-DICHLOROPROPENE | 5. | U |
| 75-25-2 | BROMOFORM | 5. | U |
| 108-10-1 | 4-METHYL-2-PENTANONE | 10. | U |
| 591-78-6 | 2-HEXANONE | 10. | U |
| 127-18-4 | TETRACHLOROETHENE | 5. | U |
| 79-34-5 | 1,1,2,2-TETRACHLOROETHANE | 5. | U |
| 108-88-3 | TOLUENE | 5. | U |
| 108-90-7 | CHLOROBENZENE | 5. | U |
| 100-41-4 | ETHYLBENZENE | 5. | U |
| 100-42-5 | STYRENE | 5. | U |
| 1330-20-7 | XYLENE (TOTAL) | 5. | U |

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLK

Lab Name: WANTEC Contract: 68W80075

Lab Code: WANTEC Case No.: 9521 SAS No.: SDG No.: EX951

Matrix: (soil/water) WATER Lab Sample ID: VBLK0505

Sample wt/vol: 5. (g/mL) ML Lab File ID: VBLK0505

Level: (low/med) LOW Date Received: 0/ 0/ 0

% Moisture: not dec.100. Date Analyzed: 5/ 5/88

Column: (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

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

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
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1A

# VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK

Lab Name: WANTEC Contract: 68W80075

Lab Code: WANTEC Case No.: 9521 SAS No.: SDG No.: EX951

Matrix: (soil/water) SOIL Lab Sample ID: VBLK0512

Sample wt/vol: 5. (g/mL) G Lab File ID: VBLK0512

Level: (low/med) LOW Date Received: 0/ 0/ 0

% Moisture: not dec. 0. Date Analyzed: 5/12/88

Column: (pack/cap) PACK Dilution Factor: 1.00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 74-87-3 | CHLOROMETHANE | 10. | U |
| 74-83-9 | BROMOMETHANE | 10. | U |
| 75-01-4 | VINYL CHLORIDE | 10. | U |
| 75-00-3 | CHLOROETHANE | 10. | U |
| 75-09-2 | METHYLENE CHLORIDE | 5. | U |
| 67-64-1 | ACETONE | 12. | |
| 75-15-0 | CARBON DISULFIDE | 5. | U |
| 75-35-4 | 1,1-DICHLOROETHENE | 5. | U |
| 75-34-3 | 1,1-DICHLOROETHANE | 5. | U |
| 156-60-5 | 1,2-DICHLOROETHENE (TOTAL) | 5. | U |
| 67-66-3 | CHLOROFORM | 5. | U |
| 107-06-2 | 1,2-DICHLOROETHANE | 5. | U |
| 78-93-3 | 2-BUTANONE | 10. | U |
| 71-55-6 | 1,1,1-TRICHLOROETHANE | 5. | U |
| 56-23-5 | CARBON TETRACHLORIDE | 5. | U |
| 108-05-4 | VINYL ACETATE | 10. | U |
| 75-27-4 | BROMODICHLOROMETHANE | 5. | U |
| 78-87-5 | 1,2-DICHLOROPROPANE | 5. | U |
| 10061-01-5 | CIS-1,3-DICHLOROPROPENE | 5. | U |
| 79-01-6 | TRICHLOROETHENE | 5. | U |
| 124-48-1 | DIBROMOCHLOROMETHANE | 5. | U |
| 79-00-5 | 1,1,2-TRICHLOROETHANE | 5. | U |
| 71-43-2 | BENZENE | 5. | U |
| 10061-02-6 | TRANS-1,3-DICHLOROPROPENE | 5. | U |
| 75-25-2 | BROMOFORM | 5. | U |
| 108-10-1 | 4-METHYL-2-PENTANONE | 10. | U |
| 591-78-6 | 2-HEXANONE | 4. | J |
| 127-18-4 | TETRACHLOROETHENE | 5. | U |
| 79-34-5 | 1,1,2,2-TETRACHLOROETHANE | 5. | U |
| 108-88-3 | TOLUENE | 5. | U |
| 108-90-7 | CHLOROBENZENE | 5. | U |
| 100-41-4 | ETHYLBENZENE | 5. | U |
| 100-42-5 | STYRENE | 5. | U |
| 1330-20-7 | XYLENE (TOTAL) | 5. | U |

1E

# VOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLK

Lab Name: WANTEC Contract: 68W80075

Lab Code: WANTEC Case No.: 9521 SAS No.: SDG No.: EX951

Matrix: (soil/water) SOIL Lab Sample ID: VBLK0512

Sample wt/vol: 5. (g/mL) G Lab File ID: VBLK0512

Level: (low/med) LOW Date Received: 0/ 0/ 0

% Moisture: not dec. 0. Date Analyzed: 5/12/88

Column: (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

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

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
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4B

SEMIVOLATILE METHOD BLANK SUMMARY

Lab Name: WANTEC Contract: 68W80075

Lab Code: WANTEC Case No.: 9521 SAS No.: SDG No.: EX951

Lab File ID: Q51101EB Lab Sample ID: Q1851101-EB

Date Extracted: 5/10/88 Extraction:(SepF/Cont/Sonc) SEPF

Date Analyzed: 5/20/88 Time Analyzed: 15:38

Matrix: (soil/water) WATER Level:(low/med) LOW

Instrument ID: EXTR

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

| | EPA SAMPLE NO. | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED |
|---|---|---|---|---|
| 1 | EX956 | 803505 | 803505R | 5/20/88 |
| 2 | EX959 | 803506 | 803506R | 5/20/88 |
| 3 | EX960 | 803507 | 803507R | 5/20/88 |
| 4 | EX954 | 803504 | 807504R | 5/20/88 |
| 5 | EX954MS | 803504MS | 803504SR | 5/20/88 |
| 6 | EX954MSD | 803504MSD | 803504DR | 5/20/88 |
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COMMENTS:

0216

4B

# SEMIVOLATILE METHOD BLANK SUMMARY

Lab Name: WANTEC Contract: 68W80075

Lab Code: WANTEC Case No.: 9521 SAS No.: SDG No.: EX951

Lab File ID: Q51301EB Lab Sample ID: Q1851301-EB

Date Extracted: 5/14/88 Extraction:(SepF/Cont/Sonc) SONC

Date Analyzed: 5/31/88 Time Analyzed: 12:34

Matrix: (soil/water) SOIL Level:(low/med) LOW

Instrument ID: EXTR

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

| | EPA SAMPLE NO. | | LAB SAMPLE ID | LAB FILE ID | DATE ANALYZED |
|---|---|---|---|---|---|
| 1 | EX952 | | 803502 | 803502 | 5/31/88 |
| 2 | EX951 | | 803501 | 803501 | 5/31/88 |
| 3 | EX951MS | | 803501-MS | 03501MS | 5/31/88 |
| 4 | EX951MSD | | 803501-MSD | 03501MD | 5/31/88 |
| 5 | EX953 | | 803503 | 803503 | 5/31/88 |
| 6 | EX951 | DL | 803501 | 03501D | 5/31/88 |
| 7 | EX951MS | DL | 803501-MS | 03501MSD | 5/31/88 |
| 8 | EX951MSD | DL | 803501-MSD | 03501MDD | 5/31/88 |
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COMMENTS:

0217

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK

Lab Name: WANTEC Contract: 68W80075

Lab Code: WANTEC Case No.: 9521 SAS No.: SDG No.: EX951

Matrix: (soil/water) SOIL Lab Sample ID: Q1851301-EB

Sample wt/vol: 30. (g/mL) G Lab File ID: Q51301EB

Level: (low/med) LOW Date Received: 0/ 0/ 0

% Moisture: not dec. 0. dec. 0. Date Extracted: 5/14/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 5/31/88

GPC Cleanup: (Y/N) N pH: .0 Dilution Factor: 1.00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 99-09-2 | 3-Nitroaniline | 1700. | U |
| 83-32-9 | Acenaphthene | 330. | U |
| 51-28-5 | 2,4-Dinitrophenol | 1700. | U |
| 100-02-7 | 4-Nitrophenol | 1700. | 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 | 1700. | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 330. | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 1700. | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 330. | U |
| 118-74-1 | Hexachlorobenzene | 330. | U |
| 87-86-5 | Pentachlorophenol | 1700. | U |
| 85-01-8 | Phenanthrene | 330. | U |
| 120-12-7 | Anthracene | 330. | U |
| 84-74-2 | Di-n-butylphthalate | 330. | U |
| 206-44-0 | Fluoranthene | 330. | U |
| 129-00-0 | Pyrene | 330. | U |
| 85-68-7 | Butylbenzylphthalate | 330. | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 670. | U |
| 56-55-3 | Benzo(a)anthracene | 330. | U |
| 218-01-9 | Chrysene | 330. | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 330. | U |
| 117-84-0 | Di-n-octylphthalate | 65. | J |
| 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

1F

# SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SBLK

Lab Name: WANTEC Contract: 68W80075

Lab Code: WANTEC Case No.: 9521 SAS No.: SDG No.: EX951

Matrix: (soil/water) SOIL Lab Sample ID: Q1851301-EB

Sample wt/vol: 30. (g/mL) G Lab File ID: Q51301EB

Level: (low/med) LOW Date Received: 0/ 0/ 0

% Moisture: not dec. 0. dec. 0. Date Extracted: 5/14/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 5/31/88

GPC Cleanup: (Y/N) N pH: .0 Dilution Factor: 1.00

Number TICs found: 0

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | | | | |
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK

Lab Name: WANTEC Contract: 68W80075

Lab Code: WANTEC Case No.: 9521 SAS No.: SDG No.: EX951

Matrix: (soil/water) SOIL Lab Sample ID: Q1851301-EB

Sample wt/vol: 30. (g/mL) G Lab File ID: Q51301EB

Level: (low/med) LOW Date Received: 0/ 0/ 0

% Moisture: not dec. 0. dec. 0. Date Extracted: 5/14/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 5/31/88

GPC Cleanup: (Y/N) N pH: .0 Dilution Factor: 1.00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 330. | U |
| 111-44-4 | bis(2-Chloroethyl)ether | 330. | U |
| 95-57-8 | 2-Chlorophenol | 330. | U |
| 541-73-1 | 1,3-Dichlorobenzene | 330. | U |
| 106-46-7 | 1,4-Dichlorobenzene | 330. | U |
| 100-51-6 | Benzyl alcohol | 330. | U |
| 95-50-1 | 1,2-Dichlorobenzene | 330. | U |
| 95-48-7 | 2-Methylphenol | 330. | U |
| 108-60-1 | bis(2-Chloroisopropyl)ether | 330. | U |
| 106-44-5 | 4-Methylphenol | 330. | U |
| 621-64-7 | N-Nitroso-di-n-propylamine | 330. | U |
| 67-72-1 | Hexachloroethane | 330. | U |
| 98-95-3 | Nitrobenzene | 330. | U |
| 78-59-1 | Isophorone | 330. | U |
| 88-75-5 | 2-Nitrophenol | 330. | U |
| 105-67-9 | 2,4-Dimethylphenol | 330. | U |
| 65-85-0 | Benzoic acid | 1700. | U |
| 111-91-1 | bis(2-Chloroethoxy)methane | 330. | U |
| 120-83-2 | 2,4-Dichlorophenol | 330. | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 330. | U |
| 91-20-3 | Naphthalene | 330. | U |
| 106-47-8 | 4-Chloroaniline | 330. | U |
| 87-68-3 | Hexachlorobutadiene | 330. | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 330. | U |
| 91-57-6 | 2-Methylnaphthalene | 330. | U |
| 77-47-4 | Hexachlorocyclopentadiene | 330. | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 330. | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 1700. | U |
| 91-58-7 | 2-Chloronaphthalene | 330. | U |
| 88-74-4 | 2-Nitroaniline | 1700. | U |
| 131-11-3 | Dimethylphthalate | 330. | U |
| 208-96-8 | Acenaphthylene | 330. | U |
| 606-20-2 | 2,6-Dinitrotoluene | 330. | U |

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK

Lab Name: WANTEC Contract: 68W80075

Lab Code: WANTEC Case No.: 9521 SAS No.: SDG No.: EX951

Matrix: (soil/water) WATER Lab Sample ID: Q1851101-EB

Sample wt/vol: 1000. (g/mL) ML Lab File ID: Q51101EB

Level: (low/med) LOW Date Received: 0/ 0/ 0

% Moisture: not dec.100. dec. 0. Date Extracted: 5/10/88

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 5/20/88

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 99-09-2 | 3-Nitroaniline | 50. | U |
| 83-32-9 | Acenaphthene | 10. | U |
| 51-28-5 | 2,4-Dinitrophenol | 50. | U |
| 100-02-7 | 4-Nitrophenol | 50. | U |
| 132-64-9 | Dibenzofuran | 10. | U |
| 121-14-2 | 2,4-Dinitrotoluene | 10. | U |
| 84-66-2 | Diethylphthalate | 10. | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 10. | U |
| 86-73-7 | Fluorene | 10. | U |
| 100-01-6 | 4-Nitroaniline | 50. | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 10. | U |
| 86-30-6 | N-Nitrosodiphenylamine | 50. | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 10. | U |
| 118-74-1 | Hexachlorobenzene | 10. | U |
| 87-86-5 | Pentachlorophenol | 50. | U |
| 85-01-8 | Phenanthrene | 10. | U |
| 120-12-7 | Anthracene | 10. | U |
| 84-74-2 | Di-n-butylphthalate | 10. | U |
| 206-44-0 | Fluoranthene | 10. | U |
| 129-00-0 | Pyrene | 10. | U |
| 85-68-7 | Butylbenzylphthalate | 10. | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 20. | U |
| 56-55-3 | Benzo(a)anthracene | 10. | U |
| 218-01-9 | Chrysene | 10. | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | .8 | J |
| 117-84-0 | Di-n-octylphthalate | 5. | J |
| 205-99-2 | Benzo(b)fluoranthene | 10. | U |
| 207-08-9 | Benzo(k)fluoranthene | 10. | U |
| 50-32-8 | Benzo(a)pyrene | 10. | U |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 10. | U |
| 53-70-3 | Dibenz(a,h)anthracene | 10. | U |
| 191-24-2 | Benzo(g,h,i)perylene | 10. | U |

(1) - Cannot be separated from diphenylamine

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK

Lab Name: WANTEC Contract: 68W80075

Lab Code: WANTEC Case No.: 9521 SAS No.: SDG No.: EX951

Matrix: (soil/water) WATER Lab Sample ID: Q1851101-EB

Sample wt/vol: 1000. (g/mL) ML Lab File ID: Q51101EB

Level: (low/med) LOW Date Received: 0/ 0/ 0

% Moisture: not dec.100. dec. 0. Date Extracted: 5/10/88

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 5/20/88

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 10. | U |
| 111-44-4 | bis(2-Chloroethyl)ether | 10. | U |
| 95-57-8 | 2-Chlorophenol | 10. | U |
| 541-73-1 | 1,3-Dichlorobenzene | 10. | U |
| 106-46-7 | 1,4-Dichlorobenzene | 10. | U |
| 100-51-6 | Benzyl alcohol | 10. | U |
| 95-50-1 | 1,2-Dichlorobenzene | 10. | U |
| 95-48-7 | 2-Methylphenol | 10. | U |
| 108-60-1 | bis(2-Chloroisopropyl)ether | 10. | U |
| 106-44-5 | 4-Methylphenol | 10. | U |
| 621-64-7 | N-Nitroso-di-n-propylamine | 10. | U |
| 67-72-1 | Hexachloroethane | 10. | U |
| 98-95-3 | Nitrobenzene | 10. | U |
| 78-59-1 | Isophorone | 10. | U |
| 88-75-5 | 2-Nitrophenol | 10. | U |
| 105-67-9 | 2,4-Dimethylphenol | 10. | U |
| 65-85-0 | Benzoic acid | 50. | U |
| 111-91-1 | bis(2-Chloroethoxy)methane | 10. | U |
| 120-83-2 | 2,4-Dichlorophenol | 10. | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 10. | U |
| 91-20-3 | Naphthalene | 10. | U |
| 106-47-8 | 4-Chloroaniline | 10. | U |
| 87-68-3 | Hexachlorobutadiene | 10. | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 10. | U |
| 91-57-6 | 2-Methylnaphthalene | 10. | U |
| 77-47-4 | Hexachlorocyclopentadiene | 10. | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 10. | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 50. | U |
| 91-58-7 | 2-Chloronaphthalene | 10. | U |
| 88-74-4 | 2-Nitroaniline | 50. | U |
| 131-11-3 | Dimethylphthalate | 10. | U |
| 208-96-8 | Acenaphthylene | 10. | U |
| 606-20-2 | 2,6-Dinitrotoluene | 10. | U |

1F

# SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SBLK

Lab Name: WANTEC Contract: 68W80075

Lab Code: WANTEC Case No.: 9521 SAS No.: SDG No.: EX951

Matrix: (soil/water) WATER Lab Sample ID: Q1851101-EB

Sample wt/vol: 1000. (g/mL) ML Lab File ID: Q51101EB

Level: (low/med) LOW Date Received: 0/ 0/ 0

% Moisture: not dec.100. dec. 0. Date Extracted: 5/10/88

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 5/20/88

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

Number TICs found: 0

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
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4C

# PESTICIDE METHOD BLANK SUMMARY

Lab Name: WANTEC Contract: 68W80075

Lab Code: WANTEC Case No.: 9521 SAS No.: SDG No.: EX951

Lab Sample ID: Q1851001 Lab File ID: 8511A13

Matrix: (soil/water) WATER Level: (low/med) LOW

Date Extracted: 5/10/88 Extraction: (SepF/Cont/Sonc) SEPF

Date Analyzed (1): 5/12/88 Date Analyzed (2): 5/17/88

Time Analyzed (1): 8:48 Time Analyzed (2): 17:17

Instrument ID (1): H58901 Instrument ID (2): H58901

GC Column ID (1): OV17/210 GC Column ID (2): OV1

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

| | EPA SAMPLE NO. | LAB SAMPLE ID | DATE ANALYZED 1 | DATE ANALYZED 2 |
|---|---|---|---|---|
| 1 | EX954 | 803504 | 5/12/88 | 5/17/88 |
| 2 | EX954MS | 803504MS | 5/12/88 | 5/17/88 |
| 3 | EX954MSD | 803504MSD | 5/12/88 | 5/17/88 |
| 4 | EX956 | 803505 | 5/12/88 | 5/17/88 |
| 5 | EX959 | 803506 | 5/12/88 | 5/18/88 |
| 6 | EX960 | 803507 | 5/12/88 | 5/18/88 |
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Comments:

4C
PESTICIDE METHOD BLANK SUMMARY

Lab Name: WANTEC Contract: 68W80075

Lab Code: WANTEC Case No.: 9521 SAS No.: SDG No.: EX951

Lab Sample ID: Q1851201 Lab File ID: 8511A39

Matrix: (soil/water) SOIL Level:(low/med) LOW

Date Extracted: 5/12/88 Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed (1): 5/13/88 Date Analyzed (2): 5/18/88

Time Analyzed (1): 9:16 Time Analyzed (2): 16:56

Instrument ID (1): H58901 Instrument ID (2): H58901

GC Column ID (1): OV17/210 GC Column ID (2): OV1

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

| | EPA SAMPLE NO. | LAB SAMPLE ID | DATE ANALYZED 1 | DATE ANALYZED 2 |
|---|---|---|---|---|
| 1 | EX951 | 803501 | 5/13/88 | 5/18/88 |
| 2 | EX952 | 803502 | 5/13/88 | 5/18/88 |
| 3 | EX952MS | 803502MS | 5/13/88 | 5/18/88 |
| 4 | EX952MSD | 803502MSD | 5/13/88 | 5/18/88 |
| 5 | EX953 | 803503 | 5/13/88 | 5/19/88 |
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Comments:

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PBLK

Lab Name: WANTEC Contract: 68W80075

Lab Code: WANTEC Case No.: 9521 SAS No.: SDG No.: EX951

Matrix: (soil/water) SOIL Lab Sample ID: 01851201

Sample wt/vol: 30. (g/mL) G Lab File ID: 8511A39

Level: (low/med) LOW Date Received: 0/ 0/ 0

% Moisture: not dec. 0. dec. 0. Date Extracted: 5/12/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 5/13/88

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 319-84-6 | ALPHA-BHC | 3.3 | U |
| 319-85-7 | BETA-BHC | 3.3 | U |
| 319-86-8 | DELTA-BHC | 3.3 | U |
| 58-89-9 | GAMMA-BHC | 3.3 | U |
| 76-44-8 | HEPTACHLOR | 3.3 | U |
| 309-00-2 | ALDRIN | 3.3 | U |
| 1024-57-3 | HEPTACHLOR EPOXIDE | 3.3 | U |
| 959-98-8 | ENDOSULFAN I | 3.3 | U |
| 60-57-1 | DIELDRIN | 3.3 | U |
| 72-55-9 | 4,4'-DDE | 6.6 | U |
| 72-20-8 | ENDRIN | 3.3 | U |
| 33213-65-9 | ENDOSULFAN II | 6.6 | U |
| 72-54-8 | 4,4'-DDD | 6.6 | U |
| 1031-07-8 | ENDOSULFAN SULFATE | 6.6 | U |
| 50-29-3 | 4,4'-DDT | 6.6 | U |
| 72-43-5 | METHOXYCHLOR | 33. | U |
| 53494-70-5 | ENDRIN KETONE | 6.6 | U |
| 5103-71-9 | ALPHA CHLORDANE | 33. | U |
| 5103-74-2 | GAMMA CHLORDANE | 33. | U |
| 8001-35-2 | TOXAPHENE | 66. | U |
| 12674-11-2 | AROCLOR-1016 | 33. | U |
| 11104-28-2 | AROCLOR-1221 | 33. | U |
| 11141-16-5 | AROCLOR-1232 | 33. | U |
| 53469-21-9 | AROCLOR-1242 | 33. | U |
| 12672-29-6 | AROCLOR-1248 | 33. | U |
| 11097-69-1 | AROCLOR-1254 | 66. | U |
| 11096-82-5 | AROCLOR-1260 | 66. | U |

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PBLK

Lab Name: WANTEC Contract: 68W80075

Lab Code: WANTEC Case No.: 9521 SAS No.: SDG No.: EX951

Matrix: (soil/water) WATER Lab Sample ID: Q1851001

Sample wt/vol: 1000. (g/mL)ML Lab File ID: 8511A13

Level: (low/med) LOW Date Received: 0/ 0/ 0

% Moisture: not dec. 100. dec. 0. Date Extracted: 5/10/88

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 5/12/88

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 319-84-6 | ALPHA-BHC | .050 | U |
| 319-85-7 | BETA-BHC | .050 | U |
| 319-86-8 | DELTA-BHC | .050 | U |
| 58-89-9 | GAMMA-BHC | .050 | U |
| 76-44-8 | HEPTACHLOR | .050 | U |
| 309-00-2 | ALDRIN | .050 | U |
| 1024-57-3 | HEPTACHLOR EPOXIDE | .050 | U |
| 959-98-8 | ENDOSULFAN I | .050 | U |
| 60-57-1 | DIELDRIN | .050 | U |
| 72-55-9 | 4,4'-DDE | .10 | U |
| 72-20-8 | ENDRIN | .050 | U |
| 33213-65-9 | ENDOSULFAN II | .10 | U |
| 72-54-8 | 4,4'-DDD | .10 | U |
| 1031-07-8 | ENDOSULFAN SULFATE | .10 | U |
| 50-29-3 | 4,4'-DDT | .10 | U |
| 72-43-5 | METHOXYCHLOR | .50 | U |
| 53494-70-5 | ENDRIN KETONE | .10 | U |
| 5103-71-9 | ALPHA CHLORDANE | .50 | U |
| 5103-74-2 | GAMMA CHLORDANE | .50 | U |
| 8001-35-2 | TOXAPHENE | 1.0 | U |
| 12674-11-2 | AROCLOR-1016 | .50 | U |
| 11104-28-2 | AROCLOR-1221 | .50 | U |
| 11141-16-5 | AROCLOR-1232 | .50 | U |
| 53469-21-9 | AROCLOR-1242 | [illegible] | U |
| 12672-29-6 | AROCLOR-1248 | [illegible] | U |
| 11097-69-1 | AROCLOR-1254 | [illegible] | U |
| 11096-82-5 | AROCLOR-1260 | [illegible] | U |

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EX951

Lab Name: WANTEC Contract: 68W80075

Lab Code: WANTEC Case No.: 9521 SAS No.: SDG No.: EX951

Matrix: (soil/water) SOIL Lab Sample ID: 803501

Sample wt/vol: 5. (g/mL) G Lab File ID: 803501B

Level: (low/med) LOW Date Received: 5/ 5/88

% Moisture: not dec. 12. Date Analyzed: 5/12/88

Column: (pack/cap) PACK Dilution Factor: 1.00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 74-87-3 | CHLOROMETHANE | 12. | U |
| 74-83-9 | BROMOMETHANE | 12. | U |
| 75-01-4 | VINYL CHLORIDE | 12. | U |
| 75-00-3 | CHLOROETHANE | 12. | U |
| 75-09-2 | METHYLENE CHLORIDE | 4. | J |
| 67-64-1 | ACETONE | 18. | BJ |
| 75-15-0 | CARBON DISULFIDE | 6. | U |
| 75-35-4 | 1,1-DICHLOROETHENE | 6. | U |
| 75-34-3 | 1,1-DICHLOROETHANE | 6. | U |
| 156-60-5 | 1,2-DICHLOROETHENE (TOTAL) | 6. | U |
| 67-66-3 | CHLOROFORM | 1. | J |
| 107-06-2 | 1,2-DICHLOROETHANE | 6. | U |
| 78-93-3 | 2-BUTANONE | 12. | U |
| 71-55-6 | 1,1,1-TRICHLOROETHANE | 6. | U |
| 56-23-5 | CARBON TETRACHLORIDE | 6. | U |
| 108-05-4 | VINYL ACETATE | 12. | U |
| 75-27-4 | BROMODICHLOROMETHANE | 6. | U |
| 78-87-5 | 1,2-DICHLOROPROPANE | 6. | U |
| 10061-01-5 | CIS-1,3-DICHLOROPROPENE | 6. | U |
| 79-01-6 | TRICHLOROETHENE | 6. | U |
| 124-48-1 | DIBROMOCHLOROMETHANE | 6. | U |
| 79-00-5 | 1,1,2-TRICHLOROETHANE | 6. | U |
| 71-43-2 | BENZENE | 6. | U |
| 10061-02-6 | TRANS-1,3-DICHLOROPROPENE | 6. | U |
| 75-25-2 | BROMOFORM | 6. | U |
| 108-10-1 | 4-METHYL-2-PENTANONE | 12. | U |
| 591-78-6 | 2-HEXANONE | 12. | U |
| 127-18-4 | TETRACHLOROETHENE | 6. | U |
| 79-34-5 | 1,1,2,2-TETRACHLOROETHANE | 6. | U |
| 108-88-3 | TOLUENE | 6. | U |
| 108-90-7 | CHLOROBENZENE | 6. | U |
| 100-41-4 | ETHYLBENZENE | 6. | U |
| 100-42-5 | STYRENE | 6. | U |
| 1330-20-7 | XYLENE (TOTAL) | 6. | U |

0016

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EX951

Lab Name: WANTEC Contract: 68W80075

Lab Code: WANTEC Case No.: 9521 SAS No.: SDG No.: EX951

Matrix: (soil/water) SOIL Lab Sample ID: 803501

Sample wt/vol: 5. (g/mL) G Lab File ID: 803501B

Level: (low/med) LOW Date Received: 5/ 5/88

% Moisture: not dec. 12. Date Analyzed: 5/12/88

Column: (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 2

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

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | - - | UNKNOWN | 9.77 | 10. | J |
| 2. | 1112-39-6 | SILANE, DIMETHOXYDIMETHYL- | 18.83 | 20. | J |
| 3. | | | | | |
| 4. | | | | | |
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PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EX951

Lab Name: WANTEC Contract: 68W80075

Lab Code: WANTEC Case No.: 9521 SAS No.: SDG No.: EX951

Matrix: (soil/water) SOIL Lab Sample ID: 803501

Sample wt/vol: 30. (g/mL) G Lab File ID: 9511A40

Level: (low/med) LOW Date Received: 5/ 5/88

% Moisture: not dec. 12. dec. 0. Date Extracted: 5/12/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 5/13/88

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 319-84-6 | ALPHA-BHC | 3.8 | U |
| 319-85-7 | BETA-BHC | 3.8 | U |
| 319-86-8 | DELTA-BHC | 3.8 | U |
| 58-89-9 | GAMMA-BHC | 3.8 | U |
| 76-44-8 | HEPTACHLOR | 3.8 | U |
| 309-00-2 | ALDRIN | 3.8 | U |
| 1024-57-3 | HEPTACHLOR EPOXIDE | 3.8 | U |
| 959-98-8 | ENDOSULFAN I | 3.8 | U |
| 60-57-1 | DIELDRIN | 3.8 | U |
| 72-55-9 | 4,4'-DDE | 7.6 | U |
| 72-20-8 | ENDRIN | 3.8 | U |
| 33213-65-9 | ENDOSULFAN II | 7.6 | U |
| 72-54-8 | 4,4'-DDD | 7.6 | U |
| 1031-07-8 | ENDOSULFAN SULFATE | 7.6 | U |
| 50-29-3 | 4,4'-DDT | 7.6 | U |
| 72-43-5 | METHOXYCHLOR | 38. | U |
| 53494-70-5 | ENDRIN KETONE | 7.6 | U |
| 5103-71-9 | ALPHA CHLORDANE | 38. | U |
| 5103-74-2 | GAMMA CHLORDANE | 38. | U |
| 8001-35-2 | TOXAPHENE | 76. | U |
| 12674-11-2 | AROCLOR-1016 | 38. | U |
| 11104-28-2 | AROCLOR-1221 | 38. | U |
| 11141-16-5 | AROCLOR-1232 | 38. | U |
| 53469-21-9 | AROCLOR-1242 | 38. | U |
| 12672-29-6 | AROCLOR-1248 | 38. | U |
| 11097-69-1 | AROCLOR-1254 | 76. | U |
| 11096-82-5 | AROCLOR-1260 | 76. | U |

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EX951

Lab Name: WANTEC Contract: 68W80075

Lab Code: WANTEC Case No.: 9521 SAS No.: SDG No.: EX951

Matrix: (soil/water) SOIL Lab Sample ID: 803501

Sample wt/vol: 30. (g/mL) G Lab File ID: 803501

Level: (low/med) LOW Date Received: 5/ 5/88

% Moisture: not dec. 12. dec. 0. Date Extracted: 5/14/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 5/31/88

GPC Cleanup: (Y/N) N pH: .0 Dilution Factor: 1.00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 380. | U |
| 111-44-4 | bis(2-Chloroethyl)ether | 380. | U |
| 95-57-8 | 2-Chlorophenol | 380. | U |
| 541-73-1 | 1,3-Dichlorobenzene | 380. | U |
| 106-46-7 | 1,4-Dichlorobenzene | 380. | U |
| 100-51-6 | Benzyl alcohol | 380. | U |
| 95-50-1 | 1,2-Dichlorobenzene | 380. | U |
| 95-48-7 | 2-Methylphenol | 380. | U |
| 108-60-1 | bis(2-Chloroisopropyl)ether | 380. | U |
| 106-44-5 | 4-Methylphenol | 380. | U |
| 621-64-7 | N-Nitroso-di-n-propylamine | 380. | UJ |
| 67-72-1 | Hexachloroethane | 380. | U |
| 98-95-3 | Nitrobenzene | 380. | U |
| 78-59-1 | Isophorone | 380. | U |
| 88-75-5 | 2-Nitrophenol | 380. | U |
| 105-67-9 | 2,4-Dimethylphenol | 380. | U |
| 65-85-0 | Benzoic acid | 1900. | U |
| 111-91-1 | bis(2-Chloroethoxy)methane | 380. | U |
| 120-83-2 | 2,4-Dichlorophenol | 380. | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 380. | UJ |
| 91-20-3 | Naphthalene | 380. | U |
| 106-47-8 | 4-Chloroaniline | 380. | U |
| 87-68-3 | Hexachlorobutadiene | 380. | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 380. | UJ |
| 91-57-6 | 2-Methylnaphthalene | 380. | U |
| 77-47-4 | Hexachlorocyclopentadiene | 380. | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 380. | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 1900. | U |
| 91-58-7 | 2-Chloronaphthalene | 380. | U |
| 88-74-4 | 2-Nitroaniline | 1900. | U |
| 131-11-3 | Dimethylphthalate | 380. | UJ |
| 208-96-8 | Acenaphthylene | 380. | U |
| 606-20-2 | 2,6-Dinitrotoluene | 380. | U |

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EX951

Lab Name: WANTEC Contract: 68W80075

Lab Code: WANTEC Case No.: 9521 SAS No.: SDG No.: EX951

Matrix: (soil/water) SOIL Lab Sample ID: 803501

Sample wt/vol: 30. (g/mL) G Lab File ID: 803501

Level: (low/med) LOW Date Received: 5/ 5/88

% Moisture: not dec. 12. dec. 0. Date Extracted: 5/14/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 5/31/88

GPC Cleanup: (Y/N) N pH: .0 Dilution Factor: 1.00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 99-09-2 | 3-Nitroaniline | 1900. | U |
| 83-32-9 | Acenaphthene | 380. | U |
| 51-28-5 | 2,4-Dinitrophenol | 1900. | U |
| 100-02-7 | 4-Nitrophenol | 1900. | U |
| 132-64-9 | Dibenzofuran | 380. | U |
| 121-14-2 | 2,4-Dinitrotoluene | 380. | UJ |
| 84-66-2 | Diethylphthalate | 380. | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 380. | U |
| 86-73-7 | Fluorene | 380. | U |
| 100-01-6 | 4-Nitroaniline | 1900. | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 380. | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 1900. | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 380. | U |
| 118-74-1 | Hexachlorobenzene | 380. | U |
| 87-86-5 | Pentachlorophenol | 1900. | UJ |
| 85-01-8 | Phenanthrene | 380. | U |
| 120-12-7 | Anthracene | 380. | U |
| 84-74-2 | Di-n-butylphthalate | 380. | U |
| 206-44-0 | Fluoranthene | 380. | U |
| 129-00-0 | Pyrene | 380. | U |
| 85-68-7 | Butylbenzylphthalate | 380. | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 760. | U |
| 56-55-3 | Benzo(a)anthracene | 380. | U |
| 218-01-9 | Chrysene | 380. | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | ~~380.~~ | ~~U~~ |
| 117-84-0 | Di-n-octylphthalate | 750. | BJ |
| 205-99-2 | Benzo(b)fluoranthene | 380. | U |
| 207-08-9 | Benzo(k)fluoranthene | 380. | U |
| 50-32-8 | Benzo(a)pyrene | 380. | U |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 380. | U |
| 53-70-3 | Dibenz(a,h)anthracene | 380. | U |
| 191-24-2 | Benzo(g,h,i)perylene | 380. | U |

(1) - Cannot be separated from diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EX951

Lab Name: WANTEC Contract: 68W80075

Lab Code: WANTEC Case No.: 9521 SAS No.: SDG No.: EX951

Matrix: (soil/water) SOIL Lab Sample ID: 803501

Sample wt/vol: 30. (g/mL) G Lab File ID: 803501

Level: (low/med) LOW Date Received: 5/ 5/88

% Moisture: not dec. 12. dec. 0. Date Extracted: 5/14/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 5/31/88

GPC Cleanup: (Y/N) N pH: .0 Dilution Factor: 1.00

Number TICs found: 7

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

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | 3648-21-3 | 1,2-Benzenedicarboxylic acid | 26.97 | 400. | J |
| 2. | 89-16-7 | 1,2-Benzenedicarboxylic acid | 27.92 | 300. | J |
| 3. | 28553-12-0 | 1,2-Benzenedicarboxylic acid | 28.00 | 200. | J |
| 4. | - - | UNKNOWN PHTHALATE | 29.44 | 700. | J |
| 5. | - - | UNKNOWN PHTHALATE | 29.58 | 300. | J |
| 6. | - - | UNKNOWN PHTHALATE | 30.17 | 1000. | J |
| 7. | - - | UNKNOWN PHTHALATE | 32.37 | 600. | J |
| 8. | | | | | |
| 9. | | | | | |
| 10. | | | | | |
| 11. | | | | | |
| 12. | | | | | |
| 13. | | | | | |
| 14. | | | | | |
| 15. | | | | | |
| 16. | | | | | |
| 17. | | | | | |
| 18. | | | | | |
| 19. | | | | | |
| 20. | | | | | |
| 21. | | | | | |
| 22. | | | | | |
| 23. | | | | | |
| 24. | | | | | |
| 25. | | | | | |
| 26. | | | | | |
| 27. | | | | | |
| 28. | | | | | |
| 29. | | | | | |
| 30. | | | | | |

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EX952

Lab Name: WANTEC Contract: 68W80075

Lab Code: WANTEC Case No.: 9521 SAS No.: SDG No.: EX951

Matrix: (soil/water) SOIL Lab Sample ID: 803502

Sample wt/vol: 5. (g/mL) G Lab File ID: 803502C

Level: (low/med) LOW Date Received: 5/ 5/88

% Moisture: not dec. 10. Date Analyzed: 5/12/88

Column: (pack/cap) PACK Dilution Factor: 1.00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 74-87-3 | CHLOROMETHANE | 12. | U |
| 74-83-9 | BROMOMETHANE | 12. | U |
| 75-01-4 | VINYL CHLORIDE | 12. | U |
| 75-00-3 | CHLOROETHANE | 12. | U |
| 75-09-2 | METHYLENE CHLORIDE | 8. | |
| 67-64-1 | ACETONE | 120. | BJ |
| 75-15-0 | CARBON DISULFIDE | 6. | U |
| 75-35-4 | 1,1-DICHLOROETHENE | 6. | U |
| 75-34-3 | 1,1-DICHLOROETHANE | 6. | U |
| 156-60-5 | 1,2-DICHLOROETHENE (TOTAL) | 6. | U |
| 67-66-3 | CHLOROFORM | 6. | U |
| 107-06-2 | 1,2-DICHLOROETHANE | 6. | U |
| 78-93-3 | 2-BUTANONE | 12. | U |
| 71-55-6 | 1,1,1-TRICHLOROETHANE | 6. | U |
| 56-23-5 | CARBON TETRACHLORIDE | 6. | U |
| 108-05-4 | VINYL ACETATE | 12. | U |
| 75-27-4 | BROMODICHLOROMETHANE | 6. | U |
| 78-87-5 | 1,2-DICHLOROPROPANE | 6. | U |
| 10061-01-5 | CIS-1,3-DICHLOROPROPENE | 6. | U |
| 79-01-6 | TRICHLOROETHENE | 6. | U |
| 124-48-1 | DIBROMOCHLOROMETHANE | 6. | U |
| 79-00-5 | 1,1,2-TRICHLOROETHANE | 6. | U |
| 71-43-2 | BENZENE | 6. | U |
| 10061-02-6 | TRANS-1,3-DICHLOROPROPENE | 6. | U |
| 75-25-2 | BROMOFORM | 6. | U |
| 108-10-1 | 4-METHYL-2-PENTANONE | 12. | U |
| 591-78-6 | 2-HEXANONE | 12. | U |
| 127-18-4 | TETRACHLOROETHENE | 6. | U |
| 79-34-5 | 1,1,2,2-TETRACHLOROETHANE | 6. | U |
| 108-88-3 | TOLUENE | 24. | |
| 108-90-7 | CHLOROBENZENE | 6. | U |
| 100-41-4 | ETHYLBENZENE | 6. | U |
| 100-42-5 | STYRENE | 6. | U |
| 1330-20-7 | XYLENE (TOTAL) | 8. | |

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EX952

Lab Name: WANTEC Contract: 68W80075

Lab Code: WANTEC Case No.: 9521 SAS No.: SDG No.: EX951

Matrix: (soil/water) SOIL Lab Sample ID: 803502

Sample wt/vol: 5. (g/mL) G Lab File ID: 803502C

Level: (low/med) LOW Date Received: 5/ 5/88

% Moisture: not dec. 10. Date Analyzed: 5/12/88

Column: (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 1

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

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | - - | UNKNOWN | 9.70 | 20. | J |
| 2. | | | | | |
| 3. | | | | | |
| 4. | | | | | |
| 5. | | | | | |
| 6. | | | | | |
| 7. | | | | | |
| 8. | | | | | |
| 9. | | | | | |
| 10. | | | | | |
| 11. | | | | | |
| 12. | | | | | |
| 13. | | | | | |
| 14. | | | | | |
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| 18. | | | | | |
| 19. | | | | | |
| 20. | | | | | |
| 21. | | | | | |
| 22. | | | | | |
| 23. | | | | | |
| 24. | | | | | |
| 25. | | | | | |
| 26. | | | | | |
| 27. | | | | | |
| 28. | | | | | |
| 29. | | | | | |
| 30. | | | | | |

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EX952

Lab Name: WANTEC Contract: 68W80075

Lab Code: WANTEC Case No.: 9521 SAS No.: SDG No.: EX951

Matrix: (soil/water) SOIL Lab Sample ID: 903502

Sample wt/vol: 30. (g/mL) G Lab File ID: 8511A41

Level: (low/med) LOW Date Received: 5/ 5/88

% Moisture: not dec. 10. dec. 0. Date Extracted: 5/12/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 5/13/88

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 319-84-6 | ALPHA-BHC | 3.7 | U |
| 319-85-7 | BETA-BHC | 3.7 | U |
| 319-86-8 | DELTA-BHC | 3.7 | U |
| 58-89-9 | GAMMA-BHC | 3.7 | UJ |
| 76-44-8 | HEPTACHLOR | 3.7 | U |
| 309-00-2 | ALDRIN | 3.7 | UJ |
| 1024-57-3 | HEPTACHLOR EPOXIDE | 3.7 | U |
| 959-98-8 | ENDOSULFAN I | 3.7 | U |
| 60-57-1 | DIELDRIN | 3.7 | U |
| 72-55-9 | 4,4'-DDE | 7.4 | U |
| 72-20-8 | ENDRIN | 3.7 | U |
| 33213-65-9 | ENDOSULFAN II | 7.4 | U |
| 72-54-8 | 4,4'-DDD | 7.4 | U |
| 1031-07-8 | ENDOSULFAN SULFATE | 7.4 | U |
| 50-29-3 | 4,4'-DDT | 7.4 | U |
| 72-43-5 | METHOXYCHLOR | 37. | U |
| 53494-70-5 | ENDRIN KETONE | 7.4 | U |
| 5103-71-9 | ALPHA CHLORDANE | 37. | U |
| 5103-74-2 | GAMMA CHLORDANE | 37. | U |
| 8001-35-2 | TOXAPHENE | 74. | U |
| 12674-11-2 | AROCLOR-1016 | 37. | U |
| 11104-28-2 | AROCLOR-1221 | 37. | U |
| 11141-16-5 | AROCLOR-1232 | 37. | U |
| 53469-21-9 | AROCLOR-1242 | 37. | U |
| 12672-29-6 | AROCLOR-1248 | 37. | U |
| 11097-69-1 | AROCLOR-1254 | 74. | U |
| 11096-82-5 | AROCLOR-1260 | 74. | U |

0450

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EX952

Lab Name: WANTEC Contract: 68W80075

Lab Code: WANTEC Case No.: 9521 SAS No.: SDG No.: EX951

Matrix: (soil/water) SOIL Lab Sample ID: 803502

Sample wt/vol: 30. (g/mL) G Lab File ID: 803502

Level: (low/med) LOW Date Received: 5/ 5/88

% Moisture: not dec. 10. dec. 0. Date Extracted: 5/14/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 5/31/88

GPC Cleanup: (Y/N) N pH: .0 Dilution Factor: 1.00

| 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 |
| 100-51-6 | Benzyl alcohol | 370. | U |
| 95-50-1 | 1,2-Dichlorobenzene | 370. | U |
| 95-48-7 | 2-Methylphenol | 370. | U |
| 108-60-1 | bis(2-Chloroisopropyl)ether | 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 |
| 65-85-0 | Benzoic acid | 1900. | 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 | 370. | U |
| 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 | 370. | U |
| 77-47-4 | Hexachlorocyclopentadiene | 370. | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 370. | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 1900. | U |
| 91-58-7 | 2-Chloronaphthalene | 370. | U |
| 88-74-4 | 2-Nitroaniline | 1900. | U |
| 131-11-3 | Dimethylphthalate | 370. | U |
| 208-96-8 | Acenaphthylene | 370. | U |
| 606-20-2 | 2,6-Dinitrotoluene | 370. | U |

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EX952

Lab Name: WANTEC Contract: 68W80075

Lab Code: WANTEC Case No.: 9521 SAS No.: SDG No.: EX951

Matrix: (soil/water) SOIL Lab Sample ID: 803502

Sample wt/vol: 30. (g/mL) G Lab File ID: 803502

Level: (low/med) LOW Date Received: 5/ 5/88

% Moisture: not dec. 10. dec. 0. Date Extracted: 5/14/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 5/31/88

GPC Cleanup: (Y/N) N pH: .0 Dilution Factor: 1.00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 99-09-2 | 3-Nitroaniline | 1900. | U |
| 83-32-9 | Acenaphthene | 370. | U |
| 51-28-5 | 2,4-Dinitrophenol | 1900. | U |
| 100-02-7 | 4-Nitrophenol | 1900. | U |
| 132-64-9 | Dibenzofuran | 370. | U |
| 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 | 370. | U |
| 100-01-6 | 4-Nitroaniline | 1900. | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 370. | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 1900. | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 370. | U |
| 118-74-1 | Hexachlorobenzene | 370. | U |
| 87-86-5 | Pentachlorophenol | 1900. | U |
| 85-01-8 | Phenanthrene | 370. | U |
| 120-12-7 | Anthracene | 370. | U |
| 84-74-2 | Di-n-butylphthalate | 370. | U |
| 206-44-0 | Fluoranthene | 370. | U |
| 129-00-0 | Pyrene | 370. | U |
| 85-68-7 | Butylbenzylphthalate | 370. | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 740. | U |
| 56-55-3 | Benzo(a)anthracene | 370. | U |
| 218-01-9 | Chrysene | 370. | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 370. | U |
| 117-84-0 | Di-n-octylphthalate | 2400. | BJ |
| 205-99-2 | Benzo(b)fluoranthene | 370. | U |
| 207-08-9 | Benzo(k)fluoranthene | 370. | U |
| 50-32-8 | Benzo(a)pyrene | 370. | U |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 370. | U |
| 53-70-3 | Dibenz(a,h)anthracene | 370. | U |
| 191-24-2 | Benzo(g,h,i)perylene | 370. | U |

(1) - Cannot be separated from diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EX952

Lab Name: WANTEC Contract: 68W80075

Lab Code: WANTEC Case No.: 9521 SAS No.: SDG No.: EX951

Matrix: (soil/water) SOIL Lab Sample ID: 803502

Sample wt/vol: 30. (g/mL) G Lab File ID: 803502

Level: (low/med) LOW Date Received: 5/ 5/88

% Moisture: not dec. 10. dec. 0. Date Extracted: 5/14/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 5/31/88

GPC Cleanup: (Y/N) N pH: .0 Dilution Factor: 1.00

Number TICs found: 9

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. - - | UNKNOWN PHTHALATE | 26.98 | 1000. | J |
| 2. - - | UNKNOWN PHTHALATE | 27.92 | 700. | J |
| 3. - - | UNKNOWN PHTHALATE | 28.01 | 600. | J |
| 4. - - | UNKNOWN PHTHALATE | 29.45 | 2000. | J |
| 5. - - | UNKNOWN PHTHALATE | 29.59 | 800. | J |
| 6. - - | UNKNOWN PHTHALATE | 30.19 | 2000. | J |
| 7. - - | UNKNOWN PHTHALATE | 31.42 | 500. | J |
| 8. - - | UNKNOWN PHTHALATE | 32.38 | 2000. | J |
| 9. - - | UNKNOWN PHTHALATE | 31.33 | 500. | J |
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EX953

Lab Name: WANTEC Contract: 68W80075

Lab Code: WANTEC Case No.: 9521 SAS No.: SDG No.: EX951

Matrix: (soil/water) SOIL Lab Sample ID: 803503

Sample wt/vol: 5. (g/mL) G Lab File ID: 803503B

Level: (low/med) LOW Date Received: 5/ 5/88

% Moisture: not dec. 6. Date Analyzed: 5/12/88

Column: (pack/cap) PACK Dilution Factor: 1.00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 74-87-3 | CHLOROMETHANE | 11. | U |
| 74-83-9 | BROMOMETHANE | 11. | U |
| 75-01-4 | VINYL CHLORIDE | 11. | U |
| 75-00-3 | CHLOROETHANE | 11. | U |
| 75-09-2 | METHYLENE CHLORIDE | 6. | |
| 67-64-1 | ACETONE | 35. | B |
| 75-15-0 | CARBON DISULFIDE | 5. | U |
| 75-35-4 | 1,1-DICHLOROETHENE | 5. | U |
| 75-34-3 | 1,1-DICHLOROETHANE | 5. | U |
| 156-60-5 | 1,2-DICHLOROETHENE (TOTAL) | 5. | U |
| 67-66-3 | CHLOROFORM | 5. | U |
| 107-06-2 | 1,2-DICHLOROETHANE | 5. | U |
| 78-93-3 | 2-BUTANONE | 11. | U |
| 71-55-6 | 1,1,1-TRICHLOROETHANE | 5. | U |
| 56-23-5 | CARBON TETRACHLORIDE | 5. | U |
| 108-05-4 | VINYL ACETATE | 11. | U |
| 75-27-4 | BROMODICHLOROMETHANE | 5. | U |
| 78-87-5 | 1,2-DICHLOROPROPANE | 5. | U |
| 10061-01-5 | CIS-1,3-DICHLOROPROPENE | 5. | U |
| 79-01-6 | TRICHLOROETHENE | 5. | U |
| 124-48-1 | DIBROMOCHLOROMETHANE | 5. | U |
| 79-00-5 | 1,1,2-TRICHLOROETHANE | 5. | U |
| 71-43-2 | BENZENE | 5. | U |
| 10061-02-6 | TRANS-1,3-DICHLOROPROPENE | 5. | U |
| 75-25-2 | BROMOFORM | 5. | U |
| 108-10-1 | 4-METHYL-2-PENTANONE | 11. | U |
| 591-78-6 | 2-HEXANONE | 11. | U |
| 127-18-4 | TETRACHLOROETHENE | 5. | U |
| 79-34-5 | 1,1,2,2-TETRACHLOROETHANE | 5. | U |
| 108-88-3 | TOLUENE | 6. | |
| 108-90-7 | CHLOROBENZENE | 5. | U |
| 100-41-4 | ETHYLBENZENE | 5. | U |
| 100-42-5 | STYRENE | 5. | U |
| 1330-20-7 | XYLENE (TOTAL) | 5. | U |

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EX953

Lab Name: WANTEC Contract: 68W80075

Lab Code: WANTEC Case No.: 9521 SAS No.: SDG No.: EX951

Matrix: (soil/water) SOIL Lab Sample ID: 803503

Sample wt/vol: 5. (g/mL) G Lab File ID: 803503B

Level: (low/med) LOW Date Received: 5/ 5/88

% Moisture: not dec. 6. Date Analyzed: 5/12/88

Column: (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 2

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

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | 1112-39-6 | SILANE, DIMETHOXYDIMETHYL- | 18.83 | 10. | J |
| 2. | - - | UNKNOWN | 9.80 | 20. | J |
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1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EX953

Lab Name: WANTEC Contract: 68W80075

Lab Code: WANTEC Case No.: 9521 SAS No.: SDG No.: EX951

Matrix: (soil/water) SOIL Lab Sample ID: 903503

Sample wt/vol: 30. (g/mL) G Lab File ID: 0511A46

Level: (low/med) LOW Date Received: 5/ 5/88

% Moisture: not dec. 6. dec. 0. Date Extracted: 5/12/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 5/13/88

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 319-84-6 | ALPHA-BHC | 3.5 | U |
| 319-85-7 | BETA-BHC | 3.5 | U |
| 319-86-8 | DELTA-BHC | 3.5 | U |
| 58-89-9 | GAMMA-BHC | .35 | J |
| 76-44-8 | HEPTACHLOR | 3.5 | U |
| 309-00-2 | ALDRIN | .42 | J |
| 1024-57-3 | HEPTACHLOR EPOXIDE | 3.5 | U |
| 959-98-8 | ENDOSULFAN I | 3.5 | U |
| 60-57-1 | DIELDRIN | 3.5 | U |
| 72-55-9 | 4,4'-DDE | 7.1 | U |
| 72-20-8 | ENDRIN | 3.5 | U |
| 33213-65-9 | ENDOSULFAN II | 7.1 | U |
| 72-54-8 | 4,4'-DDD | 7.1 | U |
| 1031-07-8 | ENDOSULFAN SULFATE | 7.1 | U |
| 50-29-3 | 4,4'-DDT | 7.1 | U |
| 72-43-5 | METHOXYCHLOR | 35. | U |
| 53494-70-5 | ENDRIN KETONE | 7.1 | U |
| 5103-71-9 | ALPHA CHLORDANE | 35. | U |
| 5103-74-2 | GAMMA CHLORDANE | 35. | U |
| 8001-35-2 | TOXAPHENE | 71. | U |
| 12674-11-2 | AROCLOR-1016 | 35. | U |
| 11104-28-2 | AROCLOR-1221 | 35. | 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 | 71. | U |
| 11096-82-5 | AROCLOR-1260 | 71. | U |

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EX953

Lab Name: WANTEC Contract: 68W80075

Lab Code: WANTEC Case No.: 9521 SAS No.: SDG No.: EX951

Matrix: (soil/water) SOIL Lab Sample ID: 803503

Sample wt/vol: 30. (g/mL) G Lab File ID: 803503

Level: (low/med) LOW Date Received: 5/ 5/88

% Moisture: not dec. 6. dec. 0. Date Extracted: 5/14/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 5/31/88

GPC Cleanup: (Y/N) N pH: .0 Dilution Factor: 1.00

| 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 |
| 100-51-6 | Benzyl alcohol | 350. | U |
| 95-50-1 | 1,2-Dichlorobenzene | 350. | U |
| 95-48-7 | 2-Methylphenol | 350. | U |
| 108-60-1 | bis(2-Chloroisopropyl)ether | 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 |
| 65-85-0 | Benzoic acid | 1800. | 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 | 1800. | U |
| 91-58-7 | 2-Chloronaphthalene | 350. | U |
| 88-74-4 | 2-Nitroaniline | 1800. | U |
| 131-11-3 | Dimethylphthalate | 350. | U |
| 208-96-8 | Acenaphthylene | 350. | U |
| 606-20-2 | 2,6-Dinitrotoluene | 350. | U |

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EX953

Lab Name: WANTEC Contract: 68W80075

Lab Code: WANTEC Case No.: 9521 SAS No.: SDG No.: EX951

Matrix: (soil/water) SOIL Lab Sample ID: 803503

Sample wt/vol: 30. (g/mL) G Lab File ID: 803503

Level: (low/med) LOW Date Received: 5/ 5/88

% Moisture: not dec. 6. dec. 0. Date Extracted: 5/14/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 5/31/88

GPC Cleanup: (Y/N) N pH: .0 Dilution Factor: 1.00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | Q |
|---|---|---|---|
| 99-09-2 | 3-Nitroaniline | 1800. | U |
| 83-32-9 | Acenaphthene | 350. | U |
| 51-28-5 | 2,4-Dinitrophenol | 1800. | U |
| 100-02-7 | 4-Nitrophenol | 1800. | 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 | 1800. | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 350. | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 1800. | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 350. | U |
| 118-74-1 | Hexachlorobenzene | 350. | U |
| 87-86-5 | Pentachlorophenol | 1800. | U |
| 85-01-8 | Phenanthrene | 50. | J |
| 120-12-7 | Anthracene | 350. | U |
| 84-74-2 | Di-n-butylphthalate | 350. | U |
| 206-44-0 | Fluoranthene | 79. | J |
| 129-00-0 | Pyrene | 67. | J |
| 85-68-7 | Butylbenzylphthalate | 350. | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 710. | U |
| 56-55-3 | Benzo(a)anthracene | 350. | U |
| 218-01-9 | Chrysene | 58. | J |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 220. | J |
| 117-84-0 | Di-n-octylphthalate | 460. | BJ |
| 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

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EX953

Lab Name: WANTEC Contract: 68W80075

Lab Code: WANTEC Case No.: 9521 SAS No.: SDG No.: EX951

Matrix: (soil/water) SOIL Lab Sample ID: 803503

Sample wt/vol: 30. (g/mL) G Lab File ID: 803503

Level: (low/med) LOW Date Received: 5/ 5/88

% Moisture: not dec. 6. dec. 0. Date Extracted: 5/14/88

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 5/31/88

GPC Cleanup: (Y/N) N pH: .0 Dilution Factor: 1.00

Number TICs found: 7

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. - - | UNKNOWN PHTHALATE | 26.98 | 400. | J |
| 2. - - | UNKNOWN PHTHALATE | 27.92 | 300. | J |
| 3. - - | UNKNOWN PHTHALATE | 28.01 | 200. | J |
| 4. - - | UNKNOWN | 29.28 | 300. | J |
| 5. - - | UNKNOWN PHTHALATE | 29.46 | 500. | J |
| 6. - - | UNKNOWN PHTHALATE | 30.20 | 1000. | J |
| 7. - - | UNKNOWN PHTHALATE | 32.39 | 500. | J |
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1A

# VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EX954

Lab Name: WANTEC  Contract: 68W80075

Lab Code: WANTEC  Case No.: 9521  SAS No.:  SDG No.: EX951

Matrix: (soil/water) WATER  Lab Sample ID: 803504

Sample wt/vol: 5. (g/mL) ML  Lab File ID: 803504

Level: (low/med) LOW  Date Received: 5/ 5/88

% Moisture: not dec.100.  Date Analyzed: 5/ 5/88

Column: (pack/cap) PACK  Dilution Factor: 1.00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 74-87-3 | CHLOROMETHANE | 10. | U |
| 74-83-9 | BROMOMETHANE | 10. | U |
| 75-01-4 | VINYL CHLORIDE | 10. | U |
| 75-00-3 | CHLOROETHANE | 10. | U |
| 75-09-2 | METHYLENE CHLORIDE | 5. | U |
| 67-64-1 | ACETONE | 20. | BJ |
| 75-15-0 | CARBON DISULFIDE | 5. | U |
| 75-35-4 | 1,1-DICHLOROETHENE | 5. | U |
| 75-34-3 | 1,1-DICHLOROETHANE | 5. | U |
| 156-60-5 | 1,2-DICHLOROETHENE (TOTAL) | 5. | U |
| 67-66-3 | CHLOROFORM | 5. | U |
| 107-06-2 | 1,2-DICHLOROETHANE | 2. | J |
| 78-93-3 | 2-BUTANONE | 10. | U |
| 71-55-6 | 1,1,1-TRICHLOROETHANE | 5. | U |
| 56-23-5 | CARBON TETRACHLORIDE | 5. | U |
| 108-05-4 | VINYL ACETATE | 10. | U |
| 75-27-4 | BROMODICHLOROMETHANE | 5. | U |
| 78-87-5 | 1,2-DICHLOROPROPANE | 5. | U |
| 10061-01-5 | CIS-1,3-DICHLOROPROPENE | 5. | U |
| 79-01-6 | TRICHLOROETHENE | 4. | J |
| 124-48-1 | DIBROMOCHLOROMETHANE | 5. | U |
| 79-00-5 | 1,1,2-TRICHLOROETHANE | 2. | J |
| 71-43-2 | BENZENE | 5. | U |
| 10061-02-6 | TRANS-1,3-DICHLOROPROPENE | 5. | U |
| 75-25-2 | BROMOFORM | 5. | U |
| 108-10-1 | 4-METHYL-2-PENTANONE | 10. | U |
| 591-78-6 | 2-HEXANONE | 7. | J |
| 127-18-4 | TETRACHLOROETHENE | 5. | U |
| 79-34-5 | 1,1,2,2-TETRACHLOROETHANE | 3. | J |
| 108-88-3 | TOLUENE | 2. | J |
| 108-90-7 | CHLOROBENZENE | 5. | U |
| 100-41-4 | ETHYLBENZENE | 5. | U |
| 100-42-5 | STYRENE | 5. | U |
| 1330-20-7 | XYLENE (TOTAL) | 5. | U |

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EX954

Lab Name: WANTEC Contract: 68W80075

Lab Code: WANTEC Case No.: 9521 SAS No.: SDG No.: EX951

Matrix: (soil/water) WATER Lab Sample ID: 803504

Sample wt/vol: 5. (g/mL) ML Lab File ID: 803504

Level: (low/med) LOW Date Received: 5/ 5/88

% Moisture: not dec.100. Date Analyzed: 5/ 5/88

Column: (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | | | | |
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1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EX954

Lab Name: WANTEC Contract: 68W80075

Lab Code: WANTEC Case No.: 9521 SAS No.: SDG No.: EX951

Matrix: (soil/water) WATER Lab Sample ID: 803504

Sample wt/vol: 972. (g/mL)ML Lab File ID: 8511A21

Level: (low/med) LOW Date Received: 5/ 5/88

% Moisture: not dec. 100. dec. 0. Date Extracted: 5/10/88

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 5/12/88

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 319-84-6 | ALPHA-BHC | .051 | U |
| 319-85-7 | BETA-BHC | .051 | U |
| 319-86-8 | DELTA-BHC | .051 | U |
| 58-89-9 | GAMMA-BHC | .051 | UJ |
| 76-44-8 | HEPTACHLOR | .051 | U |
| 309-00-2 | ALDRIN | .051 | UJ |
| 1024-57-3 | HEPTACHLOR EPOXIDE | .051 | U |
| 959-98-8 | ENDOSULFAN I | .051 | U |
| 60-57-1 | DIELDRIN | .051 | U |
| 72-55-9 | 4,4'-DDE | .10 | U |
| 72-20-8 | ENDRIN | .051 | U |
| 33213-65-9 | ENDOSULFAN II | .10 | U |
| 72-54-8 | 4,4'-DDD | .10 | U |
| 1031-07-8 | ENDOSULFAN SULFATE | .10 | U |
| 50-29-3 | 4,4'-DDT | .10 | U |
| 72-43-5 | METHOXYCHLOR | .51 | U |
| 53494-70-5 | ENDRIN KETONE | .10 | U |
| 5103-71-9 | ALPHA CHLORDANE | .51 | U |
| 5103-74-2 | GAMMA CHLORDANE | .51 | U |
| 8001-35-2 | TOXAPHENE | 1.0 | U |
| 12674-11-2 | AROCLOR-1016 | .51 | U |
| 11104-28-2 | AROCLOR-1221 | .51 | U |
| 11141-16-5 | AROCLOR-1232 | .51 | U |
| 53469-21-9 | AROCLOR-1242 | .51 | U |
| 12672-29-6 | AROCLOR-1248 | .51 | U |
| 11097-69-1 | AROCLOR-1254 | 1.0 | U |
| 11096-82-5 | AROCLOR-1260 | 1.0 | U |

0459

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EX954

Lab Name: WANTEC Contract: 68W80075

Lab Code: WANTEC Case No.: 9521 SAS No.: SDG No.: EX951

Matrix: (soil/water) WATER Lab Sample ID: 803504

Sample wt/vol: 1057. (g/mL) ML Lab File ID: 807504R

Level: (low/med) LOW Date Received: 5/ 5/88

% Moisture: not dec.100. dec. 0. Date Extracted: 5/10/88

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 5/20/88

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 9. | U |
| 111-44-4 | bis(2-Chloroethyl)ether | 9. | U |
| 95-57-8 | 2-Chlorophenol | 9. | U |
| 541-73-1 | 1,3-Dichlorobenzene | 9. | U |
| 106-46-7 | 1,4-Dichlorobenzene | 9. | U |
| 100-51-6 | Benzyl alcohol | 9. | U |
| 95-50-1 | 1,2-Dichlorobenzene | 9. | U |
| 95-48-7 | 2-Methylphenol | 9. | U |
| 108-60-1 | bis(2-Chloroisopropyl)ether | 9. | U |
| 106-44-5 | 4-Methylphenol | 9. | U |
| 621-64-7 | N-Nitroso-di-n-propylamine | 9. | U |
| 67-72-1 | Hexachloroethane | 9. | U |
| 98-95-3 | Nitrobenzene | 9. | U |
| 78-59-1 | Isophorone | 9. | U |
| 88-75-5 | 2-Nitrophenol | 9. | U |
| 105-67-9 | 2,4-Dimethylphenol | 9. | U |
| 65-85-0 | Benzoic acid | 47. | U |
| 111-91-1 | bis(2-Chloroethoxy)methane | 9. | U |
| 120-83-2 | 2,4-Dichlorophenol | 9. | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 9. | U |
| 91-20-3 | Naphthalene | 9. | U |
| 106-47-8 | 4-Chloroaniline | 9. | U |
| 87-68-3 | Hexachlorobutadiene | 9. | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 9. | U J |
| 91-57-6 | 2-Methylnaphthalene | 9. | U |
| 77-47-4 | Hexachlorocyclopentadiene | 9. | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 9. | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 47. | U |
| 91-58-7 | 2-Chloronaphthalene | 9. | U |
| 88-74-4 | 2-Nitroaniline | 47. | U |
| 131-11-3 | Dimethylphthalate | 9. | U |
| 208-96-8 | Acenaphthylene | 9. | U |
| 606-20-2 | 2,6-Dinitrotoluene | 9. | U |

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EX954

Lab Name: WANTEC Contract: 68W80075

Lab Code: WANTEC Case No.: 9521 SAS No.: SDG No.: EX951

Matrix: (soil/water) WATER Lab Sample ID: 803504

Sample wt/vol: 1057. (g/mL) ML Lab File ID: 807504R

Level: (low/med) LOW Date Received: 5/ 5/88

% Moisture: not dec.100. dec. 0. Date Extracted: 5/10/88

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 5/20/88

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 99-09-2 | 3-Nitroaniline | 47. | U |
| 83-32-9 | Acenaphthene | 9. | U |
| 51-28-5 | 2,4-Dinitrophenol | 47. | U |
| 100-02-7 | 4-Nitrophenol | 47. | U |
| 132-64-9 | Dibenzofuran | 9. | U |
| 121-14-2 | 2,4-Dinitrotoluene | 9. | UJ |
| 84-66-2 | Diethylphthalate | 9. | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 9. | U |
| 86-73-7 | Fluorene | 9. | U |
| 100-01-6 | 4-Nitroaniline | 47. | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 9. | U |
| 86-30-6 | N-Nitrosodiphenylamine | 47. | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 9. | U |
| 118-74-1 | Hexachlorobenzene | 9. | U |
| 87-86-5 | Pentachlorophenol | 47. | U |
| 85-01-8 | Phenanthrene | 9. | U |
| 120-12-7 | Anthracene | 9. | U |
| 84-74-2 | Di-n-butylphthalate | 9. | U |
| 206-44-0 | Fluoranthene | 9. | U |
| 129-00-0 | Pyrene | 9. | U |
| 85-68-7 | Butylbenzylphthalate | 9. | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 19. | U |
| 56-55-3 | Benzo(a)anthracene | 9. | U |
| 218-01-9 | Chrysene | 9. | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | ~~9.~~ | ~~U~~ |
| 117-84-0 | Di-n-octylphthalate | 3. | BJ |
| 205-99-2 | Benzo(b)fluoranthene | ~~9.~~ | ~~U~~ |
| 207-08-9 | Benzo(k)fluoranthene | 9. | U |
| 50-32-8 | Benzo(a)pyrene | 9. | U |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 9. | U |
| 53-70-3 | Dibenz(a,h)anthracene | 9. | U |
| 191-24-2 | Benzo(g,h,i)perylene | 9. | U |

(1) - Cannot be separated from diphenylamine

1F

EPA SAMPLE NO.

EX954

# SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: WANTEC Contract: 68W80075

Lab Code: WANTEC Case No.: 9521 SAS No.: SDG No.: EX951

Matrix: (soil/water) WATER Lab Sample ID: 803504

Sample wt/vol: 1057. (g/mL) ML Lab File ID: 807504R

Level: (low/med) LOW Date Received: 5/ 5/88

% Moisture: not dec.100. dec. 0. Date Extracted: 5/10/88

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 5/20/88

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

Number TICs found: 0

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EX956

Lab Name: WANTEC Contract: 68W80075

Lab Code: WANTEC Case No.: 9521 SAS No.: SDG No.: EX951

Matrix: (soil/water) WATER Lab Sample ID: 803505

Sample wt/vol: 5. (g/mL) ML Lab File ID: 803505

Level: (low/med) LOW Date Received: 5/ 5/88

% Moisture: not dec.100. Date Analyzed: 5/ 5/88

Column: (pack/cap) PACK Dilution Factor: 1.00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 74-87-3 | CHLOROMETHANE | 10. | U |
| 74-83-9 | BROMOMETHANE | 10. | U |
| 75-01-4 | VINYL CHLORIDE | 10. | U |
| 75-00-3 | CHLOROETHANE | 10. | U |
| 75-09-2 | METHYLENE CHLORIDE | 5. | U |
| 67-64-1 | ACETONE | 12. | B |
| 75-15-0 | CARBON DISULFIDE | 5. | U |
| 75-35-4 | 1,1-DICHLOROETHENE | 5. | U |
| 75-34-3 | 1,1-DICHLOROETHANE | 5. | U |
| 156-60-5 | 1,2-DICHLOROETHENE (TOTAL) | 5. | U |
| 67-66-3 | CHLOROFORM | 5. | U |
| 107-06-2 | 1,2-DICHLOROETHANE | 5. | U |
| 78-93-3 | 2-BUTANONE | 10. | U |
| 71-55-6 | 1,1,1-TRICHLOROETHANE | 5. | U |
| 56-23-5 | CARBON TETRACHLORIDE | 5. | U |
| 108-05-4 | VINYL ACETATE | 10. | U |
| 75-27-4 | BROMODICHLOROMETHANE | 5. | U |
| 78-87-5 | 1,2-DICHLOROPROPANE | 5. | U |
| 10061-01-5 | CIS-1,3-DICHLOROPROPENE | 5. | U |
| 79-01-6 | TRICHLOROETHENE | 5. | U |
| 124-48-1 | DIBROMOCHLOROMETHANE | 5. | U |
| 79-00-5 | 1,1,2-TRICHLOROETHANE | 5. | U |
| 71-43-2 | BENZENE | 5. | U |
| 10061-02-6 | TRANS-1,3-DICHLOROPROPENE | 5. | U |
| 75-25-2 | BROMOFORM | 5. | U |
| 108-10-1 | 4-METHYL-2-PENTANONE | 10. | U |
| 591-78-6 | 2-HEXANONE | 10. | U |
| 127-18-4 | TETRACHLOROETHENE | 5. | U |
| 79-34-5 | 1,1,2,2-TETRACHLOROETHANE | 5. | U |
| 108-88-3 | TOLUENE | 2. | J |
| 108-90-7 | CHLOROBENZENE | 5. | U |
| 100-41-4 | ETHYLBENZENE | 5. | U |
| 100-42-5 | STYRENE | 5. | U |
| 1330-20-7 | XYLENE (TOTAL) | 5. | U |

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EX956

Lab Name: WANTEC Contract: 68W80075

Lab Code: WANTEC Case No.: 9521 SAS No.: SDG No.: EX951

Matrix: (soil/water) WATER Lab Sample ID: 803505

Sample wt/vol: 5. (g/mL) ML Lab File ID: 803505

Level: (low/med) LOW Date Received: 5/ 5/88

% Moisture: not dec.100. Date Analyzed: 5/ 5/88

Column: (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
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1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EX956

Lab Name: WANTEC Contract: 68W80075

Lab Code: WANTEC Case No.: 9521 SAS No.: SDG No.: EX951

Matrix: (soil/water) WATER Lab Sample ID: 803505

Sample wt/vol: 1000. (g/mL) ML Lab File ID: 8511A25

Level: (low/med) LOW Date Received: 5/ 5/88

% Moisture: not dec. 100. dec. 0. Date Extracted: 5/10/88

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 5/12/88

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 319-84-6 | ALPHA-BHC | .050 | U |
| 319-85-7 | BETA-BHC | .050 | U |
| 319-86-8 | DELTA-BHC | .050 | U |
| 58-89-9 | GAMMA-BHC | .050 | U |
| 76-44-8 | HEPTACHLOR | .050 | U |
| 309-00-2 | ALDRIN | .050 | U |
| 1024-57-3 | HEPTACHLOR EPOXIDE | .050 | U |
| 959-98-8 | ENDOSULFAN I | .050 | U |
| 60-57-1 | DIELDRIN | .050 | U |
| 72-55-9 | 4,4'-DDE | .10 | U |
| 72-20-8 | ENDRIN | .050 | U |
| 33213-65-9 | ENDOSULFAN II | .10 | U |
| 72-54-8 | 4,4'-DDD | .10 | U |
| 1031-07-8 | ENDOSULFAN SULFATE | .10 | U |
| 50-29-3 | 4,4'-DDT | .10 | U |
| 72-43-5 | METHOXYCHLOR | .50 | U |
| 53494-70-5 | ENDRIN KETONE | .10 | U |
| 5103-71-9 | ALPHA CHLORDANE | .50 | U |
| 5103-74-2 | GAMMA CHLORDANE | .50 | U |
| 8001-35-2 | TOXAPHENE | 1.0 | U |
| 12674-11-2 | AROCLOR-1016 | .50 | U |
| 11104-28-2 | AROCLOR-1221 | .50 | U |
| 11141-16-5 | AROCLOR-1232 | .50 | U |
| 53469-21-9 | AROCLOR-1242 | .50 | U |
| 12672-29-6 | AROCLOR-1248 | .50 | U |
| 11097-69-1 | AROCLOR-1254 | 1.0 | U |
| 11096-82-5 | AROCLOR-1260 | 1.0 | U |

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EX956

Lab Name: WANTEC Contract: 68W80075

Lab Code: WANTEC Case No.: 9521 SAS No.: SDG No.: EX951

Matrix: (soil/water) WATER Lab Sample ID: 803505

Sample wt/vol: 1150. (g/mL) ML Lab File ID: 803505R

Level: (low/med) LOW Date Received: 5/ 5/88

% Moisture: not dec.100. dec. 0. Date Extracted: 5/10/88

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 5/20/88

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 9. | U |
| 111-44-4 | bis(2-Chloroethyl)ether | 9. | U |
| 95-57-8 | 2-Chlorophenol | 9. | U |
| 541-73-1 | 1,3-Dichlorobenzene | 9. | U |
| 106-46-7 | 1,4-Dichlorobenzene | 9. | U |
| 100-51-6 | Benzyl alcohol | 9. | U |
| 95-50-1 | 1,2-Dichlorobenzene | 9. | U |
| 95-48-7 | 2-Methylphenol | 9. | U |
| 108-60-1 | bis(2-Chloroisopropyl)ether | 9. | U |
| 106-44-5 | 4-Methylphenol | 9. | U |
| 621-64-7 | N-Nitroso-di-n-propylamine | 9. | U |
| 67-72-1 | Hexachloroethane | 9. | U |
| 98-95-3 | Nitrobenzene | 9. | U |
| 78-59-1 | Isophorone | 9. | U |
| 88-75-5 | 2-Nitrophenol | 9. | U |
| 105-67-9 | 2,4-Dimethylphenol | 9. | U |
| 65-85-0 | Benzoic acid | 43. | U |
| 111-91-1 | bis(2-Chloroethoxy)methane | 9. | U |
| 120-83-2 | 2,4-Dichlorophenol | 9. | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 9. | U |
| 91-20-3 | Naphthalene | 9. | U |
| 106-47-8 | 4-Chloroaniline | 9. | U |
| 87-68-3 | Hexachlorobutadiene | 9. | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 9. | U |
| 91-57-6 | 2-Methylnaphthalene | 9. | U |
| 77-47-4 | Hexachlorocyclopentadiene | 9. | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 9. | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 43. | U |
| 91-58-7 | 2-Chloronaphthalene | 9. | U |
| 88-74-4 | 2-Nitroaniline | 43. | U |
| 131-11-3 | Dimethylphthalate | 9. | U |
| 208-96-8 | Acenaphthylene | 9. | U |
| 606-20-2 | 2,6-Dinitrotoluene | 9. | U |

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EX956

Lab Name: WANTEC Contract: 68W80075

Lab Code: WANTEC Case No.: 9521 SAS No.: SDG No.: EX951

Matrix: (soil/water) WATER Lab Sample ID: 803505

Sample wt/vol: 1150. (g/mL) ML Lab File ID: 803505R

Level: (low/med) LOW Date Received: 5/ 5/88

% Moisture: not dec.100. dec. 0. Date Extracted: 5/10/88

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 5/20/88

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 99-09-2 | 3-Nitroaniline | 43. | U |
| 83-32-9 | Acenaphthene | 9. | U |
| 51-28-5 | 2,4-Dinitrophenol | 43. | U |
| 100-02-7 | 4-Nitrophenol | 43. | U |
| 132-64-9 | Dibenzofuran | 9. | U |
| 121-14-2 | 2,4-Dinitrotoluene | 9. | U |
| 84-66-2 | Diethylphthalate | 9. | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 9. | U |
| 86-73-7 | Fluorene | 9. | U |
| 100-01-6 | 4-Nitroaniline | 43. | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 9. | U |
| 86-30-6 | N-Nitrosodiphenylamine | 43. | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 9. | U |
| 118-74-1 | Hexachlorobenzene | 9. | U |
| 87-86-5 | Pentachlorophenol | 43. | U |
| 85-01-8 | Phenanthrene | 9. | U |
| 120-12-7 | Anthracene | 9. | U |
| 84-74-2 | Di-n-butylphthalate | 9. | U |
| 206-44-0 | Fluoranthene | 9. | U |
| 129-00-0 | Pyrene | 9. | U |
| 85-68-7 | Butylbenzylphthalate | 9. | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 17. | U |
| 56-55-3 | Benzo(a)anthracene | 9. | U |
| 218-01-9 | Chrysene | 9. | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | ~~9.~~ | ~~U~~ |
| 117-84-0 | Di-n-octylphthalate | 1. | BJ |
| 205-99-2 | Benzo(b)fluoranthene | 9. | U |
| 207-08-9 | Benzo(k)fluoranthene | 9. | U |
| 50-32-8 | Benzo(a)pyrene | 9. | U |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 9. | U |
| 53-70-3 | Dibenz(a,h)anthracene | 9. | U |
| 191-24-2 | Benzo(g,h,i)perylene | 9. | U |

(1) - Cannot be separated from diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EX956

Lab Name: WANTEC Contract: 68W80075

Lab Code: WANTEC Case No.: 9521 SAS No.: SDG No.: EX951

Matrix: (soil/water) WATER Lab Sample ID: 803505

Sample wt/vol: 1150. (g/mL) ML Lab File ID: 803505R

Level: (low/med) LOW Date Received: 5/ 5/88

% Moisture: not dec.100. dec. 0. Date Extracted: 5/10/88

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 5/20/88

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

Number TICs found: 0

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | | | | |
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EX959

Lab Name: WANTEC Contract: 68W80075

Lab Code: WANTEC Case No.: 9521 SAS No.: SDG No.: EX951

Matrix: (soil/water) WATER Lab Sample ID: 803506

Sample wt/vol: 5. (g/mL) ML Lab File ID: 803506

Level: (low/med) LOW Date Received: 5/ 5/88

% Moisture: not dec.100. Date Analyzed: 5/ 5/88

Column: (pack/cap) PACK Dilution Factor: 1.00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 74-87-3 | CHLOROMETHANE | 10. | U |
| 74-83-9 | BROMOMETHANE | 10. | U |
| 75-01-4 | VINYL CHLORIDE | 10. | U |
| 75-00-3 | CHLOROETHANE | 10. | U |
| 75-09-2 | METHYLENE CHLORIDE | 5. | U |
| 67-64-1 | ACETONE | 13. | BJ |
| 75-15-0 | CARBON DISULFIDE | 5. | U |
| 75-35-4 | 1,1-DICHLOROETHENE | 5. | U |
| 75-34-3 | 1,1-DICHLOROETHANE | 5. | U |
| 156-60-5 | 1,2-DICHLOROETHENE (TOTAL) | 5. | U |
| 67-66-3 | CHLOROFORM | 5. | U |
| 107-06-2 | 1,2-DICHLOROETHANE | 5. | U |
| 78-93-3 | 2-BUTANONE | 10. | U |
| 71-55-6 | 1,1,1-TRICHLOROETHANE | 5. | U |
| 56-23-5 | CARBON TETRACHLORIDE | 5. | U |
| 108-05-4 | VINYL ACETATE | 10. | U |
| 75-27-4 | BROMODICHLOROMETHANE | 5. | U |
| 78-87-5 | 1,2-DICHLOROPROPANE | 5. | U |
| 10061-01-5 | CIS-1,3-DICHLOROPROPENE | 5. | U |
| 79-01-6 | TRICHLOROETHENE | 5. | U |
| 124-48-1 | DIBROMOCHLOROMETHANE | 5. | U |
| 79-00-5 | 1,1,2-TRICHLOROETHANE | 5. | U |
| 71-43-2 | BENZENE | 5. | U |
| 10061-02-6 | TRANS-1,3-DICHLOROPROPENE | 5. | U |
| 75-25-2 | BROMOFORM | 5. | U |
| 108-10-1 | 4-METHYL-2-PENTANONE | 10. | U |
| 591-78-6 | 2-HEXANONE | 10. | U |
| 127-18-4 | TETRACHLOROETHENE | 5. | U |
| 79-34-5 | 1,1,2,2-TETRACHLOROETHANE | 5. | U |
| 108-88-3 | TOLUENE | 5. | U |
| 108-90-7 | CHLOROBENZENE | 5. | U |
| 100-41-4 | ETHYLBENZENE | 5. | U |
| 100-42-5 | STYRENE | 5. | U |
| 1330-20-7 | XYLENE (TOTAL) | 5. | U |

0030

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EX959

Lab Name: WANTEC Contract: 68W80075

Lab Code: WANTEC Case No.: 9521 SAS No.: SDG No.: EX951

Matrix: (soil/water) WATER Lab Sample ID: 803506

Sample wt/vol: 5. (g/mL) ML Lab File ID: 803506

Level: (low/med) LOW Date Received: 5/ 5/88

% Moisture: not dec.100. Date Analyzed: 5/ 5/88

Column: (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
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1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EX959

Lab Name: WANTEC Contract: 68W80075

Lab Code: WANTEC Case No.: 9521 SAS No.: SDG No.: EX951

Matrix: (soil/water) WATER Lab Sample ID: 803506

Sample wt/vol: 1012. (g/mL) ML Lab File ID: 8511A26

Level: (low/med) LOW Date Received: 5/ 5/88

Moisture: not dec. 100. dec. 0. Date Extracted: 5/10/88

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 5/12/88

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 319-84-6 | ALPHA-BHC | .049 | U |
| 319-85-7 | BETA-BHC | .049 | U |
| 319-86-8 | DELTA-BHC | .049 | U |
| 58-89-9 | GAMMA-BHC | .049 | U |
| 76-44-8 | HEPTACHLOR | .049 | U |
| 309-00-2 | ALDRIN | .049 | U |
| 1024-57-3 | HEPTACHLOR EPOXIDE | .049 | U |
| 959-98-8 | ENDOSULFAN I | .049 | U |
| 60-57-1 | DIELDRIN | .049 | U |
| 72-55-9 | 4,4'-DDE | .10 | U |
| 72-20-8 | ENDRIN | .049 | U |
| 33213-65-9 | ENDOSULFAN II | .10 | U |
| 72-54-8 | 4,4'-DDD | .10 | U |
| 1031-07-8 | ENDOSULFAN SULFATE | .10 | U |
| 50-29-3 | 4,4'-DDT | .10 | U |
| 72-43-5 | METHOXYCHLOR | .49 | U |
| 53494-70-5 | ENDRIN KETONE | .10 | U |
| 5103-71-9 | ALPHA CHLORDANE | .49 | U |
| 5103-74-2 | GAMMA CHLORDANE | .49 | U |
| 8001-35-2 | TOXAPHENE | 1.0 | U |
| 12674-11-2 | AROCLOR-1016 | .49 | U |
| 11104-28-2 | AROCLOR-1221 | .49 | U |
| 11141-16-5 | AROCLOR-1232 | .49 | U |
| 53469-21-9 | AROCLOR-1242 | .49 | U |
| 12672-29-6 | AROCLOR-1248 | .49 | U |
| 11097-69-1 | AROCLOR-1254 | 1.0 | U |
| 11096-82-5 | AROCLOR-1260 | 1.0 | U |

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EX959

Lab Name: WANTEC Contract: 68W80075

Lab Code: WANTEC Case No.: 9521 SAS No.: SDG No.: EX951

Matrix: (soil/water) WATER Lab Sample ID: 803506

Sample wt/vol: 1040. (g/mL) ML Lab File ID: 803506R

Level: (low/med) LOW Date Received: 5/ 5/88

% Moisture: not dec.100. dec. 0. Date Extracted: 5/10/88

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 5/20/88

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 10. | U |
| 111-44-4 | bis(2-Chloroethyl)ether | 10. | U |
| 95-57-8 | 2-Chlorophenol | 10. | U |
| 541-73-1 | 1,3-Dichlorobenzene | 10. | U |
| 106-46-7 | 1,4-Dichlorobenzene | 10. | U |
| 100-51-6 | Benzyl alcohol | 10. | U |
| 95-50-1 | 1,2-Dichlorobenzene | 10. | U |
| 95-48-7 | 2-Methylphenol | 10. | U |
| 108-60-1 | bis(2-Chloroisopropyl)ether | 10. | U |
| 106-44-5 | 4-Methylphenol | 10. | U |
| 621-64-7 | N-Nitroso-di-n-propylamine | 10. | U |
| 67-72-1 | Hexachloroethane | 10. | U |
| 98-95-3 | Nitrobenzene | 10. | U |
| 78-59-1 | Isophorone | 10. | U |
| 88-75-5 | 2-Nitrophenol | 10. | U |
| 105-67-9 | 2,4-Dimethylphenol | 10. | U |
| 65-85-0 | Benzoic acid | 48. | 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 | 48. | U |
| 91-58-7 | 2-Chloronaphthalene | 10. | U |
| 88-74-4 | 2-Nitroaniline | 48. | U |
| 131-11-3 | Dimethylphthalate | 10. | U |
| 208-96-8 | Acenaphthylene | 10. | U |
| 606-20-2 | 2,6-Dinitrotoluene | 10. | U |

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EX959

Lab Name: WANTEC Contract: 68W80075

Lab Code: WANTEC Case No.: 9521 SAS No.: SDG No.: EX951

Matrix: (soil/water) WATER Lab Sample ID: 803506

Sample wt/vol: 1040. (g/mL) ML Lab File ID: 803506R

Level: (low/med) LOW Date Received: 5/ 5/88

% Moisture: not dec.100. dec. 0. Date Extracted: 5/10/88

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 5/20/88

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 99-09-2 | 3-Nitroaniline | 48. | U |
| 83-32-9 | Acenaphthene | 10. | U |
| 51-28-5 | 2,4-Dinitrophenol | 48. | U |
| 100-02-7 | 4-Nitrophenol | 48. | 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 | 48. | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 10. | U |
| 86-30-6 | N-Nitrosodiphenylamine | 48. | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 10. | U |
| 118-74-1 | Hexachlorobenzene | 10. | U |
| 87-86-5 | Pentachlorophenol | 48. | U |
| 85-01-8 | Phenanthrene | 10. | U |
| 120-12-7 | Anthracene | 10. | U |
| 84-74-2 | Di-n-butylphthalate | 10. | U |
| 206-44-0 | Fluoranthene | 10. | U |
| 129-00-0 | Pyrene | 10. | U |
| 85-68-7 | Butylbenzylphthalate | 10. | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 19. | 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 | 3. | BJ |
| 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.

EX959

Lab Name: WANTEC Contract: 68W80075

Lab Code: WANTEC Case No.: 9521 SAS No.: SDG No.: EX951

Matrix: (soil/water) WATER Lab Sample ID: 803506

Sample wt/vol: 1040. (g/mL) ML Lab File ID: 803506R

Level: (low/med) LOW Date Received: 5/ 5/88

% Moisture: not dec.100. dec. 0. Date Extracted: 5/10/88

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 5/20/88

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

Number TICs found: 0

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EX960

Lab Name: WANTEC Contract: 68W80075

Lab Code: WANTEC Case No.: 9521 SAS No.: SDG No.: EX951

Matrix: (soil/water) WATER Lab Sample ID: 803507

Sample wt/vol: 5. (g/mL) ML Lab File ID: 803507

Level: (low/med) LOW Date Received: 5/ 5/88

% Moisture: not dec.100. Date Analyzed: 5/ 5/88

Column: (pack/cap) PACK Dilution Factor: 1.00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 74-87-3 | CHLOROMETHANE | 10. | U |
| 74-83-9 | BROMOMETHANE | 10. | U |
| 75-01-4 | VINYL CHLORIDE | 10. | U |
| 75-00-3 | CHLOROETHANE | 10. | U |
| 75-09-2 | METHYLENE CHLORIDE | 5. | U |
| 67-64-1 | ACETONE | 14. | BJ |
| 75-15-0 | CARBON DISULFIDE | 5. | U |
| 75-35-4 | 1,1-DICHLOROETHENE | 5. | U |
| 75-34-3 | 1,1-DICHLOROETHANE | 5. | U |
| 156-60-5 | 1,2-DICHLOROETHENE (TOTAL) | 5. | U |
| 67-66-3 | CHLOROFORM | 5. | U |
| 107-06-2 | 1,2-DICHLOROETHANE | 5. | U |
| 78-93-3 | 2-BUTANONE | 10. | U |
| 71-55-6 | 1,1,1-TRICHLOROETHANE | 5. | U |
| 56-23-5 | CARBON TETRACHLORIDE | 5. | U |
| 108-05-4 | VINYL ACETATE | 10. | U |
| 75-27-4 | BROMODICHLOROMETHANE | 5. | U |
| 78-87-5 | 1,2-DICHLOROPROPANE | 5. | U |
| 10061-01-5 | CIS-1,3-DICHLOROPROPENE | 5. | U |
| 79-01-6 | TRICHLOROETHENE | 5. | U |
| 124-48-1 | DIBROMOCHLOROMETHANE | 5. | U |
| 79-00-5 | 1,1,2-TRICHLOROETHANE | 5. | U |
| 71-43-2 | BENZENE | 5. | U |
| 10061-02-6 | TRANS-1,3-DICHLOROPROPENE | 5. | U |
| 75-25-2 | BROMOFORM | 5. | U |
| 108-10-1 | 4-METHYL-2-PENTANONE | 10. | U |
| 591-78-6 | 2-HEXANONE | 10. | U |
| 127-18-4 | TETRACHLOROETHENE | 5. | U |
| 79-34-5 | 1,1,2,2-TETRACHLOROETHANE | 5. | U |
| 108-88-3 | TOLUENE | 4. | J |
| 108-90-7 | CHLOROBENZENE | 5. | U |
| 100-41-4 | ETHYLBENZENE | 5. | U |
| 100-42-5 | STYRENE | 5. | U |
| 1330-20-7 | XYLENE (TOTAL) | 5. | U |

1E

# VOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EX960

Lab Name: WANTEC Contract: 68W80075

Lab Code: WANTEC Case No.: 9521 SAS No.: SDG No.: EX951

Matrix: (soil/water) WATER Lab Sample ID: 803507

Sample wt/vol: 5. (g/mL) ML Lab File ID: 803507

Level: (low/med) LOW Date Received: 5/ 5/88

% Moisture: not dec.100. Date Analyzed: 5/ 5/88

Column: (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

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

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | | | | |
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1D

# PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EX960

Lab Name: WANTEC Contract: 68W80075

Lab Code: WANTEC Case No.: 9521 SAS No.: SDG No.: EX951

Matrix: (soil/water) WATER Lab Sample ID: 803507

Sample wt/vol: 1012. (g/mL) ML Lab File ID: 8511A27

Level: (low/med) LOW Date Received: 5/ 5/88

% Moisture: not dec. 100. dec. 0. Date Extracted: 5/10/88

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 5/12/88

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 319-84-6 | ALPHA-BHC | .049 | U |
| 319-85-7 | BETA-BHC | .049 | U |
| 319-86-8 | DELTA-BHC | .049 | U |
| 58-89-9 | GAMMA-BHC | .049 | U |
| 76-44-8 | HEPTACHLOR | .049 | U |
| 309-00-2 | ALDRIN | .049 | U |
| 1024-57-3 | HEPTACHLOR EPOXIDE | .049 | U |
| 959-98-8 | ENDOSULFAN I | .049 | U |
| 60-57-1 | DIELDRIN | .049 | U |
| 72-55-9 | 4,4'-DDE | .10 | U |
| 72-20-8 | ENDRIN | .049 | U |
| 33213-65-9 | ENDOSULFAN II | .10 | U |
| 72-54-8 | 4,4'-DDD | .10 | U |
| 1031-07-8 | ENDOSULFAN SULFATE | .10 | U |
| 50-29-3 | 4,4'-DDT | .10 | U |
| 72-43-5 | METHOXYCHLOR | .49 | U |
| 53494-70-5 | ENDRIN KETONE | .10 | U |
| 5103-71-9 | ALPHA CHLORDANE | .49 | U |
| 5103-74-2 | GAMMA CHLORDANE | .49 | U |
| 8001-35-2 | TOXAPHENE | 1.0 | U |
| 12674-11-2 | AROCLOR-1016 | .49 | U |
| 11104-28-2 | AROCLOR-1221 | .49 | U |
| 11141-16-5 | AROCLOR-1232 | .49 | U |
| 53469-21-9 | AROCLOR-1242 | .49 | U |
| 12672-29-6 | AROCLOR-1248 | .49 | U |
| 11097-69-1 | AROCLOR-1254 | 1.0 | U |
| 11096-82-5 | AROCLOR-1260 | 1.0 | U |

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EX960

Lab Name: WANTEC Contract: 68W80075

Lab Code: WANTEC Case No.: 9521 SAS No.: SDG No.: EX951

Matrix: (soil/water) WATER Lab Sample ID: 803507

Sample wt/vol: 1100. (g/mL) ML Lab File ID: 803507R

Level: (low/med) LOW Date Received: 5/ 5/88

% Moisture: not dec.100. dec. 0. Date Extracted: 5/10/88

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 5/20/88

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 9. | U |
| 111-44-4 | bis(2-Chloroethyl)ether | 9. | U |
| 95-57-8 | 2-Chlorophenol | 9. | U |
| 541-73-1 | 1,3-Dichlorobenzene | 9. | U |
| 106-46-7 | 1,4-Dichlorobenzene | 9. | U |
| 100-51-6 | Benzyl alcohol | 9. | U |
| 95-50-1 | 1,2-Dichlorobenzene | 9. | U |
| 95-48-7 | 2-Methylphenol | 9. | U |
| 108-60-1 | bis(2-Chloroisopropyl)ether | 9. | U |
| 106-44-5 | 4-Methylphenol | 9. | U |
| 621-64-7 | N-Nitroso-di-n-propylamine | 9. | U |
| 67-72-1 | Hexachloroethane | 9. | U |
| 98-95-3 | Nitrobenzene | 9. | U |
| 78-59-1 | Isophorone | 9. | U |
| 88-75-5 | 2-Nitrophenol | 9. | U |
| 105-67-9 | 2,4-Dimethylphenol | 9. | U |
| 65-85-0 | Benzoic acid | 45. | U |
| 111-91-1 | bis(2-Chloroethoxy)methane | 9. | U |
| 120-83-2 | 2,4-Dichlorophenol | 9. | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 9. | U |
| 91-20-3 | Naphthalene | 9. | U |
| 106-47-8 | 4-Chloroaniline | 9. | U |
| 87-68-3 | Hexachlorobutadiene | 9. | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 9. | U |
| 91-57-6 | 2-Methylnaphthalene | 9. | U |
| 77-47-4 | Hexachlorocyclopentadiene | 9. | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 9. | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 45. | U |
| 91-58-7 | 2-Chloronaphthalene | 9. | U |
| 88-74-4 | 2-Nitroaniline | 45. | U |
| 131-11-3 | Dimethylphthalate | 9. | U |
| 208-96-8 | Acenaphthylene | 9. | U |
| 606-20-2 | 2,6-Dinitrotoluene | 9. | U |

1C

SEMIVOLATILE ORGANICS ANALYSIS D TA SHEET

EPA SAMPLE NO.

EX960

Lab Name: WANTEC Contract: 68W80075

Lab Code: WANTEC Case No.: 9521 SAS No.: SDG No.: EX951

Matrix: (soil/water) WATER Lab Sample ID: 803507

Sample wt/vol: 1100. (g/mL) ML Lab File ID: 803507R

Level: (low/med) LOW Date Received: 5/ 5/88

% Moisture: not dec.100. dec. 0. Date Extracted: 5/10/88

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 5/20/88

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 99-09-2 | 3-Nitroaniline | 45. | U |
| 83-32-9 | Acenaphthene | 9. | U |
| 51-28-5 | 2,4-Dinitrophenol | 45. | U |
| 100-02-7 | 4-Nitrophenol | 45. | U |
| 132-64-9 | Dibenzofuran | 9. | U |
| 121-14-2 | 2,4-Dinitrotoluene | 9. | U |
| 84-66-2 | Diethylphthalate | 9. | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 9. | U |
| 86-73-7 | Fluorene | 9. | U |
| 100-01-6 | 4-Nitroaniline | 45. | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 9. | U |
| 86-30-6 | N-Nitrosodiphenylamine | 45. | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 9. | U |
| 118-74-1 | Hexachlorobenzene | 9. | U |
| 87-86-5 | Pentachlorophenol | 45. | U |
| 85-01-8 | Phenanthrene | 9. | U |
| 120-12-7 | Anthracene | 9. | U |
| 84-74-2 | Di-n-butylphthalate | 9. | U |
| 206-44-0 | Fluoranthene | 9. | U |
| 129-00-0 | Pyrene | 9. | U |
| 85-68-7 | Butylbenzylphthalate | 9. | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 18. | U |
| 56-55-3 | Benzo(a)anthracene | 9. | U |
| 218-01-9 | Chrysene | 9. | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 9. | U |
| 117-84-0 | Di-n-octylphthalate | 2. | BJ |
| 205-99-2 | Benzo(b)fluoranthene | 9. | U |
| 207-08-9 | Benzo(k)fluoranthene | 9. | U |
| 50-32-8 | Benzo(a)pyrene | 9. | U |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 9. | U |
| 53-70-3 | Dibenz(a,h)anthracene | 9. | U |
| 191-24-2 | Benzo(g,h,i)perylene | 9. | U |

(1) - Cannot be separated from diphenylamine

1F

# SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EX960

Lab Name: WANTEC Contract: 68W80075

Lab Code: WANTEC Case No.: 9521 SAS No.: SDG No.: EX951

Matrix: (soil/water) WATER Lab Sample ID: 803507

Sample wt/vol: 1100. (g/mL) ML Lab File ID: 803507R

Level: (low/med) LOW Date Received: 5/ 5/88

% Moisture: not dec.100. dec. 0. Date Extracted: 5/10/88

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 5/20/88

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

Number TICs found: 0

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | | | | |
| 2. | | | | |
| 3. | | | | |
| 4. | | | | |
| 5. | | | | |
| 6. | | | | |
| 7. | | | | |
| 8. | | | | |
| 9. | | | | |
| 10. | | | | |
| 11. | | | | |
| 12. | | | | |
| 13. | | | | |
| 14. | | | | |
| 15. | | | | |
| 16. | | | | |
| 17. | | | | |
| 18. | | | | |
| 19. | | | | |
| 20. | | | | |
| 21. | | | | |
| 22. | | | | |
| 23. | | | | |
| 24. | | | | |
| 25. | | | | |
| 26. | | | | |
| 27. | | | | |
| 28. | | | | |
| 29. | | | | |
| 30. | | | | |

# 5

ecology and environment, inc.
111 WEST JACKSON BLVD., CHICAGO, ILLINOIS 60604, TEL. 312-663-9415
International Specialists in the Environment

CRL Receipt Date 6/10/88 FIT Receipt Date 7/1/88 Review Completed 7/7/88

TO: G. BROON
FROM: Mary Gzyra
SUBJECT: INLAND STEEL
PAN: MN0163SA (1 hour charged for review) Case # 9521

Sample Description

| Organics (VOA, ABN, Pest/PCB) | | Inorganics (Metals, Cyanide) | |
|---|---|---|---|
| # | Low Soil | # 3 | Low Soil |
| | Low Water | 4 | Low Water |
| | Drinking Water | | Drinking Water |
| | Other | | Other |

Project Data Status _____ Completed!!

✓ Incomplete, awaiting soil + water organics; drinking water organics + inorganics.

FIT Data Review Findings:
As, Ni, Cr + Pb detected in all soils.

***Check Data Sheets for Transcription Errors***

✓ Compounds were detected in sample(s); see enclosed sheet.

Book No. 8 Page No. 66 Date Sampled 5/4/88

0759:2

recycled paper

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE: 6-29-88

SUBJECT: Review of Region V CLP Data
Received for Review on 6-10-88

FROM: Curtis Ross, Director (5SCRL)
Central Regional Laboratory
Jay Thacker

TO: Data User: Fit

We have reviewed the data for the following case(s).

SITE NAME: Inland Steel (MND) SMO Case No. 9521

EPA Data Set No. SF 5154 No. of Samples: 7 D.U./Activity Numbers 1905/C72122

CRL No. 88FB21 S20-S24, D24, R05

SMO Traffic No. MEX 616-620, 623-624

CLP Laboratory: WESTON Hrs. Required for Review: 15

Following are our findings:

This review covers analysis of three low soils and four low $H_2O$ samples for total metals and CN. Selenium data on soils is unusable for 0% spike recovery. As and Ag soil data is flagged as estimated for low spike recovery on a sample having no detection of these analytes in them. This indicates low biased spike recovery. Soil serial dilution exceeding 10% flagged as estimated (E) Al, Ca and Mn data. Data for $H_2O$ samples are flagged as estimated for Ag with low biased detection on spikes, as no concentration was found in spiked sample. Many reporting errors were corrected in response from CLP, as well as As on MEX617 and Pb for MEX in $H_2O$ samples requires no star for duplication. Other data is satisfactory.

6-29-88
DMM

[illegible] are acceptable for use.
[illegible] are acceptable for use with qualifications referenced above.
[illegible]ta Qualifier sheets and Calibration Outlier forms for flags and [illegible]nal comments.
[illegible] preliminary - pending verification by Contractor Laboratory.
[illegible]ummary above.
[illegible] acceptable.

[illegible]mpsey, CLP Quality Assurance Officer, Analytical Operations Branch
[illegible] Quality Assurance Research, EMSL, Las Vegas

| COMPOUND FOOTNOTES | DEFINITION | INTERPRETATION |
|---|---|---|
| U | Indicates compound was analyzed for but not detected. | Compound was not detected. |
| J | Indicates an estimated value. | Compound value may be semi-quantitative. |
| UJ | Quantitation limit is estimated due to a Quality Control (QC) protocol. | Compound was not detected. |
| C | This flag applies to pesticide results where the identification has been confirmed by GC/MS. Single component pesticides ≥10 ng/ul in the final extract shall be confirmed by GC/MS. | Compound was confirmed by mass spectroscopy |
| B | This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action. | Compound value may be semi-quantitative if it is <5x the blank concentration (<10x the blank concentrations for common lab artifacts: phthalates, methylene chloride, acetone, toluene, 2-butanone). |
| E | This flag identifies compounds whose concentrations exceed the calibration range of the GC/MS instrument for that specific analysis. This flag will not apply to pesticides/PCBs analyzed by GC/EC methods. | Compound value may be semi-quantitative. |
| D | This flag identifies all compounds identified in an analysis at a secondary dilution factor. | Alerts data user to a possible change in the CRQL. |
| A | This flag indicates that a TIC is a suspected aldol-condensation product. | Alerts data user of a lab artifact. |
| R | Results are unusable due to a major violation of QC protocol. | Compound value is not usable. |

| ANALYTE FOOTNOTES | | DEFINITION | INTERPRETATION |
|---|---|---|---|
| OLD | NEW | | |
| E | E | Estimated or not reported due to interference. See laboratory narrative. | Compound or element was not detected or value may be semi-quantitative. |
| S | S | Analysis by Method of Standard Additions. | Value may be quantitative. |
| R | N | Spike recoveries outside QC protocols which indicates a possible matrix problem. Data may be biased high or low. See spike results and laboratory narrative. | Value may be quantitative or semi-quantitative. |
| * | * | Duplicate value outside QC protocols which indicates a possible matrix problem. | Value may be semi-quantitative. |
| + | + | Correlation coefficient for standard additions in less than 0.995. See review and laboratory narrative. | Data value may be biased. |
| [ ] | B | Value is real, but is above instrument DL and below CRDL. | Value may be quantitative or semi-quantitative. |
| UJ | | DL is estimated because of a QC protocol. DL is possibly above or below CRDL. | Compound or element was not detected. |
| J | | Value is above CRDL and is an estimated value because of a QC Protocol. | Value may be semi-quantitative. |
| U | U | Compound was analyzed for but not detected. | Compound was not detected. |
| | N | Duplicate injection precision not met. | Value may be semi-quantitative. |
| | W | Post digestion spike for furnance AA analysis is out of control limits (35-115%), while sample absorbance is <50% of spike absorbance. | Value may be semi-quantitative. |
| NA | | Value not available due to insufficient data. | |
| NR | | Value not recommended to be calculated, since chemical has proven to be a human carcinogen. | |
| ( ) | | Estimated value. | |

Source: Ecology and Environment, Inc. 1988.

Table 4- Cont. INLAND STEEL CASE # 9521

| Sample Collection Information and Parameters | Sample Number ≥_1 | ≥_2 | ≥_3 | ≥_4 | ≥_5 | ≥_6 | ≥_7 | ≥_8 | ≥_9 | ≥_10 | ≥_11 | ≥_12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Pesticides/PCBs Cont. | | | | | | | | | | | | |
| Aroclor 1232 | | | | | | | | | | | | |
| Aroclor 1242 | | | | | | | | | | | | |
| Aroclor 1248 | | | | | | | | | | | | |
| Aroclor 1254 | SOILS | | | | WATERS | | | | | | | |
| Aroclor 1260 | | | | | | | | | | | | |
| Analyte Detected (values in mg/ [ppm]) | MEX 616 | 617 | 618 | | MEX 619 | 620 | 623 | 624 | | | | |
| aluzinum | 886 E | 2120 E | 1740 E | | 210 | 270 | 217 | 163 B | | | | |
| antimony | | 13.8 | | | | | | | | | | |
| arsenic | 0.66 JWNB | 1.8 JWNB | 1.2 JNB | | | | | | | | | |
| barius | 21.7 B | 24.6 B | 14.9 B | | 267 B | 267 B | 267 B | | | | | |
| beryllium | | 0.35 B | 0.11 B | | | | | | | | | |
| cadmium | | | | | | | | | | | | |
| calcium | 3010 E | 8530 E | 1020 E | | 58000 | 58300 | 57200 | 47 B | | | | |
| chromium | 2.4 | 9 | 7.7 | | | | | | | | | |
| cobalt | 8.9 B | 4.5 B | 3.6 B | | | | | | | | | |
| copper | | 10 | 7.6 | | 12.8 B | 15.5 B | 15 B | | | | | |
| iron | 14100 | 8560 | 7660 | | 66.1 B | 446 | 130 | | | | | |
| lead | 2.1 | 2.2 | 22.4 | | | | | | | | | |
| magnesium | 619 B | 2530 | 1240 | | 34400 | 34000 | 34000 | | | | | |
| manganese | 1010 E | 274 E | 489 E | | 34.4 | 70.9 | 36.2 | 4.2 B | | | | |
| mercury | | | | | | | | | | | | |
| nickel | 12.8 | 10.3 | 5.7 B | | | | | | | | | |
| potassium | | | | | 1370 B | 2830 B | 2830 B | | | | | |
| selenium | | | | | | | | | | | | |
| silver | | | | | | | | | | | | |
| sodium | | 49.6 B | 114 B | | 7910 E | 7830 E | 8410 E | 156 EB | | | | |
| thallium | | | | | | | | | | | | |
| vanadium | 4.7 B | 12.3 | 6.5 B | | | | | | | | | |
| zinc | 103 | 17 | 30.6 | | 29.6 * | | | | | | | |
| cyanide | | | | | | | | | | | | |

-- Not detected.

The qualifier "*" does not affect the data for Zn - MEX 619.

M. Dzo

U.S. EPA - CLP

6
DUPLICATES

EPA SAMPLE NO.

MEX524D

Lab Name: WESTON - LIONVILLE Contract: 68-W8-0057

Lab Code: WESTON Case No.: 9521 SAS No.: SDG No.: MEX516

Matrix (soil/water): WATER Level (low/med): LOW

% Solids for Sample: 0.0 % Solids for Duplicate:

Concentration Units (ug/L or mg/kg dry weight): UG/L

| Analyte | Control Limit | Sample (S) | C | Duplicate (D) | C | RPD | Q | M |
|---|---|---|---|---|---|---|---|---|
| Aluminum | | | | | | | | P |
| Antimony | | | | | | | | P |
| Arsenic | | | | | | | | F |
| Barium | | | | | | | | P |
| Beryllium | | | | | | | | P |
| Cadmium | | | | | | | | P |
| Calcium | | | | | | | | P |
| Chromium | | | | | | | | P |
| Cobalt | | | | | | | | P |
| Copper | | | | | | | | P |
| Iron | | | | | | | | P |
| Lead | | | | | | | | F |
| Magnesium | | | | | | | | P |
| Manganese | | | | | | | | P |
| Mercury | 0.2 | 0.2000 | U | 0.2000 | U | | | CV |
| Nickel | | | | | | | | P |
| Potassium | | | | | | | | P |
| Selenium | | | | | | | | F |
| Silver | | | | | | | | P |
| Sodium | | | | | | | | P |
| Thallium | | | | | | | | F |
| Vanadium | | | | | | | | P |
| Zinc | | | | | | | | P |
| Cyanide | | | | | | | | C |

SAMPLE DATE: 5/4-5/88
LOG IN DATE: 5/20/88
DUE DATE: 7/13/88

MAY 18 1988

SUPERFUND 5154

# CENTRAL REGIONAL LABORATORY SAMPLE DATA REPORT
## ORGANICS/INORGANICS

THIS FORM IS TO BE USED FOR SAMPLES SENT TO CONTRACT ONLY

CASE NUMBER/SAS No. 9521 SITE NAME Inland Steel LABORATORY Wantech/Weston DATE SHIPPED 5/4/88

SUPERFUND DU NUMBER U905 EPA RPM or OSC (S.M.S.)/(CES) _____ CERCLIS NUMBER MID980609937 PAGE 1 OF 1

ACTIVITY NUMBER C72100

| CRL LOG NUMBER | ORGANIC TRAFFIC REPORT NUMBER or SAS Packing List No. | INORGANIC TRAFFIC REPORT NUMBER or SAS Packing List No. | WATER OR LIQUIDS: ACID-BASE NEUTRAL CPDS ORGANIC SCAN UG/L TOX17574 | VOLATILE ORGANIC ANALYSIS ORGANIC SCAN UG/L TOX17564 | WATER POLYCHLORINATED BIPHENYLS UG/L PES 17144 | WATER CHLORINATED PESTICIDES UG/L PES17134 | TOTAL METALS IN WATER UG/L MET111 | WATER CYANIDE UG/L MIN74919 | NITRATE/NITRITE MG/L MIN7284 | AMMONIA MG/L MIN7294 | RESIDUE, FILTERABLE TDS MG/L MIN7362 | RESIDUE, NON-FILT TSS MG/L MIN7372 | | | SEDIMENTS or SOILS: ACID-BASE NEUTRAL CPDS ORGANIC SCAN MG/KG TOX215722 | VOLATILE ORGANIC ANALYSIS ORGANIC SCAN MG/KG TOX215622 | SEDIMENTS POLYCHLORINATED BIPHENYLS MG/KG PES211422 | SEDIMENT CHLORINATED PESTICIDES MG/KG 211322 | TOTAL METALS MG/KG MET413 | CYANIDE MG/KG MIN44930 | EP TOXICITY METALS MG/KG | AMMONIA MG/KG MIN42925 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 88F021520 | EX951 ✓ | MEX1016 | | | | | | | ✓ | | | | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | |
| 88F021521 | EX952 ✓ | MEX1017 | | | | | | | ✓ | | | | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | |
| 88F021522 | EX953 ✓ | MEX1018 | | | | | | | ✓ | | | | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | |
| 88F021523 | EX954 ✓ | MEX1019 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | | | | | | | | | | | | |
| 88F021524 | EX956 ✓ | MEX1020 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | | | | | | | | | | | | |
| 88F021D24 | EX959 ✓ | MEX1023 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | | | | | | | | | | | | |
| 88F021P05 | EX960 ✓ | MEX1024 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | | | | | | | | | | | | |
| | *COC | | | | | | | | DATA | | | | | | | | | | | | | | | | | |

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MEX616

Lab Name: WESTON - LIONVILLE  Contract: 68-W8-0057

Lab Code: WESTON  Case No.: 9521  SAS No.:  SDG No.: MEX616

Matrix (soil/water): SOIL  Lab Sample ID: 8805-297-001

Level (low/med): LOW  Date Received: 05/05/88

% Solids: 87.8

Concentration Units (ug/L or mg/kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M | |
|---|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 886 | | E | P | |
| 7440-36-0 | Antimony | 11.9 | U | | P | |
| 7440-38-2 | Arsenic | 0.66 | B | NW | F | |
| 7440-39-3 | Barium | 21.7 | B | | P | |
| 7440-41-7 | Beryllium | 0.10 | U | | P | |
| 7440-43-9 | Cadmium | 0.53 | U | | P | |
| 7440-70-2 | Calcium | 3010 | | E | P | |
| 7440-47-3 | Chromium | 2.4 | | | P | |
| 7440-48-4 | Cobalt | 8.9 | B | | P | |
| 7440-50-8 | Copper | 2.3 | U | | P | |
| 7439-89-6 | Iron | 14100 | | | P | |
| 7439-92-1 | Lead | 2.1 | | | F | |
| 7439-95-4 | Magnesium | 619 | B | | P | |
| 7439-96-5 | Manganese | 1010 | | E | P | |
| 7439-97-6 | Mercury | 0.1 ~~0.23~~ | U | | CV | NSP 6-8-88 |
| 7440-02-0 | Nickel | 12.8 | | | P | |
| 7440-09-7 | Potassium | 312 | U | | P | |
| 7782-49-2 | Selenium | 0.29 | U | N | F | |
| 7440-22-4 | Silver | 1.6 | U | N | P | |
| 7440-23-5 | Sodium | 29.3 | U | | P | |
| 7440-28-0 | Thallium | 0.41 | U | | F | |
| 7440-62-2 | Vanadium | 4.7 | B | | P | |
| 7440-66-6 | Zinc | 10.3 | | | P | |
| | Cyanide | 0.6 ~~11.4~~ | U | | C | NSP 6-8-88 |

Color Before: BROWN  Clarity Before:  Texture: MED

Color After: BROWN  Clarity After:  Artifacts:

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MEX617

Lab Name: WESTON - LIONVILLE Contract: 68-W8-0057

Lab Code: WESTON Case No.: 9521 SAS No.: SDG No.: MEX616

Matrix (soil/water): SOIL Lab Sample ID: 8805-297-002

Level (low/med): LOW Date Received: 05/05/88

% Solids: 90.8

Concentration Units (ug/L or mg/kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M | |
|---|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 2120 | | E | P | |
| 7440-36-0 | Antimony | 13.8 | | | P | |
| 7440-38-2 | Arsenic | 1.8 ~~1.5~~ | B | NSW | F | |
| 7440-39-3 | Barium | 24.6 | B | | P | |
| 7440-41-7 | Beryllium | 0.25 | B | | P | |
| 7440-43-9 | Cadmium | 0.42 | U | | P | |
| 7440-70-2 | Calcium | 8580 | | E | P | |
| 7440-47-3 | Chromium | 9.0 | | | P | |
| 7440-48-4 | Cobalt | 4.5 | B | | P | |
| 7440-50-8 | Copper | 10.0 | | | P | |
| 7439-89-6 | Iron | 8560 | | | P | |
| 7439-92-1 | Lead | 2.2 | | | F | |
| 7439-95-4 | Magnesium | 2530 | | | P | |
| 7439-96-5 | Manganese | 274 | | E | P | |
| 7439-97-6 | Mercury | 0.1 ~~0.22~~ | U | | CV | NSP 6-27-88 |
| 7440-02-0 | Nickel | 10.3 | | | P | |
| 7440-09-7 | Potassium | 244 | U | | P | |
| 7782-49-2 | Selenium | 0.28 | U | N | F | |
| 7440-22-4 | Silver | 1.2 | U | N | P | |
| 7440-23-5 | Sodium | 49.6 | B | | P | |
| 7440-28-0 | Thallium | 0.39 | U | | F | |
| 7440-62-2 | Vanadium | 12.3 | | | P | |
| 7440-66-6 | Zinc | 17.0 | | | P | |
| | Cyanide | 0.6 ~~11.0~~ | U | | C | NSP 6-27-88 |

Color Before: BROWN Clarity Before: Texture: MED

Color After: BROWN Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

EPA SAMPLE NO.

1

INORGANIC ANALYSIS DATA SHEET

MEX618

Lab Name: WESTON - LIONVILLE Contract: 68-W8-0057

Lab Code: WESTON Case No.: 9521 SAS No.: SDG No.: MEX616

Matrix (soil/water): SOIL Lab Sample ID: 8805-297-003

Level (low/med): LOW Date Received: 05/05/88

% Solids: 94.7

Concentration Units (ug/L or mg/kg dry weight): MG/KG

| CAS No. | Analyte | Concentration | C | Q | M | |
|---|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 1740 | | E | P | |
| 7440-36-0 | Antimony | 10.5 | U | | P | |
| 7440-38-2 | Arsenic | 1.2 | B | N | F | |
| 7440-39-3 | Barium | 14.8 | B | | P | |
| 7440-41-7 | Beryllium | 0.11 | B | | P | |
| 7440-43-9 | Cadmium | 0.48 | U | | P | |
| 7440-70-2 | Calcium | 1020 | | E | P | |
| 7440-47-3 | Chromium | 7.7 | | | P | |
| 7440-48-4 | Cobalt | 3.6 | B | | P | |
| 7440-50-8 | Copper | 7.6 | | | P | |
| 7439-89-6 | Iron | 7660 | | | P | |
| 7439-92-1 | Lead | 22.4 ~~42.5~~ | | | F | |
| 7439-95-4 | Magnesium | 1240 | | | P | |
| 7439-96-5 | Manganese | 489 | | E | P | |
| 7439-97-6 | Mercury | 0.11 ~~0.21~~ | U | | CV | MSP 6-8-88 |
| 7440-02-0 | Nickel | 5.7 | B | | P | |
| 7440-09-7 | Potassium | 278 | U | | P | |
| 7782-49-2 | Selenium | 0.25 | U | N | F | |
| 7440-22-4 | Silver | 1.4 | U | N | P | |
| 7440-23-5 | Sodium | 114 | B | | P | |
| 7440-28-0 | Thallium | 0.34 | U | W | F | |
| 7440-62-2 | Vanadium | 6.5 | B | | P | |
| 7440-66-6 | Zinc | 30.6 | | | P | |
| | Cyanide | 0.5 ~~10.5~~ | U | | C | MSP 6-8-88 |

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MEX619

Lab Name: WESTON - LIONVILLE Contract: 68-W8-0057

Lab Code: WESTON Case No.: 9521 SAS No.: SDG No.: MEX616

Matrix (soil/water): WATER Lab Sample ID: 8805-297-004

Level (low/med): LOW Date Received: 05/05/88

% 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 | 210 | | | P |
| 7440-36-0 | Antimony | 59.8 | U | | P |
| 7440-38-2 | Arsenic | 0.90 | U | | F |
| 7440-39-3 | Barium | 26.7 | B | | P |
| 7440-41-7 | Beryllium | 0.50 | U | | P |
| 7440-43-9 | Cadmium | 2.7 | U | | P |
| 7440-70-2 | Calcium | 58000 | | | P |
| 7440-47-3 | Chromium | 5.5 | U | | P |
| 7440-48-4 | Cobalt | 8.3 | U | | P |
| 7440-50-8 | Copper | 12.8 | B | | P |
| 7439-89-6 | Iron | 66.1 | B | | P |
| 7439-92-1 | Lead | 1.1 | U | NW | F |
| 7439-95-4 | Magnesium | 34400 | | | P |
| 7439-96-5 | Manganese | 24.4 | | | P |
| 7439-97-6 | Mercury | 0.20 | U | | CV |
| 7440-02-0 | Nickel | 8.1 | U | | P |
| 7440-09-7 | Potassium | 2370 | B | | P |
| 7782-49-2 | Selenium | 1.3 | U | | F |
| 7440-22-4 | Silver | 7.9 | U | N | P |
| 7440-23-5 | Sodium | 7910 | | E | P |
| 7440-28-0 | Thallium | 1.8 | U | | F |
| 7440-62-2 | Vanadium | 12.4 | U | | P |
| 7440-66-6 | Zinc | 29.6 | | * | P |
| | Cyanide | 10.0 | U | | C |

NSP 6-8-88

Color Before: COLORLESS Clarity Before: CLEAR Texture:

olor After: COLORLESS Clarity After: CLEAR Artifacts:

omments:

U.S. EPA - CLP

1

• INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MEX620

Lab Name: WESTON - LIONVILLE Contract: 68-W8-0057

Lab Code: WESTON Case No.: 9521 SAS No.: SDG No.: MEX616

Matrix (soil/water): WATER Lab Sample ID: 8805-297-005

Level (low/med): LOW Date Received: 05/05/88

% 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 | 270 | | | P |
| 7440-36-0 | Antimony | 59.8 | U | | P |
| 7440-38-2 | Arsenic | 0.90 | U | | F |
| 7440-39-3 | Barium | 26.7 | B | | P |
| 7440-41-7 | Beryllium | 0.50 | U | | P |
| 7440-43-9 | Cadmium | 2.7 | U | | P |
| 7440-70-2 | Calcium | 58300 | | | P |
| 7440-47-3 | Chromium | 5.5 | U | | P |
| 7440-48-4 | Cobalt | 8.3 | U | | P |
| 7440-50-8 | Copper | 15.5 | B | | P |
| 7439-89-6 | Iron | 446 | | | P |
| 7439-92-1 | Lead | 1.1 | U | | F |
| 7439-95-4 | Magnesium | 34000 | | | P |
| 7439-96-5 | Manganese | 70.9 | | | P |
| 7439-97-6 | Mercury | 0.20 | U | | CV |
| 7440-02-0 | Nickel | 8.1 | U | | P |
| 7440-09-7 | Potassium | 2830 | B | | P |
| 7782-49-2 | Selenium | 1.3 | U | W | F |
| 7440-22-4 | Silver | 7.9 | U | N | P |
| 7440-23-5 | Sodium | 7830 | | E | P |
| 7440-28-0 | Thallium | 1.8 | U | | F |
| 7440-62-2 | Vanadium | 12.4 | U | | P |
| 7440-66-6 | Zinc | 15.2 | U | * | P |
| | Cyanide | 10.0 | U | | C |

Color Before: RED Clarity Before: CLOUDY Texture:

Color After: RED Clarity After: CLOUDY Artifacts:

Comments:

U.S. EPA - CLP

EPA SAMPLE NO.

1

INORGANIC ANALYSIS DATA SHEET

MEX623

Lab Name: WESTON - LIONVILLE Contract: 68-W8-0057

Lab Code: WESTON Case No.: 9521 SAS No.: SDG No.: MEX616

Matrix (soil/water): WATER Lab Sample ID: 8805-297-cc

Level (low/med): LOW Date Received: 05/05/88

% 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 | 217 | | | P |
| 7440-36-0 | Antimony | 59.8 | U | | P |
| 7440-38-2 | Arsenic | 0.90 | U | | F |
| 7440-39-3 | Barium | 26.7 | B | | P |
| 7440-41-7 | Beryllium | 0.50 | U | | P |
| 7440-43-9 | Cadmium | 2.7 | U | | P |
| 7440-70-2 | Calcium | 57200 | | | P |
| 7440-47-3 | Chromium | 5.5 | U | | P |
| 7440-48-4 | Cobalt | 8.3 | U | | P |
| 7440-50-8 | Copper | 15.0 | B | | P |
| 7439-89-6 | Iron | 130 | | | P |
| 7439-92-1 | Lead | 1.1 | U | W | F |
| 7439-95-4 | Magnesium | 34000 | | | P |
| 7439-96-5 | Manganese | 36.2 | | | P |
| 7439-97-6 | Mercury | 0.20 | U | | CV |
| 7440-02-0 | Nickel | 8.1 | U | | P |
| 7440-09-7 | Potassium | 2830 | B | | P |
| 7782-49-2 | Selenium | 1.3 | U | W | F |
| 7440-22-4 | Silver | 7.9 | U | N | P |
| 7440-23-5 | Sodium | 8410 | | E | P |
| 7440-28-0 | Thallium | 1.8 | U | | F |
| 7440-62-2 | Vanadium | 12.4 | U | | P |
| 7440-66-6 | Zinc | 15.2 | U | * | P |
| | Cyanide | 10.0 | U | | C |

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MEX624

Lab Name: WESTON - LIONVILLE Contract: 68-W8-0057

Lab Code: WESTON Case No.: 9521 SAS No.: SDG No.: MEX616

Matrix (soil/water): WATER Lab Sample ID: 8805-297-007

Level (low/med): LOW Date Received: 05/05/88

% 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 | 163 | B | | P |
| 7440-36-0 | Antimony | 59.8 | U | | P |
| 7440-38-2 | Arsenic | 0.90 | U | | F |
| 7440-39-3 | Barium | 17.4 | U | | P |
| 7440-41-7 | Beryllium | 0.50 | U | | P |
| 7440-43-9 | Cadmium | 2.7 | U | | P |
| 7440-70-2 | Calcium | 47.0 | B | | P |
| 7440-47-3 | Chromium | 5.5 | U | | P |
| 7440-48-4 | Cobalt | 8.3 | U | | P |
| 7440-50-8 | Copper | 11.8 | U | | P |
| 7439-89-6 | Iron | 25.6 | U | | P |
| 7439-92-1 | Lead | 1.1 | U | | F |
| 7439-95-4 | Magnesium | 89.7 | U | | P |
| 7439-96-5 | Manganese | 4.2 | B | | P |
| 7439-97-6 | Mercury | 0.20 | U | | CV |
| 7440-02-0 | Nickel | 8.1 | U | | P |
| 7440-09-7 | Potassium | 1580 | U | | P |
| 7782-49-2 | Selenium | 1.3 | U | | F |
| 7440-22-4 | Silver | 7.9 | U | N | P |
| 7440-23-5 | Sodium | 156 | B | E | P |
| 7440-28-0 | Thallium | 1.8 | U | | F |
| 7440-62-2 | Vanadium | 12.4 | U | | P |
| 7440-66-6 | Zinc | 15.2 | U | * | P |
| | Cyanide | 10.0 | U | | C |

Color Before: COLORLESS Clarity Before: CLEAR Texture:

olor After: COLORLESS Clarity After: CLEAR Artifacts:

omments:

# QC EXCEPTION SUMMARY REPORT

CASE # 9521
DATA SET # SF5154
LAB ~~SDG~~ # MEX 616
DATE: 6-29-88

SITE Inland Steel
LAB Weston
REVIEWED BY Dorothy M. May

MATRIX: soil
CONC. : low

WATER SAMPLE SPK. _____
WATER SAMPLE DUP. _____
SOIL SAMPLE SPK. MEX 616+6
SOIL SAMPLE DUP. MEX 616+6

| | OVERALL CASE QC | | | | | | | | | MATRIX SPECIFIC QC | | | | | | SAMPLE SPECIFIC QC | | FIELD QC | | | REGIONAL QC | | | OTHER/ COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Holding Time | Cal Blanks | Init Calver | Contin Calver | Prep Blk AQ | Prep Blk SOL | ICS %R | LCS % AQ | LCS % SOL | Sol Dup RPD | Sol Spk %R | AQ Dup RPD | AQ Spk %R | Ser Dilu AQ | Ser Dilu SOL | GFAA Dup | GFAA Spike | Blank | Dup RPD | Spike %R | Blind Blank | Blind Spike %R | Split Sample RPD | |
| Aluminum | | | | | | | | | | | | | | | 17% | | | | | | | | | |
| Antimony | | | | | | | | | | | | | | | | | | | | | | | | |
| Arsenic | | | | | | | | | | | 21% | | | | | | | | | | | | | |
| Barium | | | | | | | | | | | | | | | | | | | | | | | | |
| Beryllium | | | | | | | | | | | | | | | | | | | | | | | | |
| Cadmium | | | | | | | | | | | | | | | | | | | | | | | | |
| Calcium | | | | | | | | | | | | | | | 24% | | | | | | | | | |
| Chromium | | | | | | | | | | | | | | | | | | | | | | | | |
| Cobalt | | | | | | | | | | | | | | | | | | | | | | | | |
| Copper | | | | | | | | | | | | | | | | | | | | | | | | |
| Iron | | | | | | | | | | | | | | | | | | | | | | | | |
| Lead | | | | | | | | | | | | | | | | | | | | | | | | |
| Magnesium | | | | | | | | | | | | | | | | | | | | | | | | |
| Manganese | | | | | | | | | | | | | | | 18% | | | | | | | | | |
| Mercury | | | | | | | | | | | | | | | | | | | | | | | | |
| Nickel | | | | | | | | | | | | | | | | | | | | | | | | |
| Potassium | | | | | | | | | | | | | | | | | | | | | | | | |
| Selenium | | | | | | | | | | | 0% | | | | | | | | | | | | | |
| Silver | | | | | | | | | | | 28% | | | | | | | | | | | | | |
| Sodium | | | | | | | | | | | | | | | | | | | | | | | | |
| Thallium | | | | | | | | | | | | | | | | | | | | | | | | |
| Tin | | | | | | | | | | | | | | | | | | | | | | | | |
| Vanadium | | | | | | | | | | | | | | | | | | | | | | | | |
| Zinc | | | | | | | | | | | | | | | | | | | | | | | | |
| Cyanide | | | | | | | | | | | | | | | | | | | | | | | | |

# QC EXCEPTION SUMMARY REPORT

CASE # 9521
DATA SET # SF 5154
LAB ~~SDG~~ # MEX 616
DATE: 6-29-88

SITE Inland Steel
LAB Weston
REVIEWED BY Dorothy M. May

MATRIX: $H_2O$
CONC. : low

WATER SAMPLE SPK. MEX 619
WATER SAMPLE DUP. MEX 619+6
SOIL SAMPLE SPK.
SOIL SAMPLE DUP.

| | OVERALL CASE QC | | | | | | | | | MATRIX SPECIFIC QC | | | | | | SAMPLE SPECIFIC QC | | FIELD QC | | | REGIONAL QC | | | OTHER COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Holding Time | Cal Blanks | Init Calver | Contin Calver | Prep Blk AQ | Prep Blk SOL | ICS %R | LES % AQ | LES % SOL | Sol Dup RPD | Sol Spk %R | AQ Dup RPD | AQ Spk %R | Ser Dilts AQ | Ser Dilts SOL | GFAA Dup | GFAA Spike | Blank | Dup RPD | Spike %R | Blind Blank | Blind Spike %R | Split Sample RPD | |
| Aluminum | | | | | | | | | | | | | | | | | | | | | | | | |
| Antimony | | | | | | | | | | | | | | | | | | | | | | | | |
| Arsenic | | | | | | | | | | | | | | | | | | | | | | | | |
| Barium | | | | | | | | | | | | | | | | | | | | | | | | |
| Beryllium | | | | | | | | | | | | | | | | | | | | | | | | |
| Cadmium | | | | | | | | | | | | | | | | | | | | | | | | |
| Calcium | | | | | | | | | | | | | | | | | | | | | | | | |
| Chromium | | | | | | | | | | | | | | | | | | | | | | | | |
| Cobalt | | | | | | | | | | | | | | | | | | | | | | | | |
| Copper | | | | | | | | | | | | | | | | | | | | | | | | |
| Iron | | | | | | | | | | | | | | | | | | | | | | | | |
| Lead | | | | | | | | | | | | | | | | | | | | | | | | |
| Magnesium | | | | | | | | | | | | | | | | | | | | | | | | |
| Manganese | | | | | | | | | | | | | | | | | | | | | | | | |
| Mercury | | | | | | | | | | | | | | | | | | | | | | | | |
| Nickel | | | | | | | | | | | | | | | | | | | | | | | | |
| Potassium | | | | | | | | | | | | | | | | | | | | | | | | |
| Selenium | | | | | | | | | | | | | | | | | | | | | | | | |
| Silver | | | | | | | | | | | | | 39% | | | | | | | | | | | |
| Sodium | | | | | | | | | | | | | | | | | | | | | | | | |
| Thallium | | | | | | | | | | | | | | | | | | | | | | | | |
| Tin | | | | | | | | | | | | | | | | | | | | | | | | |
| Vanadium | | | | | | | | | | | | | | | | | | | | | | | | |
| Zinc | | | | | | | | | | | | | | | | | | | | | | | | |
| Cyanide | | | | | | | | | | | | | | | | | | | | | | | | |

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# COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: WESTON - LIONVILLE Contract: 68-W8-0057

Lab Code: WESTON Case No.: 9521 SAS No.: SDG No.: MEX616

SOW No.: 7/87

| EPA Sample No. | Lab Sample ID. |
|---|---|
| MEX616 | 8805-297-001 |
| MEX616D | 8805-297-001R |
| MEX616S | 8805-297-001S |
| MEX617 | 8805-297-002 |
| MEX618 | 8805-297-003 |
| MEX618D | 8805-297-003R |
| MEX618S | 8805-297-003S |
| MEX619 | 8805-297-004 |
| MEX619D | 8805-297-004R |
| MEX619S | 8805-297-004S |
| MEX620 | 8805-297-005 |
| MEX623 | 8805-297-006 |
| MEX624 | 8805-297-007 |
| MEX624D | 8805-297-007R |
| MEX624S | 8805-297-007S |

Were ICP interelement corrections applied? Yes/No yes

Were ICP background corrections applied? Yes/No yes
If yes-were raw data generated before application of background corrections? Yes/No yes

Comments:

Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Lab Manager: [signature]

Date: 6-8-88

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3
BLANKS

Lab Name: WESTON - LIONVILLE Contract: 68-W8-0057

Lab Code: WESTON Case No.: 9521 SAS No.: SDG No.: MEX616

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 | 76.0 | U | 76.0 | U | 76.0 | U | 104.7 | B | 15.200 | U | P |
| Antimony | 59.8 | U | 59.8 | U | 59.8 | U | 59.8 | U | 11.960 | U | P |
| Arsenic | 0.9 | U | 0.9 | U | 1.4 | B | 0.9 | U | 0.900 | U | F |
| Barium | 17.4 | U | 17.4 | U | 17.4 | U | | | 3.480 | U | P |
| Beryllium | 0.5 | U | 0.5 | U | 0.5 | U | 0.5 | U | 0.100 | U | P |
| Cadmium | 2.7 | U | 2.7 | U | 2.7 | U | 2.7 | U | 0.540 | U | P |
| Calcium | 37.5 | U | 37.5 | U | 37.5 | U | 37.5 | U | 7.500 | U | P |
| Chromium | 5.5 | U | 5.5 | U | 5.5 | U | 5.5 | U | 1.100 | U | P |
| Cobalt | 8.3 | U | 8.3 | U | 8.3 | U | 8.3 | U | 1.660 | U | P |
| Copper | 11.8 | U | 11.8 | U | 11.8 | U | 21.0 | B | 2.360 | U | P |
| Iron | 25.6 | U | 25.6 | U | 25.6 | U | 25.6 | U | 5.120 | U | P |
| Lead | 1.1 | U | -1.1 | B | -1.1 | B | 1.1 | U | 0.220 | U | F |
| Magnesium | 89.7 | U | 89.7 | U | 89.7 | U | 89.7 | U | 17.940 | U | P |
| Manganese | 2.1 | U | 2.1 | U | 2.1 | U | 2.6 | B | 0.420 | U | P |
| Mercury | 0.2 | U | 0.2 | U | 0.2 | U | 0.2 | U | 0.1 ~~0.200~~ | U | CV NJP 6-8-88 |
| Nickel | 8.1 | U | 8.1 | U | 8.1 | U | 8.1 | U | 1.620 | U | P |
| Potassium | 1576.5 | U | -1927.3 | B | -1794.4 | B | 1576.5 | U | 315.300 | U | P |
| Selenium | 1.3 | U | 1.3 | U | 1.3 | U | | | 0.260 | U | F |
| Silver | 7.9 | U | 7.9 | U | 7.9 | U | 9.0 | B | 1.940 | U | P |
| Sodium | 147.8 | U | 147.8 | U | 147.8 | U | 147.8 | U | 29.560 | U | P |
| Thallium | -1.9 | B | 1.8 | U | 1.8 | U | | | 0.360 | U | F |
| Vanadium | 12.4 | U | 12.4 | U | 12.4 | U | 12.4 | U | 2.480 | U | P |
| Zinc | 15.2 | U | 15.2 | U | 15.2 | U | 15.2 | U | 3.040 | U | P |
| Cyanide | 10.0 | U | 10.0 | U | 10.0 | U | | | 0.5 ~~10.000~~ | U | C |
| | | | | | | | | | NJP 6-8-88 | | |

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3
BLANKS

Lab Name: WESTON - LIONVILLE Contract: 68-W8-0057

Lab Code: WESTON Case No.: 9521 SAS No.: SDG No.: MEX616

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 | 76.0 | U | 91.0 | B | 102.3 | B | 158.4 | B | 118.2 | B | P |
| Antimony | 59.8 | U | 59.8 | U | 59.8 | U | 59.8 | U | 59.8 | U | P |
| Arsenic | 0.9 | U | 0.9 | U | 0.9 | U | | | 0.9 | ~~U~~ | F |
| Barium | 17.4 | U | 17.4 | U | 17.4 | U | 17.4 | U | 17.4 | U | P |
| Beryllium | 0.5 | U | 0.5 | U | 0.5 | U | 0.5 | U | 0.5 | U | P |
| Cadmium | 2.7 | U | 2.7 | U | 2.7 | U | 2.7 | U | 2.7 | U | P |
| Calcium | 37.5 | U | 37.5 | U | 37.5 | U | 40.1 | B | 62.8 | B | P |
| Chromium | 5.5 | U | 5.5 | U | 5.5 | U | 5.5 | U | 5.5 | U | P |
| Cobalt | 8.3 | U | 8.3 | U | 8.3 | U | 8.3 | U | 8.3 | U | P |
| Copper | 11.8 | U | 12.3 | B | 11.8 | U | 18.7 | B | 11.8 | U | P |
| Iron | 25.6 | U | 25.6 | U | 25.6 | U | 25.6 | U | 25.6 | U | P |
| Lead | | | -1.3 | B | | | | | 1.1 | U | F |
| Magnesium | 89.7 | U | 89.7 | U | 89.7 | U | 89.7 | U | 89.7 | U | P |
| Manganese | 2.1 | U | 2.1 | U | 2.1 | U | 2.2 | B | 2.1 | U | P |
| Mercury | | | 0.2 | U | 0.2 | U | 0.2 | U | 0.2 | U | CV |
| Nickel | 8.1 | U | 8.1 | U | 8.1 | U | 8.1 | U | 8.1 | U | P |
| Potassium | 1576.5 | U | 1576.5 | U | 1576.5 | U | 1576.5 | U | 1576.5 | U | P |
| Selenium | 1.3 | U | 1.3 | U | 1.3 | U | | | 1.3 | U | F |
| Silver | 7.9 | U | 7.9 | U | 7.9 | U | 7.9 | U | 9.5 | B | P |
| Sodium | 147.8 | U | 147.8 | U | 147.8 | U | 178.3 | B | 147.8 | U | P |
| Thallium | 1.8 | U | 1.8 | U | 1.8 | U | | | 1.8 | U | F |
| Vanadium | 12.4 | U | 12.4 | U | 12.4 | U | 12.4 | U | 12.4 | U | P |
| Zinc | 15.2 | U | 15.2 | U | 15.2 | U | 15.2 | U | 15.2 | U | P |
| Cyanide | | | | | | | | | 10.0 | U | C |

mf 6-8-88

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3
BLANKS

Lab Name: WESTON - LIONVILLE Contract: 68-W8-0057

Lab Code: WESTON Case No.: 9521 SAS No.: SDG No.: MEX616

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 | | | 154.9 | B | | | | | | | P |
| Antimony | | | 59.8 | U | | | | | | | P |
| Arsenic | | | | | | | | | | | |
| Barium | | | 17.4 | U | | | | | | | P |
| Beryllium | | | 0.5 | U | | | | | | | P |
| Cadmium | | | 2.7 | U | | | | | | | P |
| Calcium | | | 37.5 | U | | | | | | | P |
| Chromium | | | 5.5 | U | | | | | | | P |
| Cobalt | | | 8.3 | U | | | | | | | P |
| Copper | | | 20.1 | B | | | | | | | P |
| Iron | | | 25.6 | U | | | | | | | P |
| Lead | 1.1 | U | 1.1 | U | 1.1 | U | 1.1 | U | 1.1 | U | F |
| Magnesium | | | 89.7 | U | | | | | | | P |
| Manganese | | | 2.2 | B | | | | | | | P |
| Mercury | | | | | | | | | | | |
| Nickel | | | 8.1 | U | | | | | | | P |
| Potassium | | | 1576.5 | U | | | | | | | P |
| Selenium | | | | | | | | | | | |
| Silver | | | 7.9 | U | | | | | | | P |
| Sodium | | | 178.6 | B | | | | | | | P |
| Thallium | | | | | | | | | | | |
| Vanadium | | | 12.4 | U | | | | | | | P |
| Zinc | | | 15.2 | U | | | | | | | P |
| Cyanide | | | | | | | | | | | |
| | | | | | | | | | | | |

U.S. EPA - CLP

5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

MEX616S

Lab Name: WESTON - LIONVILLE Contract: 68-W8-0057

Lab Code: WESTON Case No.: 9521 SAS No.: SDG No.: MEX616

Matrix (soil/water): SOIL Level (low/med): LOW

Concentration Units (ug/L or mg/kg dry weight): MG/KG

| Analyte | Control Limit %R | Spiked Sample Result (SSR) | C | Sample Result (SR) | C | Spike Added (SA) | %R | Q | M |
|---|---|---|---|---|---|---|---|---|---|
| Aluminum | | | | | | | | | NR |
| Antimony | 75-125 | 62.9947 | | 11.8451 | U | 81.9 | 76.9 | | P |
| Arsenic | 75-125 | 2.4850 | B | 0.6573 | B | 8.7 | 21.0 | N | F |
| Barium | 75-125 | 331.6399 | | 21.7292 | B | 327.8 | 94.5 | | P |
| Beryllium | 75-125 | 7.7678 | | 0.0990 | U | 8.2 | 94.7 | | P |
| Cadmium | 75-125 | 7.0140 | | 0.5348 | U | 8.2 | 85.5 | | P |
| Calcium | | | | | | | | | NR |
| Chromium | 75-125 | 33.3492 | | 2.3769 | | 32.8 | 94.4 | | P |
| Cobalt | 75-125 | 82.8076 | | 8.9135 | B | 81.9 | 90.2 | | P |
| Copper | 75-125 | 45.4598 | | 2.3373 | U | 41.0 | 110.9 | | P |
| Iron | | | | | | | | | NR |
| Lead | 75-125 | 6.6702 | | 2.1306 | | 4.4 | 103.2 | | F |
| Magnesium | | | | | | | | | NR |
| Manganese | | 924.7144 | | 1008.4183 | | 81.9 | -102.2 | | P |
| Mercury | 75-125 | 0.8400 | | 0.1 ~~0.2278~~ | U | 1.1 | 76.4 | | CV |
| Nickel | 75-125 | 86.8226 | | 12.8157 | | 81.9 | 90.4 | | P |
| Potassium | | | | | | | | | NR |
| Selenium | 75-125 | 0.2834 | U | 0.2947 | U | 2.2 | 0.0 | N | F |
| Silver | 75-125 | 2.2779 | | 1.5648 | U | 8.2 | 27.8 | N | P |
| Sodium | | | | | | | | | NR |
| Thallium | 75-125 | 10.8773 | | 0.4080 | U | 10.9 | 99.8 | | F |
| Vanadium | 75-125 | 77.8748 | | 4.7143 | B | 81.9 | 89.3 | | P |
| Zinc | 75-125 | 85.5443 | | 10.2803 | | 81.9 | 91.9 | | P |
| Cyanide | | | | | | | | | NR |

Comments: MSC 6-8-88

U.S. EPA - CLP

5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

MEX618S

Lab Name: WESTON - LIONVILLE Contract: 68-W8-0057

Lab Code: WESTON Case No.: 9521 SAS No.: SDG No.: MEX616

Matrix (soil/water): SOIL Level (low/med): LOW

Concentration Units (ug/L or mg/kg dr, 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 | | | | | | | | | NR |
| Arsenic | | | | | | | | | NR |
| Barium | | | | | | | | | NR |
| Beryllium | | | | | | | | | NR |
| Cadmium | | | | | | | | | NR |
| Calcium | | | | | | | | | NR |
| Chromium | | | | | | | | | NR |
| Cobalt | | | | | | | | | NR |
| Copper | | | | | | | | | NR |
| Iron | | | | | | | | | NR |
| Lead | | | | | | | | | NR |
| Magnesium | | | | | | | | | NR |
| Manganese | | | | | | | | | NR |
| Mercury | | | | | | | | | NR |
| Nickel | | | | | | | | | NR |
| Potassium | | | | | | | | | NR |
| Selenium | | | | | | | | | NR |
| Silver | | | | | | | | | NR |
| Sodium | | | | | | | | | NR |
| Thallium | | | | | | | | | NR |
| Vanadium | | | | | | | | | NR |
| Zinc | | | | | | | | | NR |
| Cyanide | 75-125 | 5.2 ~~10.5597~~ | U | 0.6 ~~10.5597~~ | U | 5.3 | 98.1 ~~0.0~~ | N | C |
| | | NSP 6-8-88 | | NSP 6-8-88 | | | NSP 6-8-88 | | |

Comments:

U.S. EPA - CLP

5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

MEX619S

Lab Name: WESTON - LIONVILLE Contract: 68-W8-0057

Lab Code: WESTON Case No.: 9521 SAS No.: SDG No.: MEX616

Matrix (soil/water): WATER Level (low/med): LOW

Concentration Units (ug/L or mg/kg dry weight): UG/L

| Analyte | Control Limit %R | Spiked Sample Result (SSR) | C | Sample Result (SR) | C | Spike Added (SA) | %R | Q | M |
|---|---|---|---|---|---|---|---|---|---|
| Aluminum | 75-125 | 2220.0000 | | 210.2000 | | 2000.0 | 100.5 | | P |
| Antimony | 75-125 | 529.9000 | | 59.8000 | U | 500.0 | 106.0 | | P |
| Arsenic | 75-125 | 35.6000 | | 0.9000 | U | 40.0 | 89.0 | | F |
| Barium | 75-125 | 2015.5000 | | 26.7000 | B | 2000.0 | 99.4 | | P |
| Beryllium | 75-125 | 51.2000 | | 0.5000 | U | 50.0 | 102.4 | | P |
| Cadmium | 75-125 | 49.6000 | | 2.7000 | U | 50.0 | 99.2 | | P |
| Calcium | | | | | | | | | NR |
| Chromium | 75-125 | 202.1000 | | 5.5000 | U | 200.0 | 101.0 | | P |
| Cobalt | 75-125 | 491.1000 | | 8.3000 | U | 500.0 | 98.2 | | P |
| Copper | 75-125 | 257.3000 | | 12.8000 | B | 250.0 | 97.8 | | P |
| Iron | 75-125 | 1074.0000 | | 66.1000 | B | 1000.0 | 100.8 | | P |
| Lead | 75-125 | 17.6000 | | 1.1000 | U | 20.0 | 88.0 | | F |
| Magnesium | | | | | | | | | NR |
| Manganese | 75-125 | 520.3000 | | 24.4000 | | 500.0 | 99.2 | | P |
| Mercury | | | | | | | | | NR |
| Nickel | 75-125 | 499.9000 | | 8.1000 | U | 500.0 | 100.0 | | P |
| Potassium | | | | | | | | | NR |
| Selenium | 75-125 | 7.5000 | | 1.3000 | U | 10.0 | 75.0 | | F |
| Silver | 75-125 | 19.7000 | | 7.9000 | U | 50.0 | 39.4 | N | P |
| Sodium | | | | | | | | | NR |
| Thallium | 75-125 | 45.0000 | | 1.8000 | U | 50.0 | 90.0 | | F |
| Vanadium | 75-125 | 488.5000 | | 12.4000 | U | 500.0 | 97.7 | | P |
| Zinc | 75-125 | 506.0000 | | 29.6000 | | 500.0 | 95.3 | | P |
| Cyanide | | | | | | | | | NR |

Comments:

U.S. EPA - CLP

5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

MEX624S

Lab Name: WESTON - LIONVILLE Contract: 68-W8-0057

Lab Code: WESTON Case No.: 9521 SAS No.: SDG No.: MEX616

Matrix (soil/water): WATER Level (low/med.): LOW

Concentration Units (ug/L or mg/kg dry weight): UG/L

| Analyte | Control Limit %R | Spiked Sample Result (SSR) | C | Sample Result (SR) | C | Spike Added (SA) | %R | Q | M |
|---|---|---|---|---|---|---|---|---|---|
| Aluminum | | | | | | | | | NR |
| Antimony | | | | | | | | | NR |
| Arsenic | | | | | | | | | NR |
| Barium | | | | | | | | | NR |
| Beryllium | | | | | | | | | NR |
| Cadmium | | | | | | | | | NR |
| Calcium | | | | | | | | | NR |
| Chromium | | | | | | | | | NR |
| Cobalt | | | | | | | | | NR |
| Copper | | | | | | | | | NR |
| Iron | | | | | | | | | NR |
| Lead | | | | | | | | | NR |
| Magnesium | | | | | | | | | NR |
| Manganese | | | | | | | | | NR |
| Mercury | 75-125 | 0.8380 | | 0.2000 | U | 1.0 | 83.8 | | CV |
| Nickel | | | | | | | | | NR |
| Potassium | | | | | | | | | NR |
| Selenium | | | | | | | | | NR |
| Silver | | | | | | | | | NR |
| Sodium | | | | | | | | | NR |
| Thallium | | | | | | | | | NR |
| Vanadium | | | | | | | | | NR |
| Zinc | | | | | | | | | NR |
| Cyanide | 75-125 | 54.0000 | | 10.0000 | U | 55.6 | 97.1 | | C |

Comments:

U.S. EPA - CLP

5B

POST DIGEST SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

Lab Name: WESTON - LIONVILLE Contract: 68-W8-0057

Lab Code: WESTON Case No.: 9521 SAS No.: SDG No.: MEX616

Matrix (soil/water): Level (low/med):

Concentration Units: ug/L

| Analyte | Control Limit %R | Spiked Sample Result (SSR) | C | Sample Result (SR) | C | Spike Added (SA) | %R | Q | M |
|---|---|---|---|---|---|---|---|---|---|
| Aluminum | | | | | | | | | NR |
| Antimony | | | | | | | | | NR |
| Arsenic | | | | | | | | | NR |
| Barium | | | | | | | | | NR |
| Beryllium | | | | | | | | | NR |
| Cadmium | | | | | | | | | NR |
| Calcium | | | | | | | | | NR |
| Chromium | | | | | | | | | NR |
| Cobalt | | | | | | | | | NR |
| Copper | | | | | | | | | NR |
| Iron | | | | | | | | | NR |
| Lead | | | | | | | | | NR |
| Magnesium | | | | | | | | | NR |
| Manganese | | | | | | | | | NR |
| Mercury | | | | | | | | | NR |
| Nickel | | | | | | | | | NR |
| Potassium | | | | | | | | | NR |
| Selenium | | | | | | | | | NR |
| Silver | | | | | | | | | NR |
| Sodium | | | | | | | | | NR |
| Thallium | | | | | | | | | NR |
| Vanadium | | | | | | | | | NR |
| Zinc | | | | | | | | | NR |
| Cyanide | | | | | | | | | NR |
| | | | | | | | | | |

Comments:

U.S. EPA - CLP

6
DUPLICATES

EPA SAMPLE NO.

MEX616D

Lab Name: WESTON - LIONVILLE Contract: 68-W8-0057

Lab Code: WESTON Case No.: 9521 SAS No.: SDG No.: MEX616

Matrix (soil/water): SOIL Level (low/med): LOW

% Solids for Sample: 87.8 % Solids for Duplicate: 87.8

Concentration Units (ug/L or mg/kg dry weight): MG/KG

| Analyte | Control Limit | Sample (S) | C | Duplicate (D) | C | RPD | Q | M |
|---|---|---|---|---|---|---|---|---|
| Aluminum | | 886.2038 | | 932.6869 | | 5.1 | | P |
| Antimony | 11.9 | 12.1620 | U | 12.4971 | U | | | P |
| Arsenic | 2.3 | 0.6573 | B | 0.6048 | B | 8.3 | | F |
| Barium | 39.6 | 21.7292 | B | 22.7999 | B | 4.8 | | P |
| Beryllium | 1.0 | 0.0990 | U | 0.1043 | U | | | P |
| Cadmium | 1.0 | 0.5348 | U | 0.5643 | U | | | P |
| Calcium | 990.4 | 3014.7569 | | 3149.3595 | | 4.4 | | P |
| Chromium | 2.0 | 2.3769 | | 2.4451 | | 2.8 | | P |
| Cobalt | 9.9 | 8.9135 | B | 8.9026 | B | 0.1 | | P |
| Copper | 5.0 | 2.3373 | U | 2.4660 | U | | | P |
| Iron | | 14144.7950 | | 14827.2760 | | 4.7 | | P |
| Lead | 1.1 | 2.1306 | | 2.3742 | | 10.8 | | F |
| Magnesium | 990.4 | 619.1938 | B | 650.3521 | B | 4.9 | | P |
| Manganese | | 1008.4183 | | 1057.4492 | | 4.7 | | P |
| Mercury | 0.1 | 0.1 ~~0.2278~~ | U | 0.1 ~~0.2278~~ | U | | | CV |
| Nickel | 7.9 | 12.8157 | | 12.4762 | | 2.7 | | P |
| Potassium | 990.4 | 312.2710 | U | 329.4602 | U | | | P |
| Selenium | 1.1 | 0.2947 | U | 0.2912 | U | | | F |
| Silver | 2.0 | 1.5648 | U | 1.6510 | U | | | P |
| Sodium | 990.4 | 29.2760 | U | 30.8875 | U | | | P |
| Thallium | 2.3 | 0.4080 | U | 0.4032 | U | | | F |
| Vanadium | 9.9 | 4.7143 | B | 4.4722 | B | 5.3 | | P |
| Zinc | 4.0 | 10.2803 | | 10.8253 | | 5.2 | | P |
| Cyanide | | | | | | | | C |

nsp 6-8-88

U.S. EPA - CLP

6
DUPLICATES

EPA SAMPLE NO.

MEX618D

Lab Name: WESTON - LIONVILLE Contract: 68-W8-0057

Lab Code: WESTON Case No.: 9521 SAS No.: SDG No.: MEX616

Matrix (soil/water): SOIL Level (low/med): LOW

% Solids for Sample: 94.7 % Solids for Duplicate: 94.7

Concentration Units (ug/L or mg/kg dry weight): MG/KG

| Analyte | Control Limit | Sample (S) | C | Duplicate (D) | C | RPD | Q | M |
|---|---|---|---|---|---|---|---|---|
| Aluminum | | | | | | | | P |
| Antimony | | | | | | | | P |
| Arsenic | | | | | | | | F |
| Barium | | | | | | | | P |
| Beryllium | | | | | | | | P |
| Cadmium | | | | | | | | P |
| Calcium | | | | | | | | P |
| Chromium | | | | | | | | P |
| Cobalt | | | | | | | | P |
| Copper | | | | | | | | P |
| Iron | | | | | | | | P |
| Lead | | | | | | | | F |
| Magnesium | | | | | | | | P |
| Manganese | | | | | | | | P |
| Mercury | | | | | | | | CV |
| Nickel | | | | | | | | P |
| Potassium | | | | | | | | P |
| Selenium | | | | | | | | F |
| Silver | | | | | | | | P |
| Sodium | | | | | | | | P |
| Thallium | | | | | | | | F |
| Vanadium | | | | | | | | P |
| Zinc | | | | | | | | P |
| Cyanide | 0.5 | 0.5 ~~10.5597~~ | U | 0.5 ~~10.5597~~ | U | | | C |

U.S. EPA - CLP

6
DUPLICATES

EPA SAMPLE NO.

MEX619D

Lab Name: WESTON - LIONVILLE Contract: 68-W8-0057

Lab Code: WESTON Case No.: 9521 SAS No.: SDG No.: MEX616

Matrix (soil/water): WATER Level (low/med): LOW

% Solids for Sample: 0.0 % Solids for Duplicate:

Concentration Units (ug/L or mg/kg dry weight): UG/L

| Analyte | Control Limit | Sample (S) | C | Duplicate (D) | C | RPD | Q | M |
|---|---|---|---|---|---|---|---|---|
| Aluminum | 200.0 | 210.2000 | | 189.2000 | B | 10.5 | | P |
| Antimony | 60.0 | 59.8000 | U | 59.8000 | U | | | P |
| Arsenic | 10.0 | 0.9000 | U | 0.9000 | U | | | F |
| Barium | 200.0 | 26.7000 | B | 26.7000 | B | 0.0 | | P |
| Beryllium | 5.0 | 0.5000 | U | 0.5000 | U | | | P |
| Cadmium | 5.0 | 2.7000 | U | 2.7000 | U | | | P |
| Calcium | | 57994.1000 | | 58429.1000 | | 0.7 | | P |
| Chromium | 10.0 | 5.5000 | U | 5.5000 | U | | | P |
| Cobalt | 50.0 | 8.3000 | U | 8.3000 | U | | | P |
| Copper | 25.0 | 12.8000 | B | 12.1000 | B | 5.6 | | P |
| Iron | 100.0 | 66.1000 | B | 130.4000 | | 65.4 | | P |
| Lead | 5.0 | 1.1000 | U | 1.1000 | U | | | F |
| Magnesium | | 34438.0000 | | 34899.8000 | | 1.3 | | P |
| Manganese | 15.0 | 24.4000 | | 22.9000 | | 6.3 | | P |
| Mercury | | | | | | | | CV |
| Nickel | 40.0 | 8.1000 | U | 8.1000 | U | | | P |
| Potassium | 5000.0 | 2370.9000 | B | 2421.1000 | B | 2.1 | | P |
| Selenium | 5.0 | 1.3000 | U | 1.3000 | U | | | F |
| Silver | 10.0 | 7.9000 | U | 7.9000 | U | | | P |
| Sodium | 5000.0 | 7910.6000 | | 8523.6000 | | 7.5 | | P |
| Thallium | 10.0 | 1.8000 | U | 1.8000 | U | | | F |
| Vanadium | 50.0 | 12.4000 | U | 12.4000 | U | | | P |
| Zinc | 20.0 | 29.6000 | | 15.2000 | U | 200.0 | * | P |
| Cyanide | 10.0 | 10.0000 | U | 10.0000 | U | | | C |

# APPENDIX F

## WELL LOGS OF THE AREA OF THE SITE

# McCarthy Well Company

MAIN OFFICES, SHOPS, YARDS & WAREHOUSES — 2700 EAST 80TH STREET, MINNEAPOLIS, MINN. 55420

OUR NEW LOCATION - ONE BLOCK EAST OF METROPOLITAN STADIUM IN BLOOMINGTON

WATER WELLS - DEEP WELL TURBINE & SUBMERSIBLE PUMPS - EMERGENCY WELL & PUMP SERVICE
TEST DRILLING - FOUNDATION CAISSON DRILLING - WATER WORKS EQUIPMENT & SUPPLIES

MINNEAPOLIS, MINNESOTA
854-5323

ST. PAUL, MINNESOTA
854-5334


City of Keewatin
Keewatin, Minnesota 65763

Date Started: 11/29/51
Date Completed: 4/25/52

| Formation | | Thickness | Depth |
|---|---|---|---|
| Taken from | Clay | 40 | 40 |
| blue print | Quicksand | 10 | 50 |
| supplied by | Clay | 30 | 80 |
| A. Budreau | Quicksand | 10 | 90 |
| Water Dept. | Clay | 90 | 180 |
| | Slate | 40 | 220 |
| Slate, blue clay and taconite | | 4 | 224 |
| Taconite-Soft Slate, some water | | 31 | 255 |
| Hard Taconite | | 10 | 265 |
| Taconite and Brown Clay | | 13 | 278 |
| Taconite and Paint Rock | | 36 | 314 |
| Paint Rock | | 8 | 322 |
| Hard Taconite | | 30 | 352 |
| Taconite Softer | | 5 | 357 |
| Hard Taconite | | 11 | 368 |
| Taconite softer some water | | 11 | 379 (+) |
| Hard Taconite | | →69 | 448 |
| Taconite and Brown Clay | | 22 | 470 |
| Brown Clay and Paint Rock | | 25 | 495 |
| Sand and Ore | | 111 | 606 |

M.W. #1


SINCE 1860

COMPLETE MACHINE SHOP FACILITIES - PARTS AND SERVICE, FOR YOUR PUMPING EQUIPMENT

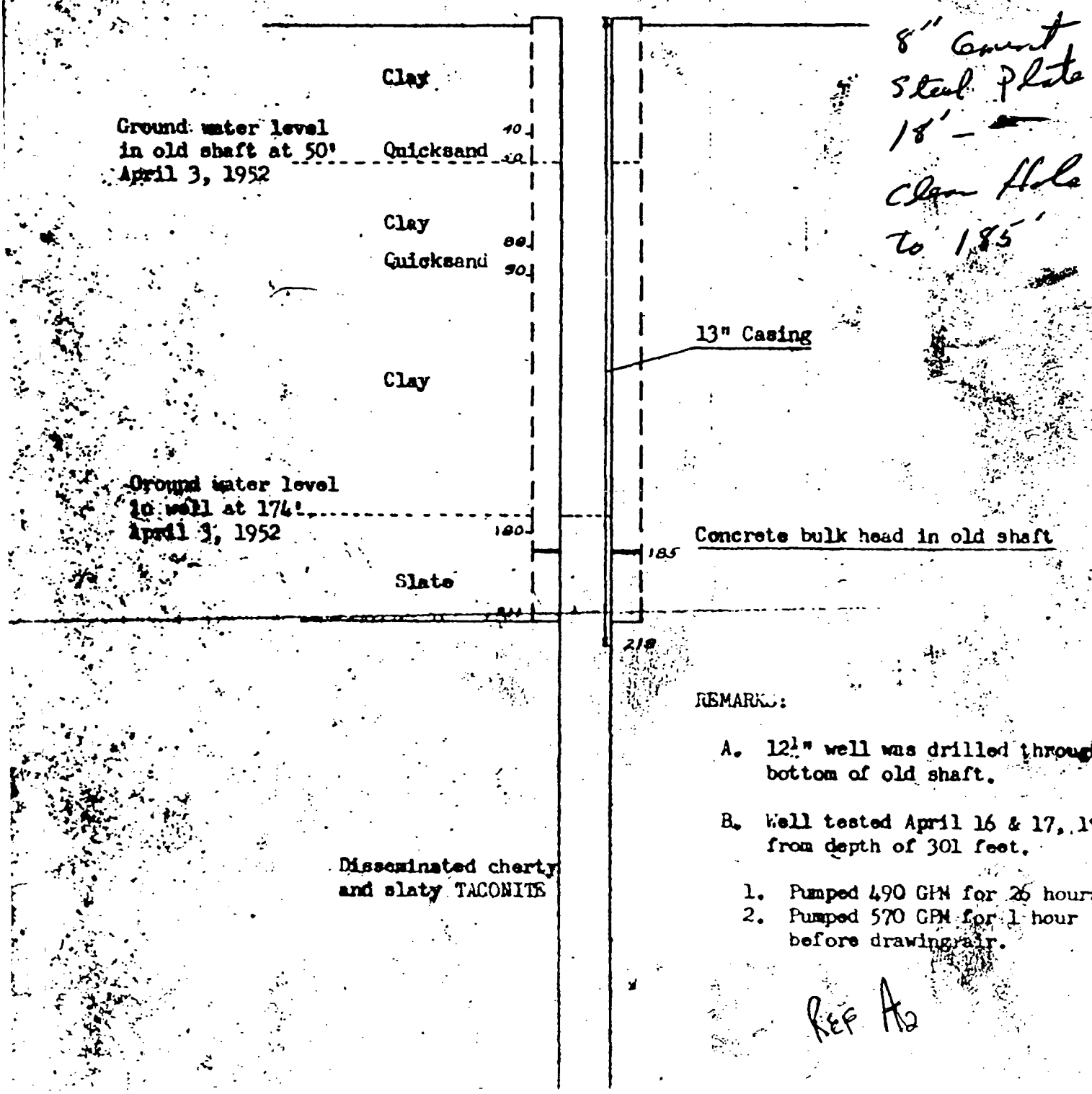
*Nation's Oldest - Northwest's Largest Water Producers*

LOG AND DESCRIPTION OF WELL

LOCATION: Keewatin 1st Ave. & 1st St.

DATE COMPLETED: April 1952 (by McCarthy Well Co., St. Paul)

Elev. of bulkhead on top of old shaft: 1473




REMARKS:

A. 12½" well was drilled through bottom of old shaft.

B. Well tested April 16 & 17, 1952 from depth of 301 feet.

1. Pumped 490 GPM for 26 hours.
2. Pumped 570 GPM for 1 hour before drawing air.

Ref A2

Clay

Ground water level in well at 174'
April 3, 1952

100

185

Concrete bulk head in old shaft

Slate

219

REMARKS:

A. 12¼" well was drilled through bottom of old shaft.

B. Well tested April 16 & 17, 1952 from depth of 301 feet.

1. Pumped 490 GPM for 26 hours.
2. Pumped 570 GPM for 1 hour before drawing air.

Disseminated cherty and slaty TACONITE

411

PAINT ROCK

Porous disseminated TACONITE with interbedded hard cherty beds & soft sandy beds.

6 Foot length of 12¼ bit at bottom of hole.

400

Ref. A2

KEEWATIN WELL #2
(Near Carls #2 Mine - drilled in 1951)

| | |
|---|---|
| 0-6 | Blue clay |
| 6-10 | Blue clay & big stones |
| 10-24 | Red clay & big stones, sand & boulders |
| 24-29 | Blue clay & big boulders |
| 29-58 | Blue clay |
| 58-73 | Sandy clay - some gravel |
| 73-82 | Muddy sand & big stones |
| 82-90 | Hard blue sandy clay |
| 90-115 | Hard blue clay |
| 115-124 | Slate |
| 124-130 | Decomposed taconite |
| 130-133 | Solid taconite |
| 133-143 | Decomposed taconite |
| 143-165 | Painty decomposed taconite |
| 165-170 | Decomposed taconite |
| 170-201 | Painty decomposed taconite |
| 201-205 | Decomposed taconite |
| 205-208 | Very hard taconite |
| 208-212 | Decomposed painty cuttings |
| 212-220 | Sandy decomposed taconite |
| 220-224 | Solid taconite, little slate |
| 224-230 | Decomposed taconite & little slate |
| 230-345 | Slaty taconite |
| 345-350 | Decomposed taconite |
| 350-355 | Decomposed taconite & paint rock |
| 355-365 | Paint rock |
| 365-369 | Sand & ore (water) |
| 369-374 | Cherty taconite |

Most water comes from 355-370

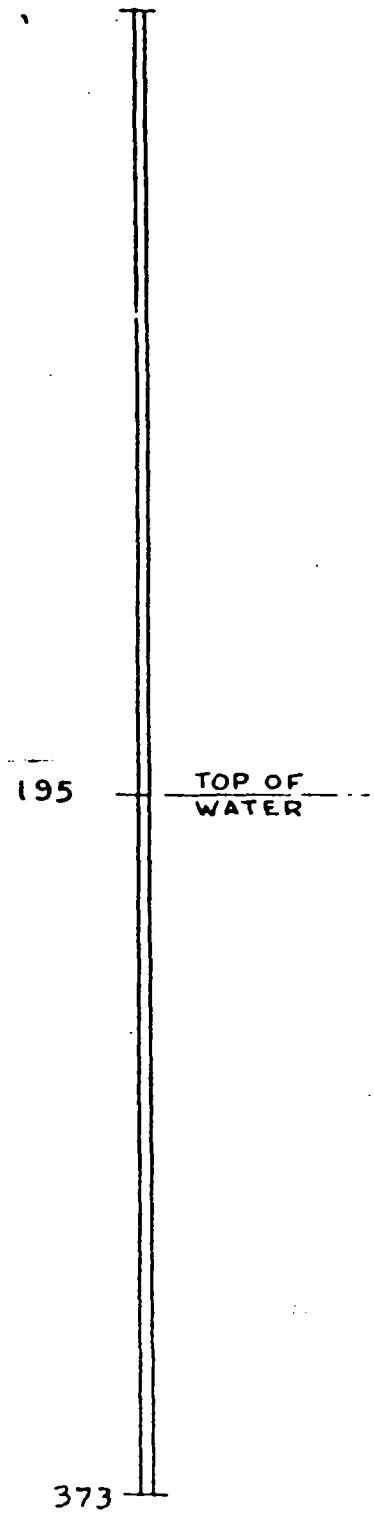
M.W. #2

# KEEWATIN VILLAGE WELL
(ADJACENT TO CARLZ NO.2 MINE)

COORDINATES _____

ELEVATION _____

DRILLED BY MC CARTHY WELL COMPANY FINISHED SEPT 11, 1951.
CASING: 11 INCH
DRAWDOWN 270 G.P.M. MAXIMUM BEFORE DRAWDOWN.
FIRST HEAVY WATER SEAM AT 370'




REF. B3

1457 (USGS)

Blue & Red Clay

Sand & Boulders

58

Sand Gravel & Boulders

82

Blue Clay

115

Virginia Slate

124

10" Casing to 373'
(Lower Portion Slotted)

Disseminated Cherty & Slaty Taconite

355

Paint Rock

365

373

Drilled in 1951

Porous Disseminated Cherty Taconite with Interbedded Hard Cherty Beds & Soft Sandy Beds

Proposed May 1958

Ref. B.

KEEWATIN WELL #2
(Near Carlz #2 Mine)

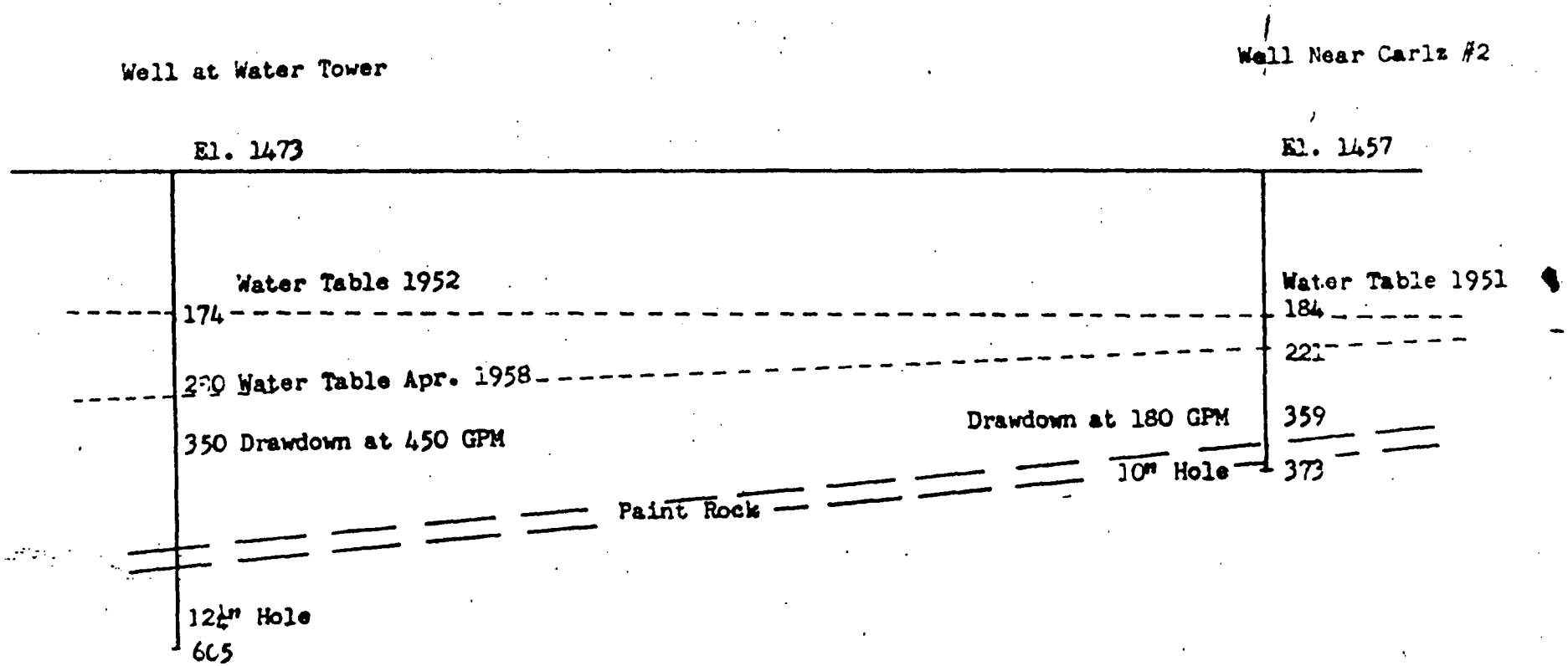
473

Scale 1"=50'

April 23, 19[illegible]

SECTION A – A

Looking West




KEEWATIN WATER WELLS

Scale
Horiz. 1"=300'
Vert. 1"=200'

U.S.G.S. Datum

April, 1958

## Municipal Water Supply Comparison
## In The Nashwauk-Keewatin Area

| | Keewatin Wells | | Nashwauk Area Wells | |
|---|---|---|---|---|
| | #1 (At Tank) | #2 (At Carlz) | At Cooley | At Nashwauk |
| **Well Data** | | | | |
| Well Depth | 605' | 373' | 537' | 540' |
| Bottom P. Rock to Bottom of well | 104' | 8' | 99' | 195' |
| Old water level from collar | 174' (1952) | 184' (1951) | 72' (1932) | 127' (1949) |
| Recent water level from collar | 230' (1958) | 221' (1958) | 215' (1956) | Unknown |
| Rough average annual water level drop | 17.7' | 5.3' | 6.0' | - |
| Top protective casing | 219' (13") | 374' (10") | 162' (12") | 148' (16") |
| Lower casing | None | None | None | 52' (10") |
| Uncased hole | 386' | None | 375' | 340' |
| **Consumption Data** | | | | |
| Gallons/day in 1951 | - 106,000 - | | Unknown | 150,000 |
| Gallons/day in 1958 | - 176,000 - | | 55,000 | 200,000 |
| % increase/year | 12% | | - | 8% |
| Water storage | 180,000 | | 40,000 | 100,000 |
| Maximum gallon used in 4 hours | 70,000 | | 100,000 | 100,000 |
| **Safety Data** | | | | |
| Insurance Requirements | - 500 g.p.m. 60# - | | - 500 g.p.m. at 60# - | |
| State Fire Marshall Requirements | - | | - | |
| **Pumping Data** | | | | |
| A) Original tests in g.p.m. | 490 (1951) | 270 (1951) | None Reqd. | 650 (1949) |
| No. of hours at test gallonage | 26 (1951) | - | None Reqd. | 24 (1949) |
| B) Previous pump settings in g.p.m. | 490 (1952) | 270 (1951) | 125 (1932) | 450 (1949) |
| Drawdown | 55 (1952) | - | None | Minor |
| C) Present pump setting in g.p.m. | 450 (1958) | 180 (1958) | 330 (1958) | 440 (1958) |
| Drawdown | 70 (1958) | 138 (1958) | 84' (1958) | Unknown |
| Water Column left at drawdown | 255' (1958) | 14' | 238' | 340' (+) |
| **Well Cleaning Data** | | | | |
| Last date inspected ore cleaned | 1952 | 1958 | 1956 | 1949 |
| Amount debris found | None | Very little | 64' | None |
| **Adjacent Pits** (As Of January 1, 1958) | | | | |
| Deepest Pit: ½ mile radius | Carlz #2 | Hunt | Harrison | Hawkins |
| Deepest Pit: 1 mile radius | Hunt | Hunt | Harrison | Hawkins |
| USGS elev. at well bottom | 873 | 1084 | 902 | 912 |
| USGS: Pit bottom ½ mile radius | 1250 | 1191 | 1216 | 1180 |
| USGS: Pit bottom 1 mile radius | 1191 | 1191 | 1216 | 1180 |

April, 1958

1. LOCATION OF WELL

# WATER WELL RECORD

Minnesota Statutes 156A 01-09

for Water Sample

39412

County Name: ST Louis

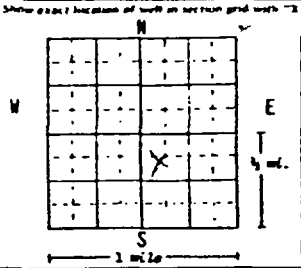
| Township Name | Township Number | Range Number | Section No. | Fraction |
|---|---|---|---|---|
| | 57 N or S | 21 E or W | 21 | N 1/4 [illegible] |

Distance and Direction from Road Intersections or Street Address and City of Well Location

Show exact location of well in section grid with "X"

Sketch map of well location.

N / W / E / S — 1 mile — ½ mi.



Addition Name

Block Number

Lot Number

WELL LOG #1

| 2. FORMATION LOG | COLOR | HARDNESS OF FORMATION | FROM | TO |
|---|---|---|---|---|
| [illegible] | [illegible] | [illegible] | | [illegible] |
| [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |

Use a second sheet, if needed

3. PROPERTY OWNER'S NAME

Address: JOHN DE[illegible]LAR, BOX 302, KELLY LAKE, MN [illegible]

4. WELL DEPTH (completed): 59 ft

Date of Completion: 8-17-77

5. 1☐ Cable tool 4☐ Reverse 7☐ Driven 10☐ Dug
2☐ Hollow rod 5☐ Air 8☐ Bored 11☐
3☒ Rotary 6☐ Jetted 9☐ Power Auger

6. USE
1☒ Domestic 4☐ Public Supply 7☐ Industry
2☐ Irrigation 5☐ Municipal 8☐ Commercial
3☐ Test Well 6☐ Air Conditioning 9☐

7. CASING
1☒ Black 4☒ Threaded
2☐ Galv 5☐ Welded
3☐ 6☐

HEIGHT: Above/Below
Surface 1 ft.
Drive Shoe? Yes ___ No X

5 in. to 54 ft. Weight 14.81 lbs./ft.
___ in. to ___ ft. Weight ___ lbs./ft.
___ in. to ___ ft. Weight ___ lbs./ft.

HOLE DIAM
___ in. to ___ ft.
___ in. to ___ ft.
___ in. to ___ ft.

8. SCREEN
Make JOHNSON
Type STAINLESS STEEL Dia. [illegible]
Slot/Gauze .018 Length 5'
Set between 54 ft. and 59 ft.
___ ft. and ___ ft.
___ ft. and ___ ft.

Or open hole from ___ ft. to ___ ft.

FITTINGS:

9. STATIC WATER LEVEL
7 ft. ☒ below land surface ☐ above Date Measured ___

10. PUMPING LEVEL (below land surface)
4 ft. after 7 hrs. pumping [illegible] g.p.m.
___ ft. after ___ hrs. pumping ___ g.p.m.

11. WELL HEAD COMPLETION
1☐ Pitless adapter 2☐ Basement offset 3☒ At least 12" above grade

12. Well grouted?
☐ Yes ☒ No Cu. Yds. ___
1☐ Neat Cement 2☐ Bentonite 3☐
Depth: from ___ ft. to ___ ft.
from ___ ft. to ___ ft.

13. Nearest sources of possible contamination
[illegible] feet E direction [illegible] type
Well disinfected upon completion? Yes ☒ No ☐

14. PUMP
Date installed ___
☒ Not installed
Manufacturer's Name ___
Model Number ___ HP ___ Volts ___
Length of drop pipe ___ ft. capacity ___ g.p.m.
Material of drop pipe ___
Type: 1☐ Submersible 3☐ L. S. Turbine 5☐ Reciprocating
2☐ Jet 4☐ Centrifugal 6☐

15. REMARKS, ELEVATION, SOURCE OF DATA, etc.

16. WATER WELL CONTRACTOR'S CERTIFICATION
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NORTH STAR DRILLING INC 4800
Licensee Business Name Licence No.

Address BOX [illegible] ISLE

Signed [signature] Authorized Representative Date [illegible]

WALT BEHNING Name of Driller Date 8-17-77

5/74 30M
7/76 30M

MINN. GEOLOGICAL SURVEY COPY

Minnesota Statutes 156A.01-.06

For Item Sample

14JU1U

| Township Name | Township Number | Range Number | Section No. | Fraction | |
|---|---|---|---|---|---|
| STUART | 47 N or S | 21 E or W | 23 | | N. 1/2 |

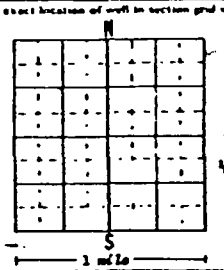
Distance and Direction from Road Intersection or Street Address and City of Well Location

3. PROPERTY OWNER'S NAME: PETER HYLE

Address: 11 1/2 E [illegible]

Show exact location of well in section grid with "X."

Sketch map of well location




Addition Name

Block Number

Lot Number

# WELL LOG #2

4. WELL DEPTH (completed): 69 ft. Date of Completion: 1/1/44

5. 1☐ Cable tool 4☐ Reverse 7☐ Driven 10☐ Dug
2☐ Hollow rod 5☐ Air 8☐ Bored 11☐
3☒ Rotary 6☐ Jetted 9☐ Power Auger

6. USE
1☒ Domestic 4☐ Public Supply 7☐ Industry
2☐ Irrigation 5☐ Municipal 8☐ Commercial
3☐ Test Well 6☐ Air Conditioning 9☐

7. CASING — HEIGHT: Above/Below
1☒ Black 4☒ Threaded
2☐ Galv. 5☐ Welded
3☐ 6☐
Surface 1 ft.
Drive Shoe? Yes ___ No ☒
in. to 61 ft. Weight 14.14 lbs./ft.
in. to ___ ft. Weight ___ lbs./ft.
in. to ___ ft. Weight ___ lbs./ft.

HOLE DIAM
in. to ___ ft.
in. to ___ ft.
in. to ___ ft.

8. SCREEN
Make: JOHNSON
Type: STAINLESS STEEL Dia.: [illegible]
Slot/Gauge: .012 Length: 8'
Set between 61 ft. and 69 ft.
ft. and ___ ft.
ft. and ___ ft.
FITTINGS:
Or open hole from ___ ft. to ___ ft.

9. STATIC WATER LEVEL
1 ft. ☒ below land surface ☐ above Date Measured 1/1/44

10. PUMPING LEVEL (below land surface)
45 ft. after 1 hrs. pumping 10 g.p.m.
ft. after ___ hrs. pumping ___ g.p.m.

11. WELL HEAD COMPLETION
1☐ Pitless adapter 2☐ Basement offset 3☒ At least 12" above grade

12. Well grouted?
☐ Yes ☒ No Cu. Yds. ___
1☐ Neat Cement 2☐ Bentonite 3☐
Depth: from ___ ft. to ___ ft.
from ___ ft. to ___ ft.

13. Nearest source of possible contamination
107 feet E direction Septic type
Well disinfected upon completion? Yes ☒ No ☐

14. PUMP
Date Installed ___
☒ Not Installed
Manufacturer's Name ___
Model Number ___ HP ___ Volts ___
Length of drop pipe ___ ft. Capacity ___ g.p.m.
Material of drop pipe ___
Type: 1☐ Submersible 3☐ L.S. Turbine 5☐ Reciprocating
2☐ Jet 4☐ Centrifugal 6☐

16. WATER WELL CONTRACTOR'S CERTIFICATION
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NORTH STAR DRILLING INC 4[illegible]
Licensed Business License No.

Address: BOX [illegible] LAKE, MN

Signed: [illegible] Authorized Representative Date: 11/5/71

WALT BEHNING Name of Driller Date: 1/1/71

5/74 30M
7/76 30M

2. FORMATION LOG

| FORMATION LOG | COLOR | HARDNESS OF FORMATION | FROM | TO |
|---|---|---|---|---|
| CLAY & ROCKS | BROWN | [illegible] | 0 | 42 |
| SAND & GRAVEL | GRAY | [illegible] | 42 | 69 |

Use a second sheet if needed.

15. REMARKS, ELEVATION, SOURCE OF DATA, etc.

Ref. A

MINN. GEOLOGICAL SURVEY COPY

WATER WELL RECORD
Minnesota Statutes 1974 [illegible]

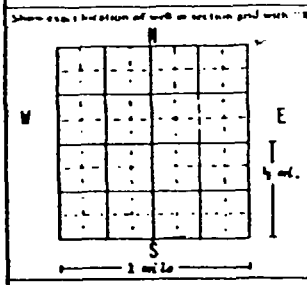
189475

St. Louis

| Township Name | Township Number | Range Number | Section No. | Fraction |
|---|---|---|---|---|
| | 57 N or S | 21 E or W | 28 | SW¼ NW¼ |

Distance and Direction from Road Intersections or Street Address and City of Well Location

Show exact location of well in section grid with "X"




Addition Name

Block Number

Lot Number

Sketch map of well location

E. 200' of W. 695' of that part of Sw¼ of N.W.½ lying N. of the state

WELL LOG #3

| 2. FORMATION LOG | COLOR | HARDNESS OF FORMATION | FROM | TO |
|---|---|---|---|---|
| Sand & Gravel & Boulders | Brn. | | 0 | 17 |
| Hardpan & Boulders | Grey | | 17 | 65 |
| Sand & Gravel | Brown | | 65 | 73 |
| 10-15 GPM | | | | |

Use a second sheet, if needed

3. PROPERTY OWNER'S NAME

Address: Don Sorenson
R.R. Box 52
Hibbing, Minn. 55746

4. WELL DEPTH (completed): 73 ft.

Date of Completion: 6-22-81

5. 1☐ Cable tool 4☐ Reverse 7☐ Driven 10☐ Dug
2☐ Hollow rod 5☒ Air 8☐ Bored 11☐
3☒ Rotary 6☐ Jetted 9☐ Power Auger

6. USE
1☒ Domestic 4☐ Public Supply 7☐ Industry
2☐ Irrigation 5☐ Municipal 8☐ Commercial
3☐ Test Well 6☐ Air Conditioning 9☐

7. CASING
1☒ Black 4☒ Threaded
2☐ Galv 5☒ Welded
3☐ Plastic 6☐

HEIGHT: Above/Below
Surface 1 ft.
Drive Shoe? Yes☒ No

6 in. to 73 ft. Weight 20 lbs./ft.
in. to ft. Weight lbs./ft.
in. to ft. Weight lbs./ft.

HOLE DIAM
in. to ft.
in. to ft.
in. to ft.

8. SCREEN
Make
Or open hole from ft. to ft.
Type Dia.
Slot/Gauze Length
FITTINGS
Set between ft. and ft.
ft. and ft.
ft. and ft.

9. STATIC WATER LEVEL
12 ft. ☒ below land surface ☐ above Date Measured

10. PUMPING LEVEL (below land surface)
ft. after hrs. pumping g.p.m.
ft. after hrs. pumping g.p.m.

11. WELL HEAD COMPLETION
1☐ Pitless adapter 2☐ Basement offset 3☐ At least 12" above grade

12. Well grouted?
☐ Yes ☒ No Cu. Yds.
1☐ Neat Cement 2☐ Bentonite 3☐
Depth: from ft. to ft.
from ft. to ft.

13. Nearest sources of possible contamination
feet direction type
Well disinfected upon completion? Yes☒ No☐

14. PUMP
Date Installed
☐ Not Installed
Manufacturer's Name
Model Number HP Volts
Length of drop pipe ft. capacity g.p.m.
Material of drop pipe
Type: 1☐ Submersible 3☐ L. S. Turbine 5☐ Reciprocating
2☐ Jet 4☐ Centrifugal 6☐

15. REMARKS, ALTERATIONS, SOURCE OF DATA, etc.

RECEIVED
JUN 30 1981
Minn. Dept. of Health
Div. of Env. Health

Ref. B.

16. WATER WELL CONTRACTOR'S CERTIFICATION
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

PETERSEN WELL DRILLING, INC. 69183
Licensee Business Name License No.

Address Parkville, Mn. 55773

Signed [signature] Date 6-23-81
Authorized Representative

Dave Magnuson Date 6-22-81
Name of Driller

MINN. GEOLOGICAL SURVEY COPY

189475

5/74 30M
7/76 30M
7/78 30M