report.1989-12-28.Soil_invest

ROTH ROTH

**BLASLAND & BOUCK ENGINEERS, P.C.**
*ENGINEERS & GEOSCIENTISTS*
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December 28, 1989

Mr. Lawrence Blue
Environmental Analyst
Nixon, Hargrave, Devans & Doyle
1300 Lincoln First Tower
P.O. Box 1051
Rochester, New York 14603

Re: Roth Bros. Smelting Corp.

File: 506.01 #2

Dear Mr. Blue:

On October 19, 1989, Blasland & Bouck Engineers, P.C. (Blasland & Bouck) conducted a soil investigation at the Roth Bros. Smelting Corp. in Syracuse, New York (Figure 1). This investigation was conducted in response to issues raised during an environmental audit performed by Environmental Risk Limited, as a requirement for Pollution Liability Insurance. The objective of the investigation was to determine if soils in selected areas at the site have been impacted by plant activities.

Scrap Metal Area

Eight soil borings (B-1 through B-8) were located in an unpaved area east of Plant No. 1 (Figure 2) to determine if soil has been impacted by the storage of oily scrap metal. Soil samples were obtained at each boring from 0 to 4 feet below grade. Two-foot long, three-inch diameter split-spoon samples were driven in two-foot increments using a 140-pound hammer. An on-site geologist obtained two-foot composite soil samples for possible laboratory analysis immediately after the sampler was opened. A two-foot composite soil sample was also placed inside a half-pint glass jar for evaluation of the sample for organic vapors and the jar was sealed using aluminum foil.

Visual examination of each soil sample by the on-site geologist indicated that sand and silt fill material was encountered across the scrap metal area from the surface to four feet below grade. Pieces of wood, brick, and metal shavings were also present in some of the soil samples. Saturation was encountered at a depth of approximately three to four feet. The subsurface descriptions for each boring are presented in Attachment A.

Headspace screening was performed on each composite soil sample using an organic vapor analyzer (OVA). Each sample was allowed to warm to room temperature, then the aluminum foil seal was pierced using the OVA probe and an organic vapor concentration was recorded. The results of the soil screening are presented in Attachment B.

Based on the results of the soil screening, visual examination, and spatial coverage, six soil samples were selected for laboratory analysis. Soil samples that exhibited the highest organic vapor concentrations were considered for analysis. Soil samples were selected from Borings B-1, B-6, B-7, and B-8 from the two to four foot intervals based on elevated OVA readings. Samples were also selected from Borings B-4 and B-5 from the two to four foot interval partially because of the elevated OVA readings and partially to provide a distribution of samples over the unpaved area.

Each soil sample submitted to the laboratory was analyzed for total petroleum hydrocarbons by flame ionization detection using the New York State Department of Health (NYSDOH) Method 310-13; polychlorinated biphenyls (PCBs) using EPA Method 8080; and halogenated and aromatic hydrocarbons using EPA Methods 8010 and 8020, respectively. Selected soil samples were analyzed for EP Toxicity metals, as well as for aluminum, copper, and zinc using the EPA Method 1310 extraction method. Metal analyses were then performed using the following EPA Methods: arsenic (7060), barium (7080), cadmium (7130), chromium (7190), lead (7420), mercury (7470), selenium (7740), silver (7760), aluminum (7020), copper (7210), and zinc (7950). The results of the laboratory analyses are presented in Attachment C. A summary of the soil analytical results is presented as Attachment D.

Results of the subsurface investigation in the scrap metal area indicate that the concentration of metals and volatile organic compounds in the soil samples submitted for analyses are all below available state or federal standards or guideline action levels. A PCB concentration of 11 parts per million (ppm) was detected from the two to four foot sample depth at B-8, directly adjacent to the paved area. However, the United State Environmental Protection Agency (USEPA) guideline action level for restricted access locations, like the scrap metal area, is 25 ppm. No kerosene, gasoline, or fuel oil was present at or above method detection limits in any of the samples from the scrap metal storage area which were submitted for analysis. Lubricating oils were detected in four of the samples, B-1, B-4, B-7, and B-8, but could not be accurately quantified with the total petroleum hydrocarbon analysis. An oil and grease scan was then performed to obtain an approximation of the concentration of lubricating oil present in these four samples. The oil and grease results are presented in Attachment C. Oil and grease results ranged from 8,800 ppm to 45,000 ppm for the four samples.

Three of the samples analyzed (B-4, B-7, and B-8) are located along the boundary between the existing concrete and the unpaved area. Sample B-1 is located along the southern side of the unpaved area away from an area of possible run-on from the paved storage yard.

Tank Area

Three soil borings (B-9, B-10, and B-11) were located near Plant No. 2 to determine if soil has been impacted by the three underground storage tanks (Figure 3). Soil borings were located adjacent to the 1,000-gallon leaded gasoline tank, the 2,000-gallon unleaded gasoline tank, and the 2,000-gallon diesel tank. Soil samples were obtained, in the same manner as previously described, to a depth below the assumed bottom of the tanks, based on information supplied to Blasland & Bouck by Roth Bros. personnel.

Asphalt underlain by a silt and sand fill layer was encountered from the surface to approximately 5 to 7 feet below grade. A compact red to brown glacial till layer was encountered from approximately 5 to 7 feet below grade to the bottom of each boring at approximately 11 feet. The subsurface soil descriptions are presented in Attachment A. Hydrocarbon odors were noted in the shallow sample taken from B-11 near the diesel tank and appeared to be the result of possible surface spillage. Headspace screening was performed on each composite soil sample using an OVA, as described previously, and the results for B-9, B-10, and B-11 are presented in Attachment B.

Based on the results of the soil screening and visual examination, three soil samples, one from each boring, were selected for laboratory analysis. Each soil sample submitted to the laboratory was analyzed for total petroleum hydrocarbons, PCBs, halogenated and aromatic hydrocarbons, and EP Toxicity metals plus aluminum, copper, and zinc. Extraction and analytical methodologies were identical to those samples submitted from the scrap metal area. Analytical results for B-9, B-10, and B-11 are presented in Attachment C.

Results of the subsurface investigation in the tank area, as summarized in Attachment D, indicate that concentrations of metals, volatile organic compounds, and PCBs are all below available state or federal standards or guideline action levels. No kerosene, gasoline, fuel oil, or lubricating oil was present at or above method detection limits in the soil samples submitted from B-9, B-10, or B-11.

Laboratory results from the tank area and the scrap metal area for the halogenated organic analyses indicate that trichloroethylene was detected in the field and trip blanks which were submitted along with the soil samples. Further investigation indicated that the source of the trichloroethylene was

attributed to laboratory contamination and not to contamination associated with the soil samples. Trichloroethylene was not detected in any of the soil samples analyzed.

In general, testing in the scrap metal area indicates the presence of oil and grease compounds, primarily lubricating oil or cutting oils, that have possibly washed off the stored scrap metal and percolated into the soil. PCBs were detected in one soil sample at two to four feet raising concerns over the possible concentration in surface soils. To address these concerns, a program is being developed to analyze surface samples for PCBs, as well as investigate the possible impact of oil and grease on ground water in the scrap metal area. No significant impacts were detected near the underground storage tanks.

If you have any questions concerning this report, please feel free to contact me.

Very truly yours,

BLASLAND & BOUCK ENGINEERS, P.C.

Mark F. Weider
Associate

MFW/mey
Attachments

# ATTACHMENT A

# SUBSURFACE SOIL DESCRIPTION

ATTACHMENT A

ROTH BROS.
SUBSURFACE SOIL DESCRIPTION

A. Scrap Metal Area Borings B-1 through B-8

| Boring Number | Description |
|---|---|
| B-1 | |
| 0-4' | Red to brown fine to medium sand and silt, little clay and coarse sand, trace fine gravel, FILL, black staining from 2 to 4 feet, moist. |
| B-2 | |
| 0-2.0' | Red to brown fine to coarse sand and silt, little clay, trace fine gravel, FILL, moist. |
| 2.0-4.0' | Dark grey silt, some fine sand and clay, FILL, wet at 3 feet. |
| B-3 | |
| 0-2.5' | Red to brown fine to medium sand, some silt and clay, trace fine gravel, FILL, moist. |
| 2.5-3.0' | Light grey silt and fine sand, trace clay, FILL, moist. |
| 3.0-4.0' | Dark brown silt, fine sand, trace clay, FILL, wet at 3.5 feet. |
| B-4 | |
| 0-2.5' | Dark grey to brown fine sand and silt, trace clay, FILL, moist. |
| 2.5-3.5' | Dark brown fine sand and silt, FILL, moist. |
| 3.5-4.0' | Light grey to white fine sand and silt, FILL, wet at 4 feet. |
| B-5 | |
| 0-2.5' | Red to brown fine sand and silt, trace clay and fine gravel, FILL, moist. |
| 2.5-4.0' | Dark grey fine sand and silt, FILL, wet at 3.5 feet. |

ATTACHMENT A (Cont'd.)

| Boring Number | Description |
|---|---|
| B-6 | |
| 0-2.5' | Red to brown fine to coarse sand and silt, little clay, trace fine gravel, FILL, black staining at surface, moist. |
| 2.5-4.0' | Dark grey SILT and fine SAND, plant matter, wet at 3.5 feet. |
| B-7 | |
| 0-4.0' | Dark red to brown fine to coarse sand and gravel, some silt and clay, FILL, pieces of wood, black staining from 0 to 4 feet, moist. |
| B-8 | |
| 0-4.0' | Brown fine to coarse sand, some fine gravel and silt, trace clay, FILL, pieces of metal, brick, and wood, black staining from 2 to 4 feet, moist. |

B. Tank Area Borings B-9 through B-11

| Boring Number | Description |
|---|---|
| B-9 | |
| 0-1.5' | Black ASPHALT and fine to medium gravel, FILL, moist. |
| 1.5-5.0' | Red to brown fine to medium sand and silt, little clay, trace fine gravel, FILL, moist. |
| 5.0-10.5' | Red to brown fine to medium sand and silt, little clay, trace fine gravel, TILL, moist. |
| B-10 | |
| 0-1.5' | Black ASPHALT and fine to medium gravel, FILL, moist. |
| 1.5-6.0' | Red to brown fine sand and silt, trace clay and fine gravel, FILL, moist. |
| 6.0-11.0' | Red to brown fine sand and silt, little medium to coarse sand, trace clay and fine gravel, TILL, moist. |

ATTACHMENT A (Cont'd.)

| Boring Number | Description |
|---|---|
| B-11 | |
| 0-1.0' | Black ASPHALT and fine to medium gravel FILL, moist. |
| 1.0-2.5' | Dark grey fine sand, some silt, FILL, black staining, product odors, moist. |
| 2.5-6.5' | Red to brown fine sand, some silt, little clay and coarse sand, FILL, black staining from 3 to 4.5 feet, wet at 6 feet.. |
| 6.5-11.0' | Red to brown fine to coarse sand and silt, little clay, trace fine gravel, TILL, moist. |

ATTACHMENT B

SOIL VAPOR SCREENING RESULTS

ATTACHMENT B

ROTH BROS.
SOIL VAPOR SCREENING RESULTS

A. Scrap Metal Area

| Boring Number | Interval (feet) | Ambient Air (ppm) | OVA Value (ppm) |
|---|---|---|---|
| B-1 | 0-2 | 1.0 | 2 |
| | 2-4x | 1.0 | 10,000 |
| B-2 | 0-2 | 2.0 | 3 |
| | 2-4 | 2.0 | 500 |
| B-3 | 0-2 | 2.0 | 2.5 |
| | 2-4 | 2.0 | 6 |
| B-4 | 0-2 | 2.5 | 20 |
| | 2-4x | 2.5 | 200 |
| B-5 | 0-2 | 2.5 | 3.5 |
| | 2-4x | 2.5 | 600 |
| B-6 | 0-2 | 3.0 | 3 |
| | 2-4x | 3.0 | 10,000 |
| B-7 | 0-2 | 3.0 | 3.5 |
| | 2-4x | 3.0 | 10,000 |
| B-8 | 0-2 | 3.0 | 7 |
| | 2-4x | 3.0 | 7,000 |

B. Tank Area

| Boring Number | Interval (feet) | Ambient Air (ppm) | OVA Value (ppm) |
|---|---|---|---|
| B-9 | 1-3 | 3.0 | 60 |
| | 3-5x | 3.5 | 20 |
| | 5-7 | 3.5 | 5.5 |
| | 7-8.2 | 3.5 | 8 |
| | 9-10.5 | 3.5 | 7 |
| B-10 | 1-3 | 3.5 | 7 |
| | 3-5 | 3.5 | 9 |
| | 5-7x | 3.5 | 20 |
| | 7-9 | 3.5 | 5 |
| | 9-11 | 3.5 | 4 |
| B-11 | 1-3 | 3.5 | 20 |
| | 3-5 | 3.5 | 6 |
| | 5-7 | 3.5 | 4.5 |
| | 7-9x | 3.5 | 20 |
| | 9-11 | 3.5 | 12 |

x Sample submitted for analysis for Volatile Organics, PCBs, EP Toxicity Metals plus Aluminum, Copper, and Zinc, and Total Petroleum Hydrocarbons.

# ATTACHMENT C

# LABORATORY ANALYSES RESULTS

Analysis Results
Report Number 111089001
Date: November 10, 1989

| CLIENT I.D.<br><br>Blasland. Bouck & Lee Engineers, P.C.<br>(Roth Brothers, Project #506.01) | B-1<br>2-4'<br>10/19/89 | B-4<br>2-4'<br>10/19/89 | B-5<br>2-4'<br>10/19/89 | B-6<br>2-4'<br>10/19/89 |
|---|---|---|---|---|
| ULI I.D. | 29389063 | 229389064 | 22989065 | 22989066 |
| FID: | | | | |
| Gasoline | Non-Detected | Non-Detected | Non-Detected | Non-Detected |
| Kerosene | <20 mg/kg | <20 mg/kg | <10 mg/kg | <20 mg/kg |
| Fuel Oil | <20 mg/kg | <20 mg/kg | <10 mg/kg | <20 mg/kg |
| Lubricating Oil | Detected | Detected | Non-Detected | Non-Detected |
| Total PCBs * | <2 | <2 | <2 | <5 |
| EP TOXICITY: | | | | |
| Aluminum | 3.5 | <0.5 | <0.5 | 3.0 |
| Arsenic | 0.024 | <0.001 | 0.003 | 0.020 |
| Barium | 1.2 | <0.3 | 0.6 | 0.8 |
| Cadmium | <0.005 | <0.005 | <0.005 | 0.007 |
| Chromium | <0.05 | <0.05 | <0.05 | <0.05 |
| Copper | 0.13 | <0.02 | 0.02 | 0.09 |
| Lead | 0.3 | 0.1 | <0.1 | 0.4 |
| Mercury | <0.0004 | <0.0004 | 0.0007 | <0.0004 |
| Selenium | <0.001 | <0.001 | <0.001 | <0.001 |
| Silver | <0.05 | <0.05 | <0.05 | <0.05 |
| Zinc | 4.6 | 0.20 | 0.45 | 2.4 |

All results are expressed as mg/l unless otherwise stated.
*Results are expressed as mg/kg dry weight.
Sampled by client.

Approved: _____ bnl 11/10/89

Note: See disclaimer on cover letter.

UPSTATE LABORATORIES INC.
Analysis Results
Report Number 111089001
Date: November 10, 1989

| CLIENT I.D.<br><br>Blasland, Bouck & Lee Engineers, P.C.<br>(Roth Brothers, Project #506.01) | B-7<br>2-4'<br>10/19/89 | B-8<br>2-4'<br>10/19/89 | B-9<br>3-5'<br>10/19/89 | B-10<br>5-7'<br>10/19/89 |
|---|---|---|---|---|
| ULI I.D. | 29389067 | 29389068 | 29389069 | 29389070 |
| FID: | | | | |
| Gasoline | Non-Detected | Non-Detected | Non-Detected | Non-Detected |
| Kerosene | <150 mg/kg | <350 mg/kg | <10 mg/kg | <10 mg/kg |
| Fuel Oil | <150 mg/kg | <350 mg/kg | <10 mg/kg | <10 mg/kg |
| Lubricating Oil | Detected | Detected | Non-Detected | Non-Detected |
| Total PCBs * | <2 | 11 | <2 | <2 |
| EP TOXICITY: | | | | |
| Aluminum | 7.2 | 3.4 | <0.5 | 0.5 |
| Arsenic | 0.016 | 0.008 | <0.001 | 0.001 |
| Barium | 1.0 | 0.7 | 0.7 | 0.5 |
| Cadmium | 0.018 | 0.44 | <0.005 | <0.005 |
| Chromium | <0.05 | <0.05 | <0.05 | <0.05 |
| Copper | 0.15 | 0.18 | 0.05 | 0.07 |
| Lead | 0.5 | 1.0 | <0.1 | <0.1 |
| Mercury | <0.0004 | <0.0004 | <0.0004 | <0.0004 |
| Selenium | <0.001 | <0.001 | <0.001 | <0.001 |
| Silver | <0.05 | <0.05 | 0.05 | <0.05 |
| Zinc | 6.9 | 22 | 0.10 | 0.35 |

All results are expressed as mg/l unless otherwise stated.
*Results are expressed as mg/kg dry weight.
Sampled by client.

Approved: _____ mL 11/10/89

Note: See disclaimer on cover letter.

UPSTATE LABORATORIES INC.
Analysis Results
Report Number 111089001
Date: November 10, 1989

| CLIENT I.D.<br><br>Blasland, Bouck & Lee Engineers, P.C.<br>(Roth Brothers, Project #506.01) | B-11<br>7-9'<br>10/19/89 | Field Blank<br>10/19/89 | | |
|---|---|---|---|---|
| ULI I.D. | 29389071 | 29389072 | | |
| FID: | | | | |
| Gasoline | Non-Detected | Non-Detected | | |
| Kerosene | <10 mg/kg | <0.1 ug/l | | |
| Fuel Oil | <10 mg/kg | <0.1 ug/l | | |
| Lubricating Oil | Non-Detected | Non-Detected | | |
| Total PCBs | <2 * | <0.1 ug/l | | |
| TOTAL: | | | | |
| Aluminum | -- | <0.5 | | |
| Arsenic | -- | <0.001 | | |
| Barium | -- | <0.3 | | |
| Cadmium | -- | <0.005 | | |
| Chromium | -- | <0.05 | | |
| Copper | -- | <0.02 | | |
| Lead | -- | <0.1 | | |
| Mercury | -- | <0.0004 | | |
| Selenium | -- | <0.001 | | |
| Silver | -- | <0.05 | | |
| Zinc | -- | <0.005 | | |
| EP TOXICITY: | | | | |
| Aluminum | 0.8 | -- | | |
| Arsenic | 0.001 | -- | | |
| Barium | 0.5 | -- | | |
| Cadmium | <0.005 | -- | | |
| Chromium | <0.05 | -- | | |
| Copper | 0.07 | -- | | |
| Lead | <0.1 | -- | | |
| Mercury | <0.0004 | -- | | |
| Selenium | <0.001 | -- | | |
| Silver | <0.05 | -- | | |
| Zinc | 0.18 | -- | | |

All results are expressed as mg/l unless otherwise stated.
*Results are expressed as mg/kg dry weight.
Sampled by client.

Approved: _____ ML 11/10/89

Note: See disclaimer on cover letter.

Analysis Results
Report Number 111089001
Date: November 10, 1989

EPA 601/602

| CLIENT I.D.<br><br>Blasland, Bouck & Lee Engineers, P.C.<br>(Roth Brothers, Project #506.01) | B-1<br>2-4'<br>10/19/89 | B-4<br>2-4'<br>10/19/89 | B-5<br>2-4'<br>10/19/89 | B-6<br>2-4'<br>10/19/89 |
|---|---|---|---|---|
| ULI I.D. | 29389063 | 29389064 | 29389065 | 29389066 |
| EPA 601: | | | | |
| Chloromethane | <23 | <22 | <21 | <22 |
| Bromomethane | <23 | <22 | <21 | <22 |
| Dichlorodifluoromethane | <23 | <22 | <21 | <22 |
| Vinyl Chloride | <23 | <22 | <21 | <22 |
| Chloroethane | <23 | <22 | <21 | <22 |
| Methylene Chloride * | <23 | <22 | <21 | <22 |
| Trichlorofluoromethane | <23 | <22 | <21 | <22 |
| 1,1-Dichloroethylene | <23 | <22 | <21 | <22 |
| 1,1-Dichloroethane | <23 | <22 | <21 | <22 |
| t-1,2-Dichloroethylene | <23 | <22 | <21 | <22 |
| Chloroform * | <23 | <22 | <21 | <22 |
| 1,2-Dichloroethane | <23 | <22 | <21 | <22 |
| 1,1,1-Trichloroethane | <23 | <22 | <21 | <22 |
| Carbon Tetrachloride | <23 | <22 | <21 | <22 |
| Bromodichloromethane | <23 | <22 | <21 | <22 |
| 1,2-Dichloropropane | <23 | <22 | <21 | <22 |
| t-1,3-Dichloropropylene | <23 | <22 | <21 | <22 |
| Trichloroethylene | <23 | <22 | <21 | <22 |
| Dibromochloromethane | <23 | <22 | <21 | <22 |
| 1,1,2-Trichloroethane | <23 | <22 | <21 | <22 |
| c-1,3-Dichloropropylene | <23 | <22 | <21 | <22 |
| 1,1,2,2-Tetrachloroethane | <23 | <22 | <21 | <22 |
| Tetrachloroethylene | <23 | <22 | <21 | <22 |
| Bromoform | <23 | <22 | <21 | <22 |
| 2-Chloroethylvinyl Ether | <23 | <22 | <21 | <22 |
| EPA 602 (including Xylenes): | | | | |
| Benzene | <23 | <22 | <21 | <22 |
| Toluene | <23 | <22 | <21 | <22 |
| Ethylbenzene | <23 | <22 | <21 | <22 |
| Xylenes | <23 | <22 | <21 | <22 |
| Halogenated Aromatics (601/602): | | | | |
| Chlorobenzene | <23 | <22 | <21 | <22 |
| 1,2-Dichlorobenzene | <23 | <22 | <21 | <22 |
| 1,3-Dichlorobenzene | <23 | <22 | <21 | <22 |
| 1,4-Dichlorobenzene | <23 | <22 | <21 | <22 |

All results are expressed as ppb. *Blank corrected.
Sampled by client.

Approved: _____ MC 11/10/89

Note: See disclaimer on cover letter.

Analysis Results
Report Number 111089001
Date: November 10, 1989

EPA 601/602

| CLIENT I.D.<br><br>Blasland, Bouck & Lee Engineers, P.C.<br>(Roth Brothers, Project #506.01) | B-7<br>2-4'<br>10/19/89 | B-8<br>2-4'<br>10/19/89 | B-9<br>3-5'<br>10/19/89 | B-10<br>5-7'<br>10/19/89 |
|---|---|---|---|---|
| ULI I.D. | 29389067 | 29389068 | 29389069 | 29389070 |
| EPA 601: | | | | |
| Chloromethane | <21 | <20 | <22 | <22 |
| Bromomethane | <21 | <20 | <22 | <22 |
| Dichlorodifluoromethane | <21 | <20 | <22 | <22 |
| Vinyl Chloride | <21 | <20 | <22 | <22 |
| Chloroethane | <21 | <20 | <22 | <22 |
| Methylene Chloride * | <21 | <20 | <22 | <22 |
| Trichlorofluoromethane | <21 | <20 | <22 | <22 |
| 1,1-Dichloroethylene | <21 | <20 | <22 | <22 |
| 1,1-Dichloroethane | <21 | <20 | <22 | <22 |
| t-1,2-Dichloroethylene | <21 | <20 | <22 | <22 |
| Chloroform * | <21 | <20 | <22 | <22 |
| 1,2-Dichloroethane | <21 | <20 | <22 | <22 |
| 1,1,1-Trichloroethane | <21 | <20 | <22 | <22 |
| Carbon Tetrachloride | <21 | <20 | <22 | <22 |
| Bromodichloromethane | <21 | <20 | <22 | <22 |
| 1,2-Dichloropropane | <21 | <20 | <22 | <22 |
| t-1,3-Dichloropropylene | <21 | <20 | <22 | <22 |
| Trichloroethylene | <21 | <20 | <22 | <22 |
| Dibromochloromethane | <21 | <20 | <22 | <22 |
| 1,1,2-Trichloroethane | <21 | <20 | <22 | <22 |
| c-1,3-Dichloropropylene | <21 | <20 | <22 | <22 |
| 1,1,2,2-Tetrachloroethane | <21 | <20 | <22 | <22 |
| Tetrachloroethylene | <21 | <20 | <22 | <22 |
| Bromoform | <21 | <20 | <22 | <22 |
| 2-Chloroethylvinyl Ether | <21 | <20 | <22 | <22 |
| EPA 602 (including Xylenes): | | | | |
| Benzene | <21 | <20 | <22 | <22 |
| Toluene | <21 | <20 | <22 | <22 |
| Ethylbenzene | <21 | <20 | <22 | <22 |
| Xylenes | <21 | <20 | <22 | <22 |
| Halogenated Aromatics (601/602): | | | | |
| Chlorobenzene | <21 | <20 | <22 | <22 |
| 1,2-Dichlorobenzene | <21 | <20 | <22 | <22 |
| 1,3-Dichlorobenzene | <21 | <20 | <22 | <22 |
| 1,4-Dichlorobenzene | <21 | <20 | <22 | <22 |

All results are expressed as ug/l. *Blank corrected.
Sampled by client.

Approved: _____ mL 11/10/89

Note: See disclaimer on cover letter.

UPSTATE LABORATORIES, INC.
Analysis Results
Report Number 111089001
Date: November 10, 1989

EPA 601/602

| CLIENT I.D.<br><br>Blasland, Bouck & Lee Engineers, P.C.<br>(Roth Brothers, Project #506.01) | B-11<br>7-9'<br>10/19/89 | Field Blank<br>10/19/89 | Trip Blank<br>(Received<br>10/20/89) | |
|---|---|---|---|---|
| ULI I.D. | 29389071 * | 29389072 | 29389073 | |
| EPA 601: | | | | |
| Chloromethane | <22 | <1 | <1 | |
| Bromomethane | <22 | <1 | <1 | |
| Dichlorodifluoromethane | <22 | <1 | <1 | |
| Vinyl Chloride | <22 | <1 | <1 | |
| Chloroethane | <22 | <1 | <1 | |
| Methylene Chloride ** | <22 | <5 | <5 | |
| Trichlorofluoromethane | <22 | <1 | <1 | |
| 1,1-Dichloroethylene | <22 | <1 | <1 | |
| 1,1-Dichloroethane | <22 | <1 | <1 | |
| t-1,2-Dichloroethylene | <22 | <1 | <1 | |
| Chloroform ** | <22 | <1 | <1 | |
| 1,2-Dichloroethane | <22 | <1 | <1 | |
| 1,1,1-Trichloroethane | <22 | <1 | <1 | |
| Carbon Tetrachloride | <22 | <1 | <1 | |
| Bromodichloromethane | <22 | <1 | <1 | |
| 1,2-Dichloropropane | <22 | <1 | <1 | |
| t-1,3-Dichloropropylene | <22 | <1 | <1 | |
| Trichloroethylene | <22 | 12 | 10 | |
| Dibromochloromethane | <22 | <1 | <1 | |
| 1.1.2-Trichloroethane | <22 | <1 | <1 | |
| c-1.3-Dichloropropylene | <22 | <1 | <1 | |
| 1,1,2,2-Tetrachloroethane | <22 | <1 | <1 | |
| Tetrachloroethylene | <22 | <1 | <1 | |
| Bromoform | <22 | <1 | <1 | |
| 2-Chloroethylvinyl Ether | <22 | <1 | <1 | |
| EPA 602 (including Xylenes): | | | | |
| Benzene | <22 | <1 | <1 | |
| Toluene | <22 | <1 | <1 | |
| Ethylbenzene | <22 | <1 | <1 | |
| Xylenes | <22 | <1 | <1 | |
| Halogenated Aromatics (601/602): | | | | |
| Chlorobenzene | <22 | <1 | <1 | |
| 1,2-Dichlorobenzene | <22 | <1 | <1 | |
| 1,3-Dichlorobenzene | <22 | <1 | <1 | |
| 1,4-Dichlorobenzene | <22 | <1 | <1 | |

All results are expressed as ug/l unless otherwise stated.
*Results are expressed as ppb. **Blank corrected.
Sampled by client.
NYS DOH I.D.: 10170

Approved: _____ MC 11/10/89
Note: See disclaimer on cover letter.

UPSTATE LABORATORIES, INC.
Analysis Results
Report Number 112989021
Date: November 29, 1989

| CLIENT I.D.<br><br>Blasland, Bouck & Lee Engineers, P.C.<br>(Roth Brothers, Project #506.01) | ULI I.D. | Oil and Grease | | | |
|---|---|---|---|---|---|
| B-1, 2-4', 10/19/89 | 33189002 | 9700 | | | |
| B-4, 2-4', 10/19/89 | 33189003 | 8800 | | | |
| B-7, 2-4', 10/19/89 | 33189004 | 45,000 | | | |
| B-8, 2-4', 10/19/89 | 33189005 | 9100 | | | |

All results are expressed as ppm as received.
Sampled by client.
NYS DOH I.D.: 10170

Approved: _____ 11/29/89

Note: See disclaimer on cover letter.

# ATTACHMENT D

# SOIL ANALYTICAL SUMMARY

ATTACHMENT D

ROTH BROS.
SOIL ANALYTICAL SUMMARY

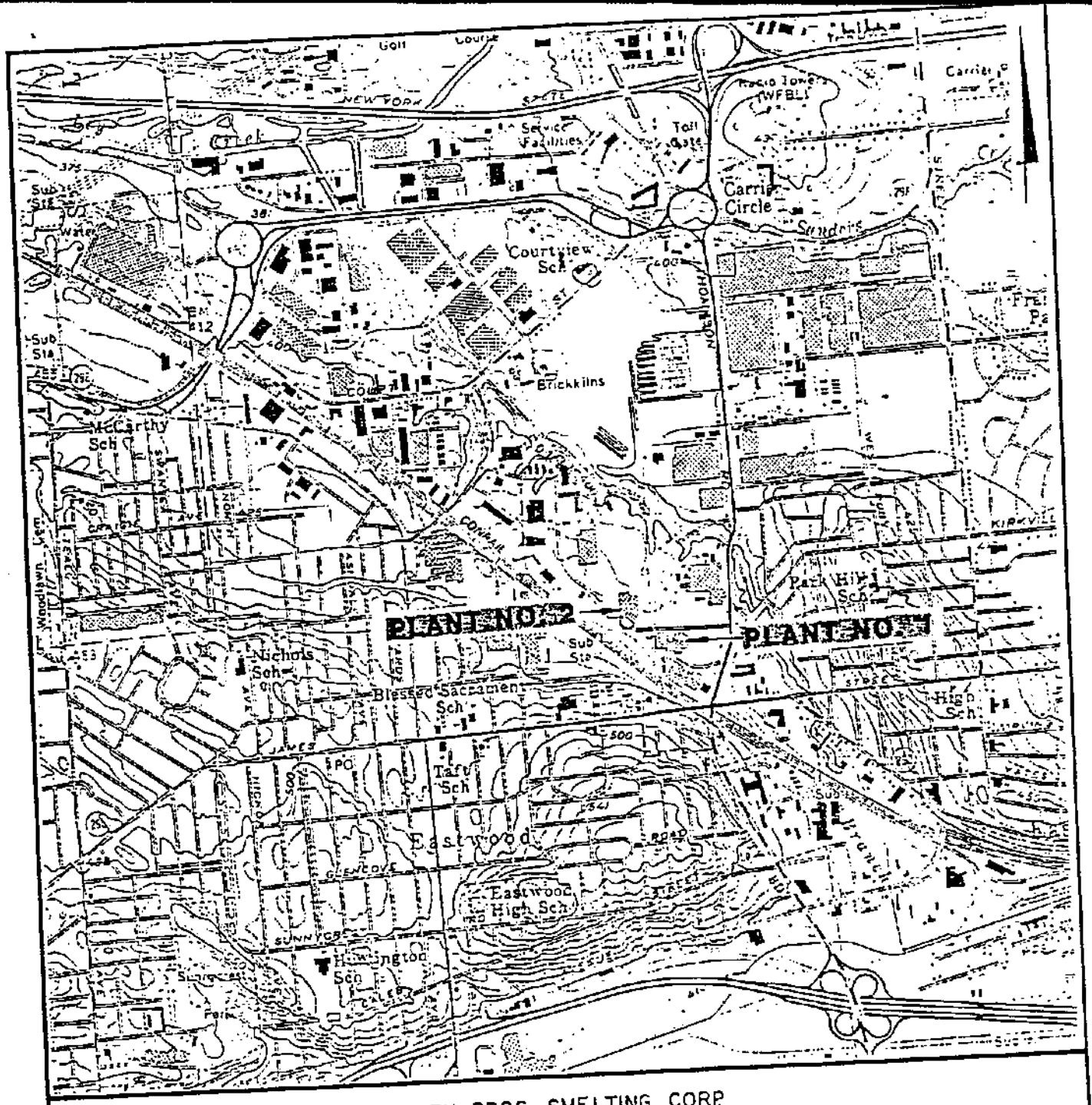
| | B-1 2-4' | B-4 2-4' | B-5 2-4' | B-6 2-4' | B-7 2-4' | B-8 2-4' | B-9 3-5' | B-10 5-7' | B-11 7-9' | Trip Blank | Field Blank | Std.[1] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PCBs (mg/kg) | | | | | | | | | | | | |
| Total PCBs | | | | | | 11 | | | | | | |
| Metals (mg/l) | | | | | | | | | | | | NA |
| Aluminum | 3.5 | | | 3.0 | 7.2 | 3.4 | | 0.5 | 0.8 | | | 5.0 |
| Arsenic | 0.024 | | .003 | 0.02 | 0.016 | .008 | | 0.001 | 0.001 | | | 100.0 |
| Barium | 1.2 | | 0.6 | 0.8 | 1.0 | 0.7 | 0.7 | 0.5 | 0.5 | | | 1.0 |
| Cadmium | | | | 0.007 | 0.018 | 0.44 | | | | | | NA |
| Copper | 0.13 | | 0.02 | 0.09 | 0.15 | 0.18 | 0.05 | 0.07 | 0.07 | | | 5.0 |
| Lead | 0.3 | 0.1 | | 0.4 | 0.5 | 1.0 | | | | | | 0.2 |
| Mercury | | | .0007 | | | | | | | | | 5.0 |
| Silver | | | | | | | 0.05 | | | | | NA |
| Zinc | 4.6 | 0.20 | 0.45 | 2.4 | 6.9 | 22 | 0.10 | 0.35 | 0.18 | | | |
| Total Petroleum Hydrocarbons | | | | | | | | | | | | |
| Lubricating Oil | D | D | | | D | D | | | | | | |
| Oil & Grease (ppm) | 9,700 | 8,800 | | | 45,000 | 9,100 | | | | | | |
| Volatile Organics (ug/l) | | | | | | | | | | | | |
| Trichloro-ethylene | | | | | | | | | | 10 | 12 | |

12/14/89
1289199/GG

ATTACHMENT D (Cont'd.)

Notes:

Only compounds at or above detection units are shown
NA - Not Available
[1] - USEPA 40 CFR Part 261
D - Detected (quantity approximated by oil & grease scan)




ROTH BROS. SMELTING CORP.
SYRACUSE, NEW YORK

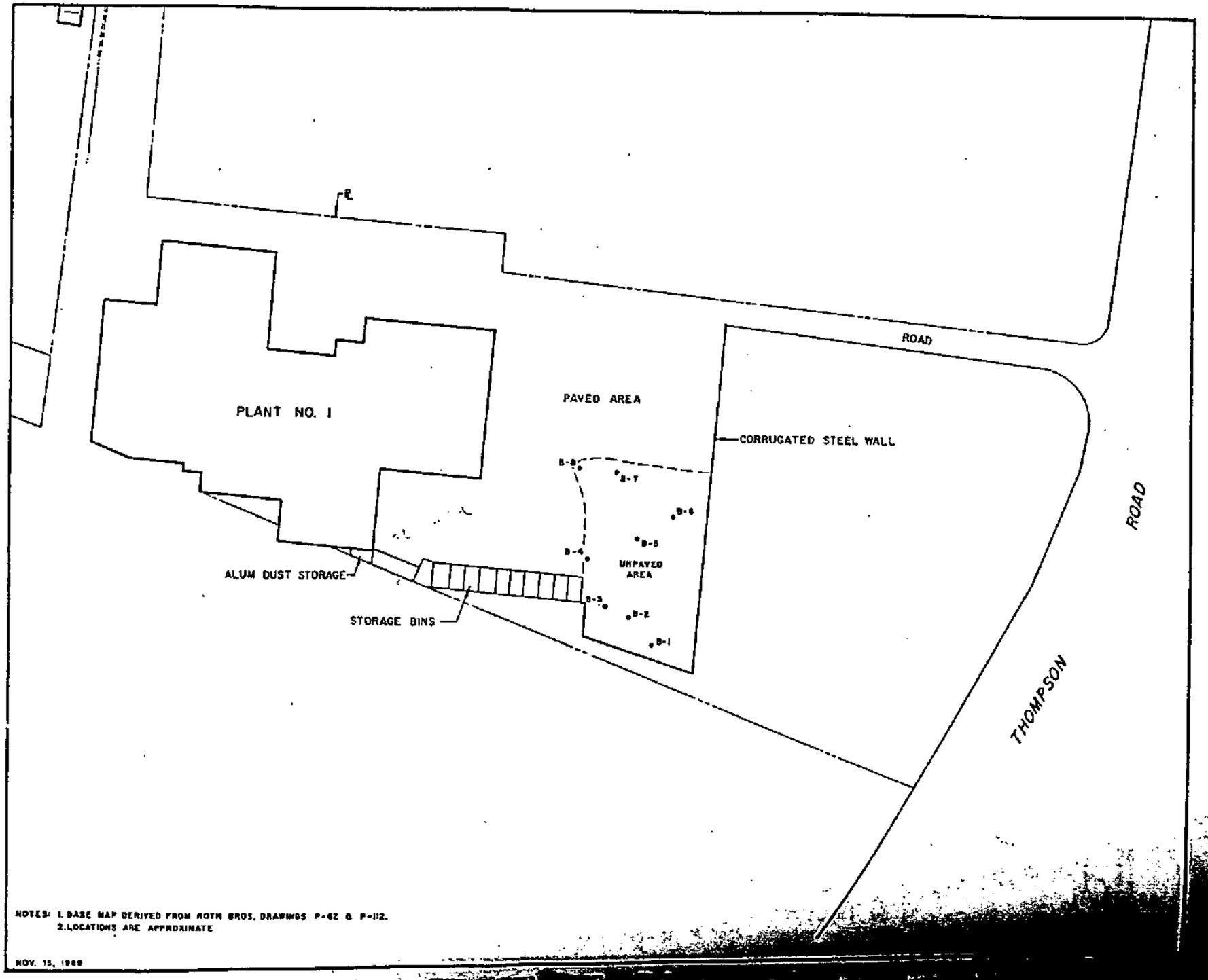
# SITE LOCATION MAP

SCALE

2000' 0 2000'

BLASLAND & BOUCK ENGINEERS, P.C.
ENGINEERS & GEOSCIENTISTS

FIGURE 2




LEGEND

B-8 • SOIL BORING LOCATION

ROTH BROS. SMELTING CORP.
SYRACUSE, NEW YORK

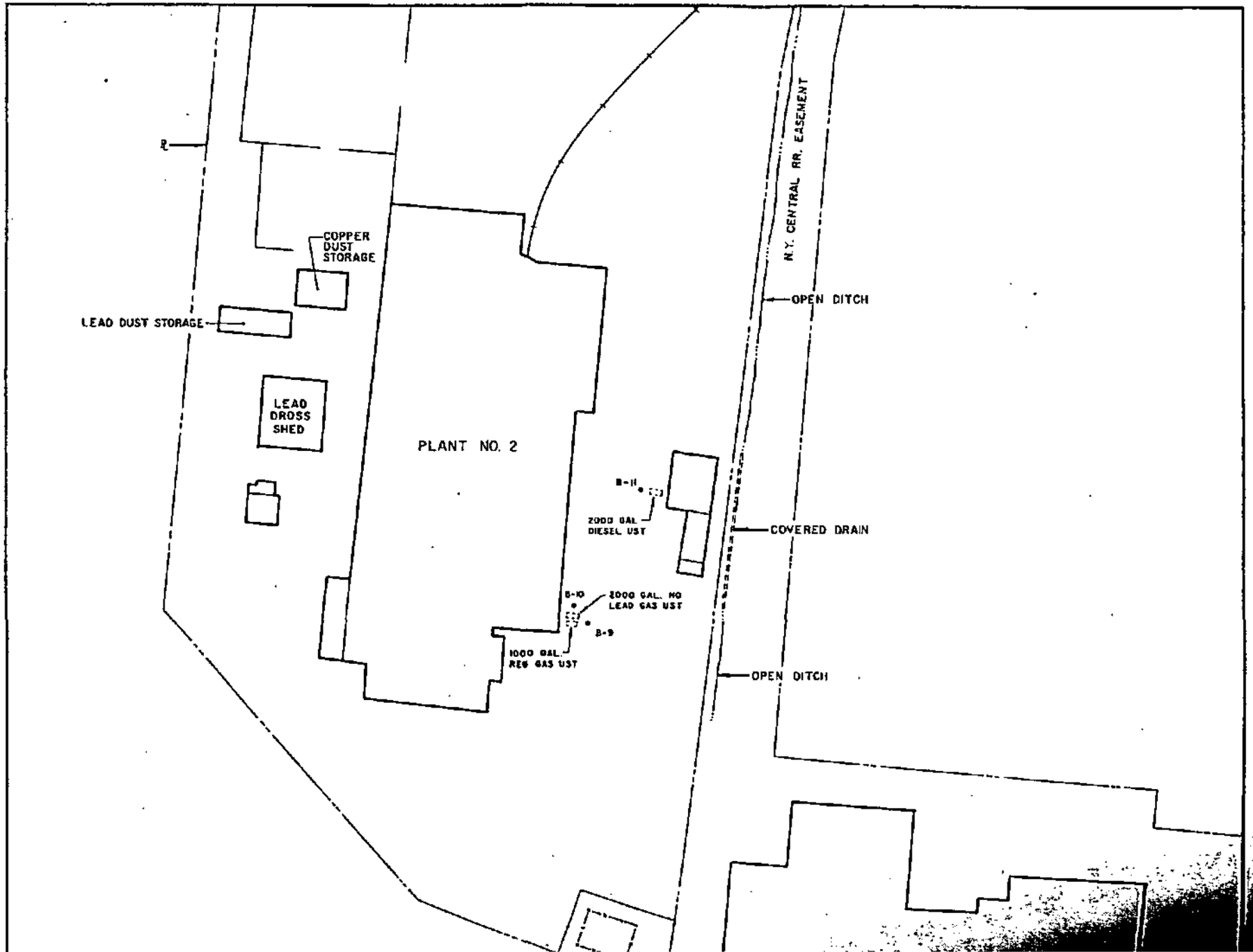
SOIL BORING LOCATIONS
SCRAP METAL AREA

SCALE
0 100'

NOTES: 1. BASE MAP DERIVED FROM ROTH BROS. DRAWINGS P-62 & P-112.
2. LOCATIONS ARE APPROXIMATE

NOV. 15, 1969

FIGURE 3




LEGEND

B-9 SOIL BORING LOCATION

ROTH BROS. SMELTING CORP.
SYRACUSE, NEW YORK

SOIL BORING LOCATIONS
TANK AREA

SCALE
100

Galson Technical Services

Galson Technical Services, Inc.
6601 Kirkville Road
E. Syracuse, NY 13057
Tel: (315) 432-0506
FAX: (315) 437-0509

May 8, 1990

Mr. Larry Blue
Nixon, Hargrave, Devans & Doyle
Attorneys and Counselors at Law
P.O. Box 1051
Rochester, New York 14603

RE: SOIL AND WATER SAMPLING
ROTH BROS. SMELTING CORPORATION
GALSON PROJECT NO. GZ-025

Mr. Blue:

The following letter report is forwarded with the results of the sampling and analytical program conducted in April, 1990 at the Roth Bros. Smelting Corporation facility.

## 1.0 INTRODUCTION

Nixon, Hargrave, (Nixon, Hargrave) Devans & Doyle, retained Galson Technical Services Inc., (GALSON) to collect and analyze water and soil samples form specified points on the property of Roth Bros. Smelting Corporation located on Thompson Road in Syracuse, New York. This sampling was conducted as part of a comprehensive environmental audit of the facility.

## 2.0 SAMPLING METHODS

GALSON collected soil and water samples from areas specified by Nixon, Hargrave representatives.

Surface soil samples were collected using clean stainless steel trowels. In unpaved areas, a pit was excavated to 6 inches below grade by hand trowel, this soil material was retrieved, then composited in a stainless steel mixing bowl.

Stream sediment samples were retrieved by dragging the sample container along the stream bottom, decanting, and then repeating the procedure so that enough stream sediment could be collected for analysis.

Water samples were collected by submerging the sample bottle below water level.

Thompson Rd.

## 3.0 SAMPLING LOCATIONS

Samples number 1 and 2 were retrieved from the aluminum storage area in the northwest corner of the property. This is a paved area so only surface scrapings over an one square foot area were retrieved. Samples 3 and 4 were taken form the open field/fill area along the northern boundary of the property. A 6 inch pit was excavated and a representative cross section was retrieved. Samples 5 and 6 are from the small drainage swale along the western property boundary. Sample 7 was taken from the paved area outside the lead dross house. Samples 8,9, and 10 were taken from a drainage ditch along the northeastern property boundary. This area appears to drain the field form which samples 3 and 4 were collected. Samples 11 and 12 were taken form the aluminum turings storage area in the southeast portion of the property. Samples 13,14 and 15 were retrieved along the northern edge of the common property boundary with Oberdorfer Foundry. Samples 16,17 and 18 were taken about 150 m west of the samples 13,14, and 15. Sample 19 was retrieved from inside a containing wall built around 2 large petroleum tanks.

Sampling locations are noted graphically in Figure 1. Also attached are field sampling notes taken during sample retrieval.

## 4.0 ANALYTICAL METHODS

Soil Samples were submitted to Galson Laboratories to analyze for oil & grease, PCBs, metals (total and TCLP extraction), semi-volatile organics, and phenols. Water samples were analyzed for oil & grease. Table 2 notes which parameter methods were analyzed for each particular sample.

## 5.0 RESULTS

The laboratory data and results are attached, excepting the semi-volatile results. These will be forwarded upon final review.

If there are any questions, please feel free to call.

Submitted by:

Paul F. Gottler
Geologist

Approved By:

Thomas W. Moran, P.E.
Senior Environmental Engineer

ROTH BROTHERS SMELTING CORP.
SUMMARY OF ANALYTE ANALYSES
APRIL 6,1990
GALSON PROJECT GZ-025

| SAMPLE # | LOCATION | PCB's | Phenols | Oil & Grease | Total Metals | TCLP Metals | Semivolatiles |
|---|---|---|---|---|---|---|---|
| 1 | Al. storage area | | | | X | X | X |
| 2 | " | | | | X | X | X |
| 3 | Open field to the North | | | | X | X | |
| 4 | " | | | | X | X | |
| 5 | Ditch to the west | X | | | X | X | |
| 6 | " | | X | | | | |
| 7 | Near lead dross hut | | | | X | X | |
| 8 | Ditch near fill area | X | | | X | X | |
| 9 | " | | | | | | X |
| 10 | " | | | X | | | |
| 11 | Al. turnings area | | | X | | | |
| 12 | " | | | X | | | |
| 13 | Oberdorfer boundry E. | | X | | | | |
| 14 | " | | | | | | X |
| 15 | " | | | | X | X | |
| 16 | Oberdorfer boundry W. | | | | | | X |
| 17 | " | | X | | | | |
| 18 | " | | | | X | X | |
| 19 | Oil tank retaining wall | | | X | | | |

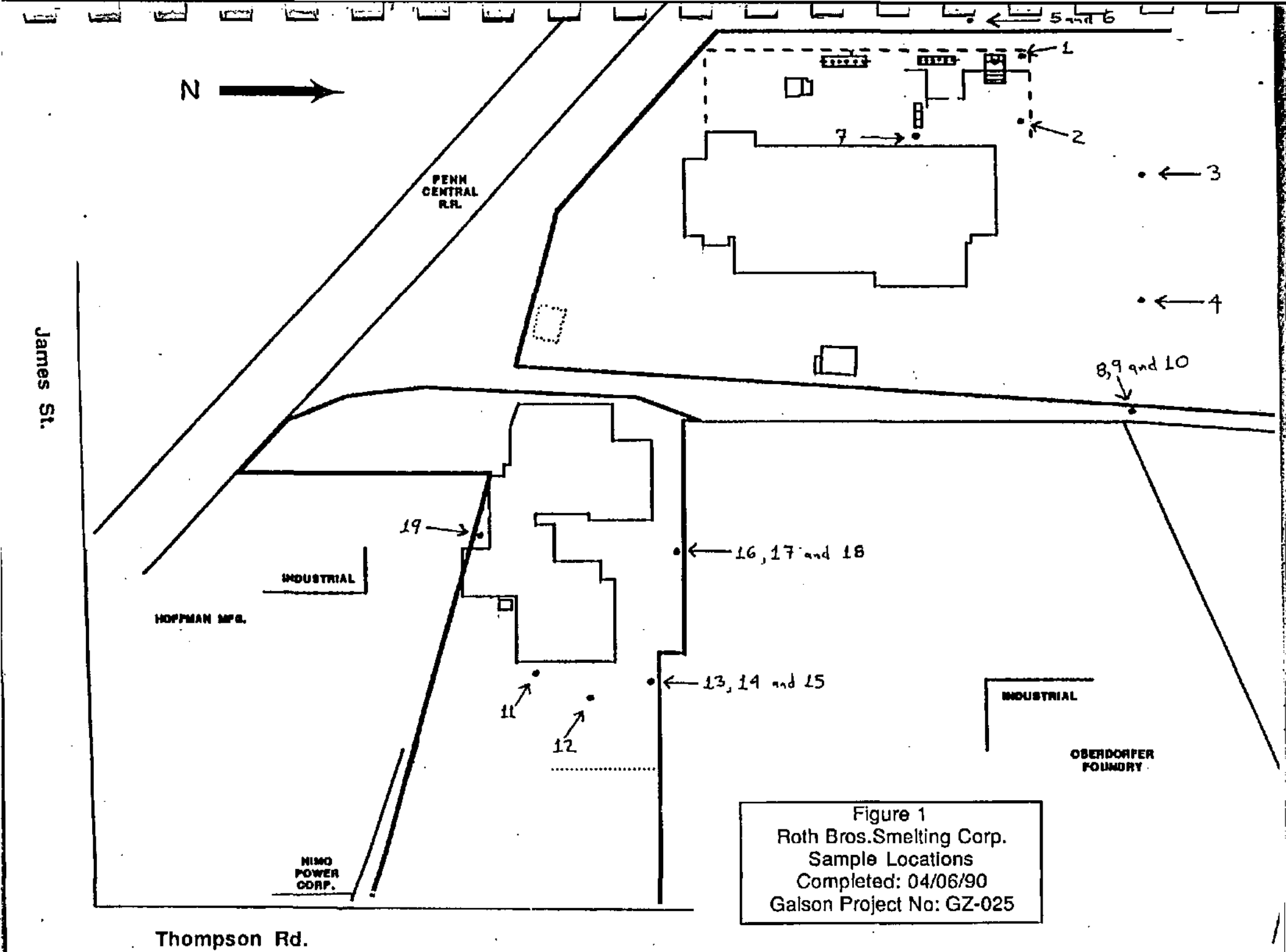



Figure 1
Roth Bros.Smelting Corp.
Sample Locations
Completed: 04/06/90
Galson Project No: GZ-025

Galson Laboratories

6601 Kirkville Road
E. Syracuse, NY 13057
Tel. (315) 432-0506
1-800-950-0506

# LABORATORY ANALYSIS REPORT

Client: NIXON HARGRAVE
Task Number: 90040927
Location: ROTH BROTHERS

Job Number: GZ024LL
Date Sampled: 6-APR-1990

TLCP METALS

| | | Lab ID: | J8265 | J8266 | J8267 | J8268 | J8269 | J8271 |
|---|---|---|---|---|---|---|---|---|
| | | Client ID: | NH-1 | NH-2 | NH-3 | NH-4 | NH-5 | NH-7 |
| | | | NON-TOXIC | NON-TOXIC | NON-TOXIC | NON-TOXIC | TOXIC | TOXIC |
| Arsenic- LEACHATE | MG/L | | <2 | <2 | <2 | <2 | <2 | <2 |
| Barium- LEACHATE | | | 4.2 | 3.2 | 4.2 | 3.2 | 4.2 | 4.8 |
| Cadmium- LEACHATE | | | 0.16 | 0.12 | 0.092 | 0.024 | 0.42 | 0.30 |
| Chromium- LEACHATE | | | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| Lead- LEACHATE | | | 1.1 | 0.52 | 1.6 | 1.2 | *7.2 | *12 |
| Mercury- LEACHATE | | | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 | <0.002 |
| Selenium- LEACHATE | | | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Silver- LEACHATE | | | <0.06 | <0.06 | <0.06 | <0.06 | <0.06 | <0.06 |

Method(s): EPA SW846 METHOD 1311
Footnotes: *EXCEEDS THE TLCP MAXIMUM CONCENTRATION LEVEL

(<) - Less Than
(>) - Greater Than
NA - Not Applicable
ND - Not Detectable
NS - Not Specified
MG - Milligrams
L - Liters
$M^3$ - Cubic Meter
$MG/M^3$ - Milligrams Per Cubic Meter
PPM - Parts Per Million
UG - Micrograms
NG - Nanograms
BL - Blank

Submitted by: ML, KB, AN, SH, DS
Approved by: Mary L Watkins
Date: 26-APR-1990

Galson Laboratories

6601 Kirkville Road
E. Syracuse, NY 13057
Tel. (315) 432-0506
1-800-950-0506

# LABORATORY ANALYSIS REPORT

Client: NIXON HARGRAVE
Task Number: 90040927
Location: ROTH BROTHERS

Job Number: GZ024LL
Date Sampled: 6-APR-1990

TCLP METALS

| | | Lab ID: | J8272 | J8279 | J8282 | METHOD BLANK |
|---|---|---|---|---|---|---|
| | | Client ID: | NH-8 | NH-15 | NH-18 | NA |
| | | | NON-TOXIC | NON-TOXIC | NON-TOXIC | |
| Arsenic- LEACHATE | MG/L | | <2 | <2 | <2 | <2 |
| Barium- LEACHATE | | | 4.0 | 2.5 | 3.4 | 2.4 |
| Cadmium- LEACHATE | | | 0.038 | 0.012 | 0.050 | <0.01 |
| Chromium- LEACHATE | | | <0.02 | <0.02 | <0.02 | <0.02 |
| Lead- LEACHATE | | | 1.1 | 0.36 | 0.52 | <0.2 |
| Mercury- LEACHATE | | | <0.002 | <0.002 | <0.002 | <0.002 |
| Selenium- LEACHATE | | | <0.1 | <0.1 | <0.1 | <0.1 |
| Silver- LEACHATE | | | <0.06 | <0.06 | <0.06 | <0.06 |

Method(s): EPA SW846 METHOD 1311
Footnotes:

(<) - Less Than
(>) - Greater Than
NA - Not Applicable
ND - Not Detectable
NS - Not Specified
MG - Milligrams
L - Liters
$M^3$ - Cubic Meter
$MG/M^3$ - Milligrams Per Cubic Meter
PPM - Parts Per Million
UG - Micrograms
NG - Nanograms
BL - Blank

Submitted by: KB, AN, ML, SH, DS
Approved by: Mary Gurthrie
Date: 26-APR-1990

Galson Laboratories

6601 Kirkville Road
E. Syracuse, NY 13057
Tel: (315) 432-0506
1-800-950-0506

# LABORATORY ANALYSIS REPORT

Client: NIXON HARGRAVE
Task Number: 90040927
Location: ROTH BROTHERS

Job Number: GZ024LL
Date Sampled: 6-APR-1990

| | Lab ID: | J8274 | J8275 | J8276 |
|---|---|---|---|---|
| | Client ID: | NH-10 | NH-11 | NH-12 |
| OIL AND GREASE | *MG/KG | 100,000 | 6000 | 5400 |

Method(s): EPA 413.2
Footnotes: * DRY WEIGHT BASIS

(<) - Less Than
(>) - Greater Than
NA - Not Applicable
ND - Not Detectable
NS - Not Specified
MG/KG - Milligram/Kilogram
L - Liters
$M^3$ - Cubic Meter
$MG/M^3$ - Milligrams Per Cubic Meter
PPM - Parts Per Million
UG - Micrograms
NG - Nanograms
BL - Blank

Submitted by: PP
Approved by: SBGalson
Date: 24-APR-1990

Galson Laboratories

6601 Kirkville Road
E. Syracuse, NY 13057
Tel: (315) 432-0506
1-800-950-0506

# LABORATORY ANALYSIS REPORT

Client: NIXON HARGRAVE
Task Number: 90040927
Location: ROTH BROTHERS

Job Number: GZ024LL
Date Sampled: 6-APR-1990

| | | | Lab ID: | J8277 | J8281 |
|---|---|---|---|---|---|
| | | | Client ID: | NH-13 | NH-17 |
| PHENOL | BULK | *MG/KG | | <1 | <1 |

Method(s): EPA 420.1
Footnotes: * DRY WEIGHT BASIS

(<) - Less Than
(>) - Greater Than
NA - Not Applicable
ND - Not Detectable
NS - Not Specified
MG/KG - Milligram/Kilogram
L - Liters
$M^3$ - Cubic Meter
$MG/M^3$ - Milligrams Per Cubic Meter
PPM - Parts Per Million
UG - Micrograms
NG - Nanograms
BL - Blank

Submitted by: PP
Approved by: S.B. Balcomb
Date: 24-APR-1990

Galson Laboratories

6601 Kirkville Road
E. Syracuse, NY 13057
Tel. (315) 432-0506
1-800-950-0506

# LABORATORY ANALYSIS REPORT

Client: NIXON HARGRAVE
Task Number: 90040927
Location: ROTH BROTHERS

Job Number: GZ024LL
Date Sampled: 6-APR-1990

| | | Lab ID: | J8270 | J8283 |
|---|---|---|---|---|
| | | Client ID: | NH-6 | NH-19 |
| OIL AND GREASE | MG/L | | <5 | 19 |

Method(s): EPA 413.2
Footnotes:

(<) - Less Than
(>) - Greater Than
NA - Not Applicable
ND - Not Detectable
NS - Not Specified
MG - Milligrams
L - Liters
$M^3$ - Cubic Meter
$MG/M^3$ - Milligrams Per Cubic Meter
PPM - Parts Per Million
UG - Micrograms
NG - Nanograms
BL - Blank

Submitted by: PP
Approved by: S Bateman
Date: 24-APR-1990

Galson Laboratories

6601 Kirkville Road
E. Syracuse, NY 13057
Tel: (315) 432-0506
1-800-950-0506

# LABORATORY ANALYSIS REPORT

Client: NIXON HARGRAVE
Task Number: 90040927
Location: ROTH BROTHERS

Job Number: GZ024LL
Date Sampled: 6-APR-1990

| | | | Lab ID: | J8265 | J8266 | J8267 | J8268 | J8269 |
|---|---|---|---|---|---|---|---|---|
| | | | Client ID: | NH-1 | NH-2 | NH-3 | NH-4 | NH-5 |
| ARSENIC | BULK | *MG/KG | | 1.2 | 1.2 | 1.0 | 2.8 | 9.2 |
| BARIUM | | | | 160 | 190 | 550 | 110 | 190 |
| CHROMIUM | | | | 55 | 80 | 91 | 120 | 43 |
| LEAD | | | | 1600 | 1400 | 2800 | 5400 | 7600 |
| MERCURY | | | | 2.3 | 1.2 | 0.45 | 1.5 | 0.81 |
| SELENIUM | | | | <20 | <20 | <20 | <20 | <40 |
| SILVER | | | | 1.9 | 2.9 | 2.8 | 3.7 | 4.3 |
| CADMIUM | | | | 13 | 13 | 11 | 11 | 40 |

Method(s): EPA SW846 METHOD 3051
Footnotes: * DRY WEIGHT BASIS

(<) - Less Than
(>) - Greater Than
NA - Not Applicable
ND - Not Detectable
NS - Not Specified
MG/KG - Milligram/Kilogram
L - Liters
$M^3$ - Cubic Meter
$MG/M^3$ - Milligrams Per Cubic Meter
PPM - Parts Per Million
UG - Micrograms
NG - Nanograms
BL - Blank

Submitted by: ML, AN, KB, SH
Approved by: Mary D Urthaw
Date: 26-APR-1990

Galson Laboratories

6601 Kirkville Road
E. Syracuse, NY 13057
Tel: (315) 432-0506
1-800-950-0506

# LABORATORY ANALYSIS REPORT

Client: NIXON HARGRAVE
Task Number: 90040927
Location: ROTH BROTHERS

Job Number: GZ024LL
Date Sampled: 6-APR-1990

| | Lab ID: | J8271 | J8272 | J8279 | J8282 | METHOD BLANK |
|---|---|---|---|---|---|---|
| | Client ID: | NH-7 | NH-8 | NH-15 | NH-18 | NA |
| ARSENIC | BULK *MG/KG | 3.2 | 7.3 | <0.3 | 0.48 | <0.2 |
| BARIUM | | 160 | 170 | 9.9 | 65 | <0.5 |
| CHROMIUM | | 170 | 54 | 16 | 120 | <0.5 |
| LEAD | | 220,000 | 7300 | 120 | 1300 | <5 |
| MERCURY | | 0.24 | 1.1 | 0.14 | 0.74 | <0.1 |
| SELENIUM | | <20 | <50 | <30 | <20 | <0.2 |
| SILVER | | 13 | 3.5 | 0.66 | 2.5 | <2 |
| CADMIUM | | 260 | 34 | 0.49 | 8.5 | <0.2 |

Method(s): EPA SW846 METHOD 3051
Footnotes: * DRY WEIGHT BASIS

(<) - Less Than
(>) - Greater Than
NA - Not Applicable
ND - Not Detectable
NS - Not Specified
MG/KG - Milligrams/Kilograms
L - Liters
$M^3$ - Cubic Meter
$MG/M^3$ - Milligrams Per Cubic Meter
PPM - Parts Per Million
UG - Micrograms
NG - Nanograms
BL - Blank

Submitted by: ML, AN, KB, SH
Approved by: Mary Lunthead
Date: 26-APR-1990

Galson Laboratories

6601 Kirkville Road
E. Syracuse, NY 13057
Tel: (315) 432-0506
1-800-950-0506

# LABORATORY ANALYSIS REPORT

Client: NIXON HARGRAVE
Task Number: 90040927
Location: ROTH BROTHERS

Job Number: GZ024LL
Date Sampled: 6-APR-1990

## POLYCHLORINATED BIPHENYLS - SOIL

| | | Lab ID: | J8269 | J8272 | METHOD |
|---|---|---|---|---|---|
| | | Client ID: | NH-5 | NH-8 | BLANK |
| AROLCLOR 1016/1242 | *UG/KG | | 6900 | 4000 | <33 |
| AROCLOR 1221 | | | <1300 | <1500 | <33 |
| AROCLOR 1232 | | | <1300 | <1500 | <33 |
| AROCLOR 1248 | | | <1300 | <1500 | <33 |
| AROCLOR 1254 | | | 1600 | <1500 | <33 |
| AROCLOR 1260 | | | <1300 | <1500 | <33 |
| MOISTURE | % | | 47 | 55 | NA |

% - Percent
(<) - Less Than
(>) - Greater Than
NA - Not Applicable
ND - Not Detectable
NS - Not Specified
MG - Milligrams
L - Liters
$M^3$ - Cubic Meter
UG/KG - Micrograms/Kilogram

Method(s): SW846/3550/8080
Footnotes: * DRY WEIGHT

Submitted by: KN
Approved by: SW
Date: 26-APR-1990

Galson Technical Services

Galson Technical Services Inc.
6601 Kirkville Road
E. Syracuse, NY 13057
Tel: (315) 432-0506
FAX: (315) 437-0509

May 10, 1990

Mr. Larry Blue
Nixon, Hargrave, Devans & Doyle
Attorneys and Counselors at Law
Lincoln First Tower
P.O. Box 1051
Rochester, New York 14603

RE: ENVIRONMENTAL SAMPLING AND ANALYTICAL RESULTS
ROTH BROTHERS SMELTING, SYRACUSE, NEW YORK
GALSON PROJECT NO. GZ-025

Dear Mr. Blue:

Attached please find the laboratory results from the semi-volatile analyses for sample locations NH-1; NH-2; NH-9; NH-14; and NH-16. These sample locations were noted in our previous letter report (May 8, 1990).

Our slight delay in forwarding these semi-volatile results was due to efforts expended to confirm the detection of isopherone in NH-14. Though, as requested, we have provided no evaluation of these results, the detection of isopherone seemed unusual based upon our previous experience.

If there are any questions, please feel free to call.

Sincerely,

GALSON TECHNICAL SERVICES, INC.

Thomas W. Moran

Thomas W. Moran, P.E.
Senior Environmental Engineer

TWM/sn

Attachment: One copy of the GC/MS Sample Report

02/GZ-025 051090

Galson Laboratories

GC/MS NARRATIVE

NIXON HARGRAVE
90040927

The following package contains data relating to the samples received for analysis on April 9, 1990 :

| Client No. | Galson ID | Analysis |
|---|---|---|
| NH-1 | J8265 | semi-volatiles |
| NH-2 | J8266 | |
| NH-9 | J8273 | |
| NH-14 | J8278 | |
| NH-16 | J8280 | |

The samples were extracted following EPA SW-846 method 3550 (sonication) and analyzed following method 8270 for semi-volatile compounds. Quality control followed EPA-CLP guidelines (SOW 2/88,rev. 4/89).

Three samples, NH-1, NH-2, and NH-3 were found to contain both target and non-target compounds at levels high enough to require dilution. Samples NH-14 and NH-16 required no dilution.

Recovery for one surrogate was outside control limits for sample NH-2. Matrix spike recovery for one compound and relative percent difference for two compounds were found to be outside recommended but within acceptable limits.

All concentrations are reported on a dry weight basis.

GC/MS Manager

GC/MS

SEMI-VOLATILES

SAMPLE DATA

REVIEWED: 

LAURIE JOHNSTON

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
PAGE 1

SAMPLE

NH-1

Lab Name: GALSON LABORATORIES

Client: NIXON HARGRAVE (GZ024LL)

Task No.: 90040927

Matrix: (soil/water) SOIL

Lab Sample ID: J8265

Sample wt/vol: 30.09g

Lab File ID: >AC978::D3

Level: (low/med) LOW

Date Received: 04/09/90

% Moisture: not dec.: 12

Date Extracted:04/19/90

Extraction:(SepF/Cont/Sonc) SONC

Date Analyzed:04/27/90

GPC Cleanup: (Y/N) N

Dilution Factor: 10.00

| CAS No. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 3800. | U D |
| 111-44-4 | bis(2-Chloroethyl)ether | 3800. | U D |
| 95-57-8 | 2-Chlorophenol | 3800. | U D |
| 541-73-1 | 1,3-Dichlorobenzene | 3800. | U D |
| 106-46-7 | 1,4-Dichlorobenzene | 3800. | U D |
| 100-51-6 | Benzyl Alcohol | 3800. | U D |
| 95-50-1 | 1,2-Dichlorobenzene | 3800. | U D |
| 95-48-7 | 2-Methylphenol | 3800. | U D |
| 39638-32-9 | bis(2-Chloroisopropyl)ether | 3800. | U D |
| 106-44-5 | 4-Methylphenol | 3800. | U D |
| 621-64-7 | N-Nitroso-Di-n-propylamine | 3800. | U D |
| 67-72-1 | Hexachloroethane | 3800. | U D |
| 98-95-3 | Nitrobenzene | 3800. | U D |
| 78-59-1 | Isophorone | 3800. | U D |
| 88-75-5 | 2-Nitrophenol | 3800. | U D |
| 105-67-9 | 2,4-Dimethylphenol | 3800. | U D |
| 65-85-0 | Benzoic Acid | 3800. | U D |
| 111-91-1 | bis(2-Chloroethoxy)methane | 3800. | U D |
| 120-83-2 | 2,4-Dichlorophenol | 3800. | U D |
| 120-82-1 | 1,2,4-Trichlorobenzene | 3800. | U D |
| 91-20-3 | Naphthalene | 3800. | U D |
| 106-47-8 | 4-Chloroaniline | 3800. | U D |
| 87-68-3 | Hexachlorobutadiene | 3800. | U D |
| 59-50-7 | 4-Chloro-3-methylphenol | 3800. | U D |
| 91-57-6 | 2-Methylnaphthalene | 3800. | U D |
| 77-47-4 | Hexachlorocyclopentadiene | 3800. | U D |
| 88-06-2 | 2,4,6-Trichlorophenol | 3800. | U D |
| 95-95-4 | 2,4,5-Trichlorophenol | 19000. | U D |
| 91-58-7 | 2-Chloronaphthalene | 3800. | U D |

Qualifiers:

U- Undetected. Value is the quantitation limit for that compound.
J- Estimated value. Value is below the compound quantitation limit.
B- Compound also found in blank.
D- Diluted value.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
PAGE 2

SAMPLE: NH-1

Lab Name: GALSON LABORATORIES

Client: NIXON HARGRAVE (GZ024LL)

Task No.: 90040927

Matrix: (soil/water) SOIL

Lab Sample ID: J8265

Sample wt/vol: 30.09g

Lab File ID: >AC978::D3

Level: (low/med) LOW

Date Received: 04/09/90

% Moisture: not dec.: 12

Date Extracted:04/19/90

Extraction:(SepF/Cont/Sonc) SONC

Date Analyzed:04/27/90

GPC Cleanup: (Y/N) N

Dilution Factor: 10.00

| CAS No. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg | Q |
|---|---|---|---|
| 88-74-4 | 2-Nitroaniline | 19000. | U D |
| 131-11-3 | Dimethylphthalate | 3800. | U D |
| 208-96-8 | Acenaphthylene | 3800. | U D |
| 99-09-2 | 3-Nitroaniline | 19000. | U D |
| 83-32-9 | Acenaphthene | 3800. | U D |
| 51-28-5 | 2,4-Dinitrophenol | 19000. | U D |
| 100-02-7 | 4-Nitrophenol | 19000. | U D |
| 132-64-9 | Dibenzofuran | 3800. | U D |
| 121-14-2 | 2,4-Dinitrotoluene | 3800. | U D |
| 606-20-2 | 2,6-Dinitrotoluene | 3800. | U D |
| 84-66-2 | Diethylphthalate | 3800. | U D |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 3800. | U D |
| 86-73-7 | Fluorene | 3800. | U D |
| 100-01-6 | 4-Nitroaniline | 19000. | U D |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 19000. | U D |
| 86-30-6 | N-Nitrosodiphenylamine | 3800. | U D |
| 101-55-3 | 4-Bromophenyl-phenylether | 3800. | U D |
| 118-74-1 | Hexachlorobenzene | 3800. | U D |
| 87-86-5 | Pentachlorophenol | 19000. | U D |
| 85-01-8 | Phenanthrene | 850. | J D |
| 120-12-7 | Anthracene | 3800. | U D |
| 84-74-2 | Di-n-Butylphthalate | 570. | J D |
| 206-44-0 | Fluoranthene | 880. | J D |
| 129-00-0 | Pyrene | 1100. | J D |
| 85-68-7 | Butylbenzylphthalate | 1800. | J D |
| 91-94-1 | 3,3'-Dichlorobenzidine | 7600. | U D |
| 56-55-3 | Benzo(a)Anthracene | 440. | J D |
| 117-81-7 | Bis(2-Ethylhexyl)Phthalate | 12000. | D |

Qualifiers:

U- Undetected. Value is the quantitation limit for that compound.
J- Estimated value. Value is below the compound quantitation limit.
B- Compound also found in blank.
D- Diluted value.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
PAGE 3

SAMPLE

NH-1

Lab Name: GALSON LABORATORIES

Client: NIXON HARGRAVE (GZ024LL)

Task No.: 90040927

Matrix: (soil/water) SOIL

Lab Sample ID: J8265

Sample wt/vol: 30.09g

Lab File ID: >AC978::D3

Level: (low/med) LOW

Date Received: 04/09/90

% Moisture: not dec.: 12

Date Extracted:04/19/90

Extraction:(SepF/Cont/Sonc) SONC

Date Analyzed:04/27/90

GPC Cleanup: (Y/N) N

Dilution Factor: 10.00

| CAS No. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg | Q |
|---|---|---|---|
| 218-01-9 | Chrysene | 690. | J D |
| 117-84-0 | Di-n-octylphthalate | 1100. | J D |
| 205-99-2 | Benzo(b)Fluoranthene | 3800. | U D |
| 207-08-9 | Benzo(k)Fluoranthene | 910. | J D |
| 50-32-8 | Benzo(a)Pyrene | 740. | J D |
| 193-39-5 | Indeno(1,2,3-cd)Pyrene | 3800. | U D |
| 53-70-3 | Dibenzo(a,h)Anthracene | 3800. | U D |
| 191-24-2 | Benzo(g,h,i)Perylene | 3800. | U D |

Qualifiers:

U- Undetected. Value is the quantitation limit for that compound.
J- Estimated value. Value is below the compound quantitation limit.
B- Compound also found in blank.
D- Diluted value.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
PAGE 1

SAMPLE

NH-2

Lab Name: GALSON LABORATORIES

Client: NIXON HARGRAVE (GZ024LL)

Task No.: 90040927

Matrix: (soil/water) SOIL

Lab Sample ID: J8266

Sample wt/vol: 30.00g

Lab File ID: >AC979::D3

Level: (low/med) LOW

Date Received: 04/09/90

% Moisture: not dec.: 20

Date Extracted:04/19/90

Extraction:(SepF/Cont/Sonc) SONC

Date Analyzed:04/27/90

GPC Cleanup: (Y/N) N

Dilution Factor: 5.00

| CAS No. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 2100. | U D |
| 111-44-4 | bis(2-Chloroethyl)ether | 2100. | U D |
| 95-57-8 | 2-Chlorophenol | 2100. | U D |
| 541-73-1 | 1,3-Dichlorobenzene | 2100. | U D |
| 106-46-7 | 1,4-Dichlorobenzene | 2100. | U D |
| 100-51-6 | Benzyl Alcohol | 2100. | U D |
| 95-50-1 | 1,2-Dichlorobenzene | 2100. | U D |
| 95-48-7 | 2-Methylphenol | 2100. | U D |
| 39638-32-9 | bis(2-Chloroisopropyl)ether | 2100. | U D |
| 106-44-5 | 4-Methylphenol | 2100. | U D |
| 621-64-7 | N-Nitroso-Di-n-propylamine | 2100. | U D |
| 67-72-1 | Hexachloroethane | 2100. | U D |
| 98-95-3 | Nitrobenzene | 2100. | U D |
| 78-59-1 | Isophorone | 2100. | U D |
| 88-75-5 | 2-Nitrophenol | 2100. | U D |
| 105-67-9 | 2,4-Dimethylphenol | 2100. | U D |
| 65-85-0 | Benzoic Acid | 2100. | U D |
| 111-91-1 | bis(2-Chloroethoxy)methane | 2100. | U D |
| 120-83-2 | 2,4-Dichlorophenol | 2100. | U D |
| 120-82-1 | 1,2,4-Trichlorobenzene | 2100. | U D |
| 91-20-3 | Naphthalene | 66. | J D |
| 106-47-8 | 4-Chloroaniline | 2100. | U D |
| 87-68-3 | Hexachlorobutadiene | 2100. | U D |
| 59-50-7 | 4-Chloro-3-methylphenol | 2100. | U D |
| 91-57-6 | 2-Methylnaphthalene | 62. | J D |
| 77-47-4 | Hexachlorocyclopentadiene | 2100. | U D |
| 88-06-2 | 2,4,6-Trichlorophenol | 2100. | U D |
| 95-95-4 | 2,4,5-Trichlorophenol | 10000. | U D |
| 91-58-7 | 2-Chloronaphthalene | 2100. | U D |

Qualifiers:

U- Undetected. Value is the quantitation limit for that compound.
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D- Diluted value.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
PAGE 2

SAMPLE

NH-2

Lab Name: GALSON LABORATORIES

Client: NIXON HARGRAVE (GZ024LL)

Task No.: 90040927

Matrix: (soil/water) SOIL

Lab Sample ID: J8266

Sample wt/vol: 30.00g

Lab File ID: >AC979::D3

Level: (low/med) LOW

Date Received: 04/09/90

% Moisture: not dec.: 20

Date Extracted:04/19/90

Extraction:(SepF/Cont/Sonc) SONC

Date Analyzed:04/27/90

GPC Cleanup: (Y/N) N

Dilution Factor: 5.00

| CAS No. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg | Q |
|---|---|---|---|
| 88-74-4 | 2-Nitroaniline | 10000. | U D |
| 131-11-3 | Dimethylphthalate | 160. | J D |
| 208-96-8 | Acenaphthylene | 2100. | U D |
| 99-09-2 | 3-Nitroaniline | 10000. | U D |
| 83-32-9 | Acenaphthene | 98. | J D |
| 51-28-5 | 2,4-Dinitrophenol | 10000. | U D |
| 100-02-7 | 4-Nitrophenol | 10000. | U D |
| 132-64-9 | Dibenzofuran | 58. | J D |
| 121-14-2 | 2,4-Dinitrotoluene | 2100. | U D |
| 606-20-2 | 2,6-Dinitrotoluene | 2100. | U D |
| 84-66-2 | Diethylphthalate | 2100. | U D |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 2100. | U D |
| 86-73-7 | Fluorene | 110. | J D |
| 100-01-6 | 4-Nitroaniline | 10000. | U D |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 10000. | U D |
| 86-30-6 | N-Nitrosodiphenylamine | 2100. | U D |
| 101-55-3 | 4-Bromophenyl-phenylether | 2100. | U D |
| 118-74-1 | Hexachlorobenzene | 2100. | U D |
| 87-86-5 | Pentachlorophenol | 10000. | U D |
| 85-01-8 | Phenanthrene | 960. | J D |
| 120-12-7 | Anthracene | 180. | J D |
| 84-74-2 | Di-n-Butylphthalate | 860. | J D |
| 206-44-0 | Fluoranthene | 730. | J D |
| 129-00-0 | Pyrene | 1200. | J D |
| 85-68-7 | Butylbenzylphthalate | 3200. | D |
| 91-94-1 | 3,3'-Dichlorobenzidine | 4200. | U D |
| 56-55-3 | Benzo(a)Anthracene | 520. | J D |
| 117-81-7 | Bis(2-Ethylhexyl)Phthalate | 25000. | D |

Qualifiers:

U- Undetected. Value is the quantitation limit for that compound.
J- Estimated value. Value is below the compound quantitation limit.
B- Compound also found in blank.
D- Diluted value.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
PAGE 3

SAMPLE

| NH-2 |

Lab Name: GALSON LABORATORIES

Client: NIXON HARGRAVE (GZ024LL)

Task No.: 90040927

Matrix: (soil/water) SOIL

Lab Sample ID: J8266

Sample wt/vol: 30.00g

Lab File ID: >AC979::D3

Level: (low/med) LOW

Date Received: 04/09/90

% Moisture: not dec.: 20

Date Extracted:04/19/90

Extraction:(SepF/Cont/Sonc) SONC

Date Analyzed:04/27/90

GPC Cleanup: (Y/N) N

Dilution Factor: 5.00

| CAS No. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg | Q |
|---|---|---|---|
| 218-01-9 | Chrysene | 740. | J D |
| 117-84-0 | Di-n-octylphthalate | 6600. | D |
| 205-99-2 | Benzo(b)Fluoranthene | 450. | J D |
| 207-08-9 | Benzo(k)Fluoranthene | 560. | J D |
| 50-32-8 | Benzo(a)Pyrene | 2100. | U D |
| 193-39-5 | Indeno(1,2,3-cd)Pyrene | 2100. | U D |
| 53-70-3 | Dibenzo(a,h)Anthracene | 2100. | U D |
| 191-24-2 | Benzo(g,h,i)Perylene | 2100. | U D |

Qualifiers:

U- Undetected. Value is the quantitation limit for that compound.
J- Estimated value. Value is below the compound quantitation limit.
B- Compound also found in blank.
D- Diluted value.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
PAGE 1

SAMPLE

NH-9

Lab Name: GALSON LABORATORIES

Client: NIXON HARGRAVE (GZ024LL)

Task No.: 90040927

Matrix: (soil/water) SOIL

Lab Sample ID: J8273

Sample wt/vol: 30.03g

Lab File ID: >AC980::D3

Level: (low/med) LOW

Date Received: 04/09/90

% Moisture: not dec.: 51

Date Extracted:04/19/90

Extraction:(SepF/Cont/Sonc) SONC

Date Analyzed:04/27/90

GPC Cleanup: (Y/N) N

Dilution Factor: 100.00

| CAS No. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 68000. | U D |
| 111-44-4 | bis(2-Chloroethyl)ether | 68000. | U D |
| 95-57-8 | 2-Chlorophenol | 68000. | U D |
| 541-73-1 | 1,3-Dichlorobenzene | 68000. | U D |
| 106-46-7 | 1,4-Dichlorobenzene | 68000. | U D |
| 100-51-6 | Benzyl Alcohol | 68000. | U D |
| 95-50-1 | 1,2-Dichlorobenzene | 68000. | U D |
| 95-48-7 | 2-Methylphenol | 68000. | U D |
| 39638-32-9 | bis(2-Chloroisopropyl)ether | 68000. | U D |
| 106-44-5 | 4-Methylphenol | 68000. | U D |
| 621-64-7 | N-Nitroso-Di-n-propylamine | 68000. | U D |
| 67-72-1 | Hexachloroethane | 68000. | U D |
| 98-95-3 | Nitrobenzene | 68000. | U D |
| 78-59-1 | Isophorone | 68000. | U D |
| 88-75-5 | 2-Nitrophenol | 68000. | U D |
| 105-67-9 | 2,4-Dimethylphenol | 68000. | U D |
| 65-85-0 | Benzoic Acid | 68000. | U D |
| 111-91-1 | bis(2-Chloroethoxy)methane | 68000. | U D |
| 120-83-2 | 2,4-Dichlorophenol | 68000. | U D |
| 120-82-1 | 1,2,4-Trichlorobenzene | 68000. | U D |
| 91-20-3 | Naphthalene | 68000. | U D |
| 106-47-8 | 4-Chloroaniline | 68000. | U D |
| 87-68-3 | Hexachlorobutadiene | 68000. | U D |
| 59-50-7 | 4-Chloro-3-methylphenol | 68000. | U D |
| 91-57-6 | 2-Methylnaphthalene | 68000. | U D |
| 77-47-4 | Hexachlorocyclopentadiene | 68000. | U D |
| 88-06-2 | 2,4,6-Trichlorophenol | 68000. | U D |
| 95-95-4 | 2,4,5-Trichlorophenol | 340000. | U D |
| 91-58-7 | 2-Chloronaphthalene | 68000. | U D |

Qualifiers:

U- Undetected. Value is the quantitation limit for that compound.
J- Estimated value. Value is below the compound quantitation limit.
B- Compound also found in blank.
D- Diluted value.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
PAGE 2

SAMPLE: NH-9

Lab Name: GALSON LABORATORIES

Client: NIXON HARGRAVE (GZ024LL) — Task No.: 90040927

Matrix: (soil/water) SOIL — Lab Sample ID: J8273

Sample wt/vol: 30.03g — Lab File ID: >AC980::D3

Level: (low/med) LOW — Date Received: 04/09/90

% Moisture: not dec.: 51 — Date Extracted: 04/19/90

Extraction: (SepF/Cont/Sonc) SONC — Date Analyzed: 04/27/90

GPC Cleanup: (Y/N) N — Dilution Factor: 100.00

| CAS No. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg | Q |
|---|---|---|---|
| 88-74-4 | 2-Nitroaniline | 340000. | U D |
| 131-11-3 | Dimethylphthalate | 68000. | U D |
| 208-96-8 | Acenaphthylene | 68000. | U D |
| 99-09-2 | 3-Nitroaniline | 340000. | U D |
| 83-32-9 | Acenaphthene | 68000. | U D |
| 51-28-5 | 2,4-Dinitrophenol | 340000. | U D |
| 100-02-7 | 4-Nitrophenol | 340000. | U D |
| 132-64-9 | Dibenzofuran | 68000. | U D |
| 121-14-2 | 2,4-Dinitrotoluene | 68000. | U D |
| 606-20-2 | 2,6-Dinitrotoluene | 68000. | U D |
| 84-66-2 | Diethylphthalate | 68000. | U D |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 68000. | U D |
| 86-73-7 | Fluorene | 68000. | U D |
| 100-01-6 | 4-Nitroaniline | 340000. | U D |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 340000. | U D |
| 86-30-6 | N-Nitrosodiphenylamine | 68000. | U D |
| 101-55-3 | 4-Bromophenyl-phenylether | 68000. | U D |
| 118-74-1 | Hexachlorobenzene | 68000. | U D |
| 87-86-5 | Pentachlorophenol | 340000. | U D |
| 85-01-8 | Phenanthrene | 27000. | J D |
| 120-12-7 | Anthracene | 5900. | J D |
| 84-74-2 | Di-n-Butylphthalate | 68000. | U D |
| 206-44-0 | Fluoranthene | 22000. | J D |
| 129-00-0 | Pyrene | 38000. | J D |
| 85-68-7 | Butylbenzylphthalate | 68000. | U D |
| 91-94-1 | 3,3'-Dichlorobenzidine | 136000. | U D |
| 56-55-3 | Benzo(a)Anthracene | 17000. | J D |
| 117-81-7 | Bis(2-Ethylhexyl)Phthalate | 21000. | J D |

Qualifiers:

U- Undetected. Value is the quantitation limit for that compound.
J- Estimated value. Value is below the compound quantitation limit.
B- Compound also found in blank.
D- Diluted value.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
PAGE 3

SAMPLE

| NH-9 |
|---|

Lab Name: GALSON LABORATORIES

Client: NIXON HARGRAVE (GZ024LL)

Task No.: 90040927

Matrix: (soil/water) SOIL

Lab Sample ID: J8273

Sample wt/vol: 30.03g

Lab File ID: >AC980::D3

Level: (low/med) LOW

Date Received: 04/09/90

% Moisture: not dec.: 51

Date Extracted:04/19/90

Extraction:(SepF/Cont/Sonc) SONC

Date Analyzed:04/27/90

GPC Cleanup: (Y/N) N

Dilution Factor: 100.00

| CAS No. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg | Q |
|---|---|---|---|
| 218-01-9 | Chrysene | 19000. | J D |
| 117-84-0 | Di-n-octylphthalate | 68000. | U D |
| 205-99-2 | Benzo(b)Fluoranthene | 26000. | J D |
| 207-08-9 | Benzo(k)Fluoranthene | 68000. | U D |
| 50-32-8 | Benzo(a)Pyrene | 68000. | U D |
| 193-39-5 | Indeno(1,2,3-cd)Pyrene | 68000. | U D |
| 53-70-3 | Dibenzo(a,h)Anthracene | 68000. | U D |
| 191-24-2 | Benzo(g,h,i)Perylene | 68000. | U D |

Qualifiers:

U- Undetected. Value is the quantitation limit for that compound.
J- Estimated value. Value is below the compound quantitation limit.
B- Compound also found in blank.
D- Diluted value.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
PAGE 1

SAMPLE

NH-14

Lab Name: GALSON LABORATORIES

Client: NIXON HARGRAVE (GZ024LL)

Task No.: 90040927

Matrix: (soil/water) SOIL

Lab Sample ID: J8278

Sample wt/vol: 30.00g

Lab File ID: >AC959::D1

Level: (low/med) LOW

Date Received: 04/09/90

% Moisture: not dec.: 30

Date Extracted:04/19/90

Extraction:(SepF/Cont/Sonc) SONC

Date Analyzed:04/26/90

GPC Cleanup: (Y/N) N

Dilution Factor: 1.00

| CAS No. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 460. | J |
| 111-44-4 | bis(2-Chloroethyl)ether | 480. | U |
| 95-57-8 | 2-Chlorophenol | 480. | U |
| 541-73-1 | 1,3-Dichlorobenzene | 480. | U |
| 106-46-7 | 1,4-Dichlorobenzene | 480. | U |
| 100-51-6 | Benzyl Alcohol | 480. | U |
| 95-50-1 | 1,2-Dichlorobenzene | 480. | U |
| 95-48-7 | 2-Methylphenol | 480. | U |
| 39638-32-9 | bis(2-Chloroisopropyl)ether | 480. | U |
| 106-44-5 | 4-Methylphenol | 480. | U |
| 621-64-7 | N-Nitroso-Di-n-propylamine | 480. | U |
| 67-72-1 | Hexachloroethane | 480. | U |
| 98-95-3 | Nitrobenzene | 480. | U |
| 78-59-1 | Isophorone | 11000. | |
| 88-75-5 | 2-Nitrophenol | 480. | U |
| 105-67-9 | 2,4-Dimethylphenol | 82. | J |
| 65-85-0 | Benzoic Acid | 480. | U |
| 111-91-1 | bis(2-Chloroethoxy)methane | 480. | U |
| 120-83-2 | 2,4-Dichlorophenol | 480. | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 480. | U |
| 91-20-3 | Naphthalene | 170. | J |
| 106-47-8 | 4-Chloroaniline | 480. | U |
| 87-68-3 | Hexachlorobutadiene | 480. | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 480. | U |
| 91-57-6 | 2-Methylnaphthalene | 770. | |
| 77-47-4 | Hexachlorocyclopentadiene | 480. | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 480. | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 2400. | U |
| 91-58-7 | 2-Chloronaphthalene | 480. | U |

Qualifiers:

U- Undetected. Value is the quantitation limit for that compound.
J- Estimated value. Value is below the compound quantitation limit.
B- Compound also found in blank.
D- Diluted value.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
PAGE 2

SAMPLE

NH-14

Lab Name: GALSON LABORATORIES

Client: NIXON HARGRAVE (GZ024LL)

Task No.: 90040927

Matrix: (soil/water) SOIL

Lab Sample ID: J8278

Sample wt/vol: 30.00g

Lab File ID: >AC959::D1

Level: (low/med) LOW

Date Received: 04/09/90

% Moisture: not dec.: 30

Date Extracted:04/19/90

Extraction:(SepF/Cont/Sonc) SONC

Date Analyzed:04/26/90

GPC Cleanup: (Y/N) N

Dilution Factor: 1.00

| CAS No. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg | Q |
|---|---|---|---|
| 88-74-4 | 2-Nitroaniline | 2400. | U |
| 131-11-3 | Dimethylphthalate | 480. | U |
| 208-96-8 | Acenaphthylene | 480. | U |
| 99-09-2 | 3-Nitroaniline | 2400. | U |
| 83-32-9 | Acenaphthene | 480. | U |
| 51-28-5 | 2,4-Dinitrophenol | 2400. | U |
| 100-02-7 | 4-Nitrophenol | 2400. | U |
| 132-64-9 | Dibenzofuran | 480. | U |
| 121-14-2 | 2,4-Dinitrotoluene | 480. | U |
| 606-20-2 | 2,6-Dinitrotoluene | 480. | U |
| 84-66-2 | Diethylphthalate | 480. | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 480. | U |
| 86-73-7 | Fluorene | 48. | J |
| 100-01-6 | 4-Nitroaniline | 2400. | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 2400. | U |
| 86-30-6 | N-Nitrosodiphenylamine | 480. | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 480. | U |
| 118-74-1 | Hexachlorobenzene | 480. | U |
| 87-86-5 | Pentachlorophenol | 2400. | U |
| 85-01-8 | Phenanthrene | 230. | J |
| 120-12-7 | Anthracene | 480. | U |
| 84-74-2 | Di-n-Butylphthalate | 820. | |
| 206-44-0 | Fluoranthene | 93. | J |
| 129-00-0 | Pyrene | 230. | J |
| 85-68-7 | Butylbenzylphthalate | 480. | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 950. | U |
| 56-55-3 | Benzo(a)Anthracene | 72. | J |
| 117-81-7 | Bis(2-Ethylhexyl)Phthalate | 89. | J |

Qualifiers:

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B- Compound also found in blank.
D- Diluted value.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
PAGE 3

SAMPLE

NH-14

Lab Name: GALSON LABORATORIES

Client: NIXON HARGRAVE (GZ024LL)

Task No.: 90040927

Matrix: (soil/water) SOIL

Lab Sample ID: J8278

Sample wt/vol: 30.00g

Lab File ID: >AC959::D1

Level: (low/med) LOW

Date Received: 04/09/90

% Moisture: not dec.: 30

Date Extracted:04/19/90

Extraction:(SepF/Cont/Sonc) SONC

Date Analyzed:04/26/90

GPC Cleanup: (Y/N) N

Dilution Factor: 1.00

| CAS No. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg | Q |
|---|---|---|---|
| 218-01-9 | Chrysene | 95. | J |
| 117-84-0 | Di-n-octylphthalate | 69. | J |
| 205-99-2 | Benzo(b)Fluoranthene | 480. | U |
| 207-08-9 | Benzo(k)Fluoranthene | 480. | U |
| 50-32-8 | Benzo(a)Pyrene | 480. | U |
| 193-39-5 | Indeno(1,2,3-cd)Pyrene | 480. | U |
| 53-70-3 | Dibenzo(a,h)Anthracene | 480. | U |
| 191-24-2 | Benzo(g,h,i)Perylene | 480. | U |

Qualifiers:

U- Undetected. Value is the quantitation limit for that compound.
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D- Diluted value.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
PAGE 1

SAMPLE

NH-16

Lab Name: GALSON LABORATORIES

Client: NIXON HARGRAVE (GZ024LL)

Matrix: (soil/water) SOIL

Sample wt/vol: 29.98g

Level: (low/med) LOW

% Moisture: not dec.: 26

Extraction:(SepF/Cont/Sonc) SONC

GPC Cleanup: (Y/N) N

Task No.: 90040927

Lab Sample ID: J8280

Lab File ID: >AC960::D1

Date Received: 04/09/90

Date Extracted:04/19/90

Date Analyzed:04/26/90

Dilution Factor: 1.00

| CAS No. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 450. | U |
| 111-44-4 | bis(2-Chloroethyl)ether | 450. | U |
| 95-57-8 | 2-Chlorophenol | 450. | U |
| 541-73-1 | 1,3-Dichlorobenzene | 450. | U |
| 106-46-7 | 1,4-Dichlorobenzene | 450. | U |
| 100-51-6 | Benzyl Alcohol | 450. | U |
| 95-50-1 | 1,2-Dichlorobenzene | 450. | U |
| 95-48-7 | 2-Methylphenol | 450. | U |
| 39638-32-9 | bis(2-Chloroisopropyl)ether | 450. | U |
| 106-44-5 | 4-Methylphenol | 450. | U |
| 621-64-7 | N-Nitroso-Di-n-propylamine | 450. | U |
| 67-72-1 | Hexachloroethane | 450. | U |
| 98-95-3 | Nitrobenzene | 450. | U |
| 78-59-1 | Isophorone | 43. | J |
| 88-75-5 | 2-Nitrophenol | 450. | U |
| 105-67-9 | 2,4-Dimethylphenol | 450. | U |
| 65-85-0 | Benzoic Acid | 450. | U |
| 111-91-1 | bis(2-Chloroethoxy)methane | 450. | U |
| 120-83-2 | 2,4-Dichlorophenol | 450. | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 450. | U |
| 91-20-3 | Naphthalene | 23. | J |
| 106-47-8 | 4-Chloroaniline | 450. | U |
| 87-68-3 | Hexachlorobutadiene | 450. | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 450. | U |
| 91-57-6 | 2-Methylnaphthalene | 32. | J |
| 77-47-4 | Hexachlorocyclopentadiene | 450. | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 450. | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 2300. | U |
| 91-58-7 | 2-Chloronaphthalene | 450. | U |

Qualifiers:

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D- Diluted value.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
PAGE 2

SAMPLE

NH-16

Lab Name: GALSON LABORATORIES

Client: NIXON HARGRAVE (GZ024LL)

Task No.: 90040927

Matrix: (soil/water) SOIL

Lab Sample ID: J8280

Sample wt/vol: 29.98g

Lab File ID: >AC960::D1

Level: (low/med) LOW

Date Received: 04/09/90

% Moisture: not dec.: 26

Date Extracted:04/19/90

Extraction:(SepF/Cont/Sonc) SONC

Date Analyzed:04/26/90

GPC Cleanup: (Y/N) N

Dilution Factor: 1.00

| CAS No. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg | Q |
|---|---|---|---|
| 88-74-4 | 2-Nitroaniline | 2300. | U |
| 131-11-3 | Dimethylphthalate | 450. | U |
| 208-96-8 | Acenaphthylene | 450. | U |
| 99-09-2 | 3-Nitroaniline | 2300. | U |
| 83-32-9 | Acenaphthene | 450. | U |
| 51-28-5 | 2,4-Dinitrophenol | 2300. | U |
| 100-02-7 | 4-Nitrophenol | 2300. | U |
| 132-64-9 | Dibenzofuran | 28. | J |
| 121-14-2 | 2,4-Dinitrotoluene | 450. | U |
| 606-20-2 | 2,6-Dinitrotoluene | 450. | U |
| 84-66-2 | Diethylphthalate | 450. | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 450. | U |
| 86-73-7 | Fluorene | 45. | J |
| 100-01-6 | 4-Nitroaniline | 2300. | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 2300. | U |
| 86-30-6 | N-Nitrosodiphenylamine | 450. | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 450. | U |
| 118-74-1 | Hexachlorobenzene | 450. | U |
| 87-86-5 | Pentachlorophenol | 2300. | U |
| 85-01-8 | Phenanthrene | 470. | |
| 120-12-7 | Anthracene | 120. | J |
| 84-74-2 | Di-n-Butylphthalate | 450. | U |
| 206-44-0 | Fluoranthene | 530. | |
| 129-00-0 | Pyrene | 640. | |
| 85-68-7 | Butylbenzylphthalate | 450. | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 900. | U |
| 56-55-3 | Benzo(a)Anthracene | 380. | J |
| 117-81-7 | Bis(2-Ethylhexyl)Phthalate | 360. | J |

Qualifiers:

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D- Diluted value.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
PAGE 3

SAMPLE

NH-16

Lab Name: GALSON LABORATORIES

Client: NIXON HARGRAVE (GZ024LL)

Task No.: 90040927

Matrix: (soil/water) SOIL

Lab Sample ID: J8280

Sample wt/vol: 29.98g

Lab File ID: >AC960::D1

Level: (low/med) LOW

Date Received: 04/09/90

% Moisture: not dec.: 26

Date Extracted:04/19/90

Extraction:(SepF/Cont/Sonc) SONC

Date Analyzed:04/26/90

GPC Cleanup: (Y/N) N

Dilution Factor: 1.00

| CAS No. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg | Q |
|---|---|---|---|
| 218-01-9 | Chrysene | 580. | |
| 117-84-0 | Di-n-octylphthalate | 450. | U |
| 205-99-2 | Benzo(b)Fluoranthene | 910. | |
| 207-08-9 | Benzo(k)Fluoranthene | 450. | U |
| 50-32-8 | Benzo(a)Pyrene | 460. | |
| 193-39-5 | Indeno(1,2,3-cd)Pyrene | 710. | |
| 53-70-3 | Dibenzo(a,h)Anthracene | 450. | U |
| 191-24-2 | Benzo(g,h,i)Perylene | 470. | |

Qualifiers:

U- Undetected. Value is the quantitation limit for that compound.
J- Estimated value. Value is below the compound quantitation limit.
B- Compound also found in blank.
D- Diluted value.