# SITE 41 (OPERABLE UNIT 16)
# REMEDIAL INVESTIGATION REPORT ADDENDUM
# Wetlands 10 and 48

To: NAS Pensacola Tier 1 Partnering Team
From: EnSafe Inc.
Date: October 15, 2007
Subject: Remedial Investigation Report Addendum, Wetlands 10 and 48

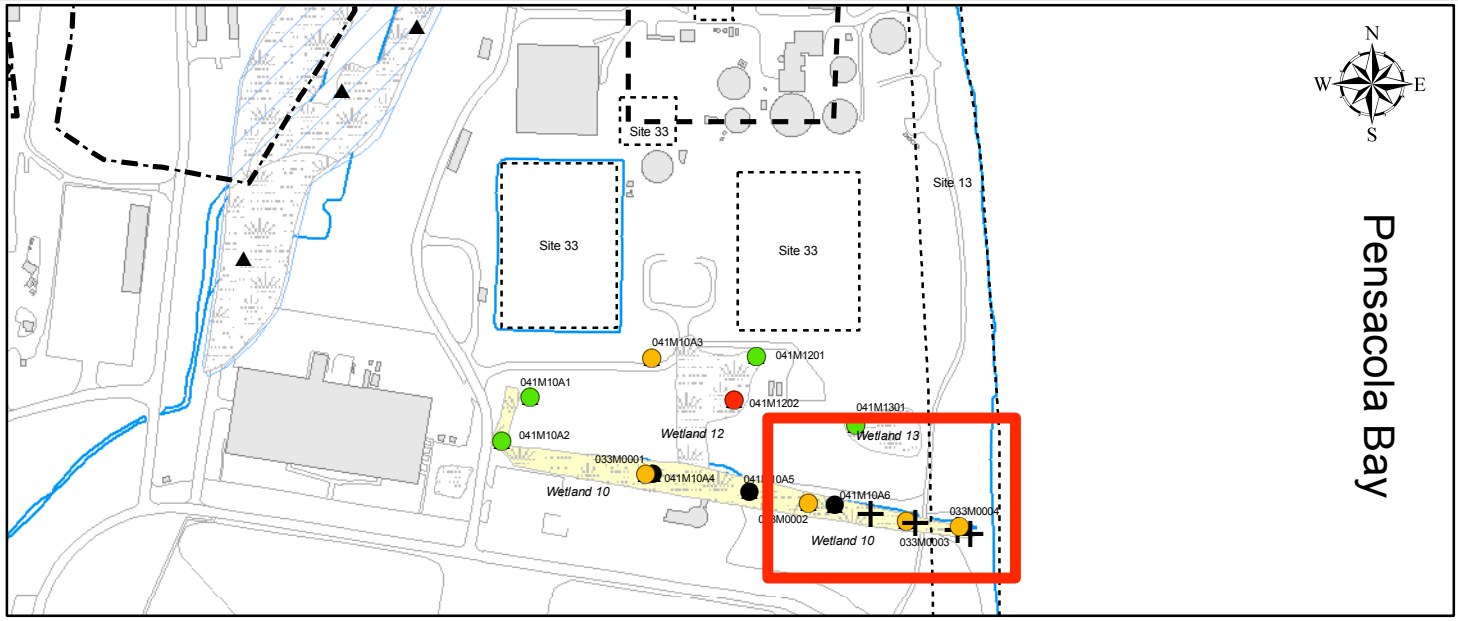
The Naval Air Station (NAS) Pensacola Site 41 Remedial Investigation (RI) Report (EnSafe Inc., 2005) identified data gaps at Wetlands 10 and 48. A sampling plan was developed to collect additional data to fill those gaps, thereby reducing or eliminating uncertainty at Wetlands 10 and 48. The plan was approved by U.S. Environmental Protection Agency (USEPA) and Florida Department of Environmental Protection (FDEP) and implemented on May 24, 2007. This document summarizes the sampling rationale, locations, techniques, and results of the additional sampling event.

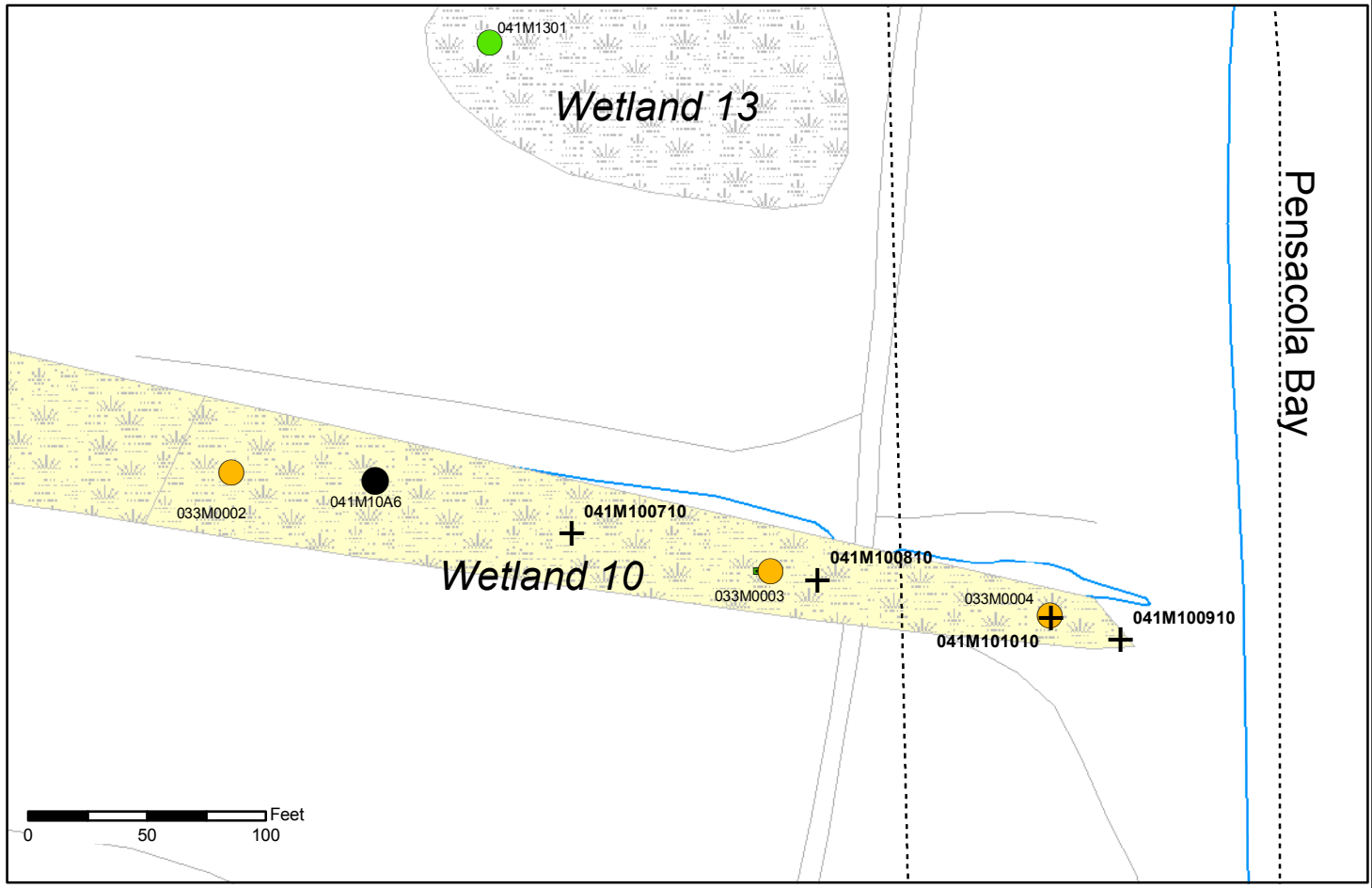
## WETLAND 10

### Wetland 10 Site History

Parsons and Pruitt of USEPA (1991) originally described Wetland 10 as a palustrine emergent system. The wetland is a man-made drainage ditch along the southern edge of Operable Unit (OU) 10 and receives storm water runoff from the former Chevalier Field area, which is now the Naval Air Technical Training Center (Figure 1). The wetland is bounded by maintained grass and pine trees. The open water portion of Wetland 10 ranges from 1 to 5 feet deep and 12 to 20 feet wide. The wetland was described in the 2005 RI report as stagnant, containing a monoculture of duckweed *(Lemna).* Wetland 10 is dissected by a service road with a culvert that allows the wetland to drain by percolation to Pensacola Bay.

Seven sediment samples were collected during the OU 10 and Site 41 RIs and were analyzed for Target Analyte List (TAL) metals, pesticides, polychlorinated biphenyls (PCBs), semivolatile organic compounds (SVOCs), and volatile organic compounds (VOCs). Of the seven sample locations in Wetland 10, sample location 033M0004 had the greatest number of constituents (four) that exceeded their refinement values. Cadmium (34.6 milligrams per kilogram [mg/kg]), chromium (1,180 mg/kg), lead (161 mg/kg), and nickel (52.1 mg/kg) exceeded their refinement values of 4.21 mg/kg, 160 mg/kg, 112 mg/kg, and 42.8 mg/kg, respectively. The mean effects-range median (ERM) quotient category was 3.

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**Legend**

- Sediment ReSample
- **OU 10 Sediment Sample with ERM Category**
- **Phase II Mean ERM Quotient Category**
  - 1
  - 2
  - 3
- Site 41 RI Sediment associated to another OU
- Sediment Sample collected for grain size only
- Operable Unit (OU)
- Site
- Wetland 10
- Wetland- Approximate
- Consolidated Wetland 64
- Building
- Shoreline
- Road

**Figure 1**
**Wetland 10**
**Sediment Sample Locations**

**Site 41 Additional Sediment Sampling**
**NAS Pensacola, FL**

**Date: 10/5/2007** | **Drwn by: CT**

File: K:/GIS/Navy-Pensacola/Tetratech_Wetland10_48_SAP_0888802584/wetland10_resample100907.mxd

## INVESTIGATION RATIONALE

The chromium concentration detected at 033M0004 was one of the highest concentrations detected at NAS Pensacola. Moreover, three other metals also exceeded their refinement values at this location indicating the potential for toxicity. The 2007 sampling event assessed the extent of metals contamination and potential ecological risk in the area of 033M0004 at Wetland 10. Four sediment samples were collected and analyzed for TAL metals, total organic carbon (TOC), grain size and toxicity. Figure 1 shows the locations of the sediment samples collected during this investigation. One sample was collected at location 033M0004. Two sediment samples were collected upstream to the west of sample location 033M0004 at 100-foot and 200-foot intervals. One sample was also collected to the east of 033M0004 to sample the most downgradient portion of Wetland 10. Salinity readings of 0.8 parts per thousand, measured in the field before sample collection, indicated the wetland was fresh water. In addition, TRAC Laboratory of Pensacola, Florida verified that the sediments were fresh water before conducting the toxicity test. Therefore, the laboratory used *Hyalella azteca* as the test organism.

## WETLAND 48

### Wetland 48 Site History

Wetland 48 is in a mostly undeveloped portion of NAS Pensacola, north of Radford Boulevard and south of the Pensacola Fuel Farm (Figure 2). One sediment sample (041M480101) was collected and analyzed for TAL metals, pesticides, PCBs, SVOCs, and VOCs in January 1996. The sample location 041M4801 was centrally located within Wetland 48 and adjacent to a culvert along Fuel Farm Road. Wetland-specific and OU-wide evaluations in the RI Report determined that pesticide levels were a potential excess risk. Further assessment was recommended. The pesticides, 4,4′-dichlorodiphenyldichloroethane (4,4'-DDD), 4,4′-dichlorodiphenyldichloroethylene (4,4'-DDE) , 4,4′-dichlorodiphenyltrichloroethane (4,4'-DDT), and total DDT (sum of 4,4'-DDD, 4,4'-DDE and 4,4'-DDT), had concentrations that exceeded the NAS Pensacola basewide sediment values. In addition, Wetland 48 had the highest concentration of total DDT (3,460 micrograms per kilogram [ g/kg]) in the NAS Pensacola wetlands. The mean ERM quotient evaluation classified the sample as a Category 3.

The total DDT sediment concentration generated a maximum No-Observed-Adverse-Effect Level (NOAEL) hazard quotient (HQ) concentration of 14 during the Food Chain Model evaluation for the piscivorous bird community and a maximum NOAEL HQ concentration of 1.34 for the piscivorous mammal community.

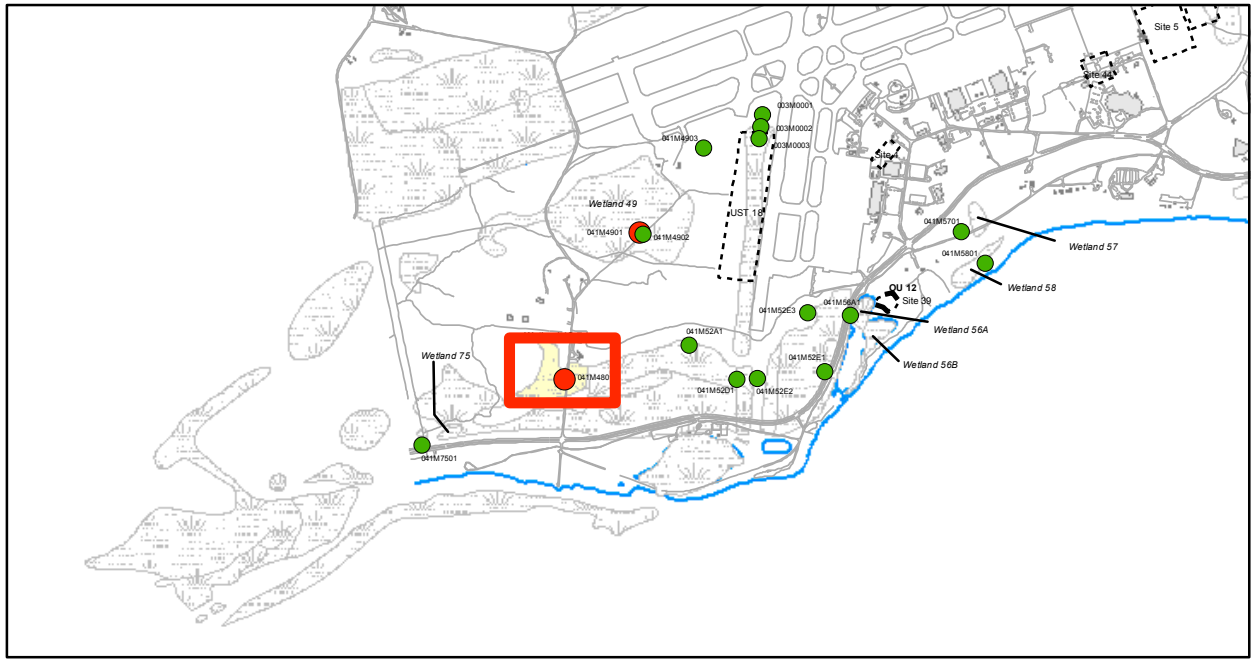
## Legend

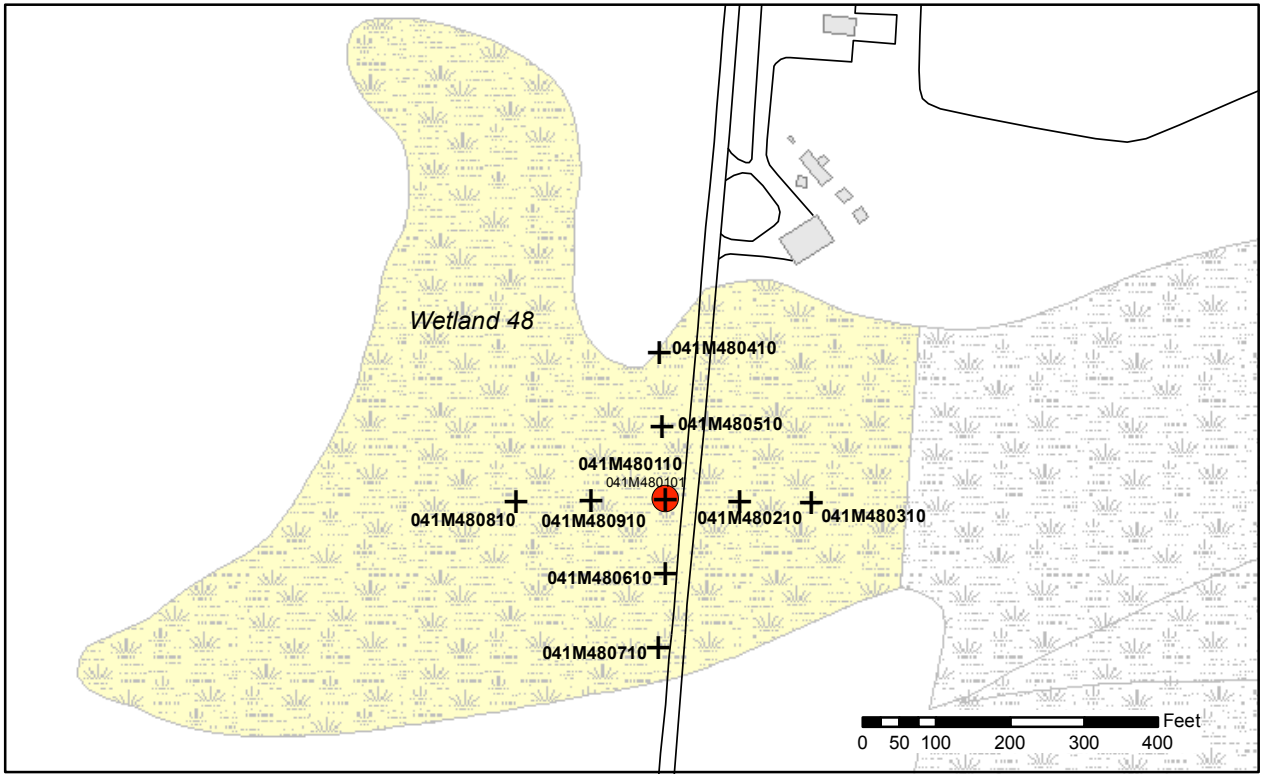
- Sediment ReSample

**Site 41 RI Sediment Sample**

**Phase II Total DDT**

- 0.285 - 109.99
- 110.00(BL) - 3460.00
- Road
- Shoreline
- Wetland 48
- Wetland-Approximate
- Operable Unit (OU)
- Site
- Building

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Note:
BL is the total DDT basewide level.
Results units are ug/kg.
Only the miscellaneous wetlands have labels.

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**Figure 2**
**Wetland 48**
**Sediment Sample Locations**

**Site 41 Additional Sediment Sampling**
**NAS Pensacola, FL**

| Date: 7/16/07 | | Drwn by: CT |
|---|---|---|

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**Investigation Rationale**

Based on the previous results, nine sediment samples were collected and analyzed for pesticides during the 2007 sampling event to assess the extent of the pesticide contamination. Sediment samples were submitted for pesticides, TOC, and grain size analysis. Figure 2 shows the locations of the sediment samples collected during this investigation. One sample was collected at 041M4801 with the other samples collected at 100 and 200 feet away from 041M4801 to the north, south, east, and west. During sample collection, a strong petroleum odor was noted at the four locations to the east and west of 041M4801. Therefore, Florida Residual Petroleum Organic (FL-PRO) and polycyclic aromatic hydrocarbons (PAHs) were added to the laboratory analysis for all sediment samples to assess the extent of possible petroleum contamination.

**SAMPLING METHODS**

All samples were collected, handled, preserved, and documented in accordance with the Final *Comprehensive Sampling and Analysis Plan* (CSAP) (EnSafe/Allen & Hoshall July 8, 1994) and USEPA Region 4 *Environmental Investigations Standard Operating Procedures Quality Assurance Manual* (2001). Sampling was conducted using decontaminated stainless-steel sampling equipment including long-handled dippers, bowls, and spoons.

All sediment samples were collected from 0 to 6 inches deep. Sediments were thoroughly homogenized, aliquots of which were collected from the homogenate and transferred to laboratory-ready containers with Teflon lids and thermally preserved to 4° Celsius for chemical and toxicity analysis.

## Sample Identification

Each sample was assigned a sample identification number according to the following format and guidelines:

Format: 1 2 3 4 5 6 7 8 9 0

***Field Samples:***

1 2 3 — The first three digits (041) represent the site where the sample was collected.

4 — This digit represents the matrix of the sample. For sediment, the letter M is used.

5 6 7 8 — These four digits designate the wetland and the sample location.

9 0 — The final two digits represent the sample event. For this investigation, the final two digits are 10.

The first eight digits indicate the sample location identification and are considered a short identification. For example, the sample collected at location 7 at Wetland 48, would be identified as 041M4807.

## LABORATORY ANALYSES

Table 1 summarizes the analytical methods and sediment sample aliquots for the sampling.

**Table 1**
**Sample Analysis**

| Analysis | Method | Sample Container/Aliquot |
|---|---|---|
| **Wetland 10** | | |
| TAL Metals | EPA SW-846 6010 | 8-oz. plastic jar |
| Grain Size | ASTM D2434 | double-bagged 12" x 15" plastic bag |
| Total Organic Carbon | EPA SW-846 9060 | 4-oz amber glass jar |
| *Hyallela Azteca* Toxicity | EPA/6OO/R-99/064 | One 1-gallon polyethylene container |
| **Wetland 48** | | |
| Pesticides | EPA SW-846 8081 | 16 oz. glass jar |
| PAHs | EPA SW-846 8270 | Added in the field |
| FL-Residual Petroleum Organics | FL-PRO | Added in the field |
| Grain Size | ASTM D2434 | double-bagged 12" x 15" plastic bag |
| Total Organic Carbon | EPA SW-846 9060 | 4-oz amber glass jar |

***Notes:***
TAL — Target Analyte List
EPA — Environmental Protection Agency
oz — ounce
SW — Solid Waste
ASTM — American Society of Testing and Materials

Detection limits or quantitation limits for metals and extractable organics were requested to be below the lower of the USEPA Region 4's ecological screening values or FDEP's threshold effects levels (TELs). Screening and refinement values are in Attachment A. There is no sediment screening value for FL-PRO. The sediment chemistry analytical report is in Attachment B. The toxicity analytical report is in Attachment C.

## RESULTS

### Wetland 10

Table 2 summarizes the analytical results for Wetland 10. Results of the resampling for sample 033M04001 (location 041M1010) indicated a general decrease in detected concentrations. Cadmium in the primary sample decreased from 34.6 mg/kg to not detected, chromium decreased

**Table 2**
**Wetland 10 2007 Analytical Results**
**NAS Pensacola, Pensacola, Florida**

| | Screening Value | Refinement Value | Freshwater Reference Concentration | Westernmost Location 041M100710 | West Side of Road 041M100810 | Easternmost Location 041M100910 | Resample Location 0410M101010 | 1993 Results 033M04001 |
|---|---|---|---|---|---|---|---|---|
| **Metals (mg/kg)** | | | | | | | | |
| Aluminum | NS | NS | 13,610 | 8,300 | 1,200 | 210 | 560 | 4,150 |
| Arsenic | 7.24 | 41.6 | 6.62 | 1.8 | ND | ND | ND | 6.2 |
| Barium | NS | NS | 14 | **17** | 6.6 | 0.96 | 1.1 | **15.1 J** |
| Beryllium | NS | NS | 0.84 | 0.11 | ND | ND | ND | ND |
| Calcium | NS | NS | 10,756.67 | 1,900 | 1,600 | 700 | 880 | 2,760 |
| Cadmium | 0.68 | 4.21 | 1.8 | **5.2** | ND | ND | ND | **34.6** |
| Cobalt | NS | NS | 2.8 | 0.86 | ND | ND | ND | ND |
| Chromium | 52.3 | 160 | 39.37 | **120** | 3.1 | 0.65 | 1.4 | **1,180** |
| Copper | 18.7 | 108 | 19.5 | **23** | 1.6 | 0.33 | 0.59 | **45.1** |
| Iron | NS | NS | 11,911.67 | 6,300 | 940 | 280 | 420 | 1,210 |
| Lead | 30.2 | 112 | 82.47 | 26 | 2.8 | 1.1 | 1.7 | **161** |
| Magnesium | NS | NS | 7,513.33 | 560 | 94 | 40 | 69 | ND |
| Manganese | NS | NS | 37.97 | **49** | 7.7 | 12 | 4.1 | 27.1 |
| Mercury | 0.13 | 0.696 | 0.55 | 0.14 | ND | ND | ND | ND |
| Nickel | 15.9 | 42.8 | 9.28 | 3.9 | 0.46 | ND | ND | **52.1** |
| Potassium | NS | NS | 1,628.67 | 190 | 32 | 12 | 21 | ND |
| Silver | 0.73 | 1.77 | 2.1 | **3.8** | ND | ND | ND | ND |
| Sodium | NS | NS | 18,993.33 | 480 | 120 | 73 | 110 | 156 J |
| Vanadium | NS | NS | 28.67 | 14 | 2.2 | 0.6 | 1.3 | ND |
| Zinc | 124 | 271 | 36.73 | **83** | 6.8 | 2 | 3.9 | **115** |
| **Total Organic Carbon** | | | | | | | | |
| TOC (mg/kg) | NS | NS | NA | 28,000 | 4100 | 1100 | 2000 | NA |
| TOC (%) | NS | NS | NA | 2.8 | 0.41 | 0.11 | 0.2 | NA |

***Notes:***
All concentrations are presented in mg/kg.
Screening value exceedances are shown in green
Refinement value exceedances are shown in red
Reference concentration exceedances are shown in **bold**.
NS = no screening criteria established
Exceedances of all screening value, refinement value, and reference concentration are shown by yellow shading
NA = Not analyzed

from 1,180 mg/kg to 1.4 mg/kg, lead decreased from 161 mg/kg to 1.7 mg/kg and nickel decreased from 52.1 mg/kg to not detected. The only location with screening value, refinement value, and reference concentration exceedances was the westernmost location, 041M1007, approximately 200 feet west of 033M04001. Silver and cadmium at 041M1007 exceeded their refinement values.

Although refinement values were exceeded, toxicity results conducted at all four sample locations indicated that there were no statistically significant reductions in survival or growth when compared to control (Attachment C).

**Wetland 48**

The analytical results for Wetland 48 are presented in Table 3. Of the nine samples collected at Wetland 48, eight exceeded base-wide screening levels for total DDT (Figure 3). The total DDT concentration in the confirmation sample (041M4801) collected at the 1994 location (identified as 041M4801) increased from 3,460 g/kg to 12,291 g/kg. Two additional locations (041M4802 and 041M4809) also exceeded the 1994 maximum detected concentration.

FL-PRO concentrations ranged from 190 mg/kg at 041M4801 to 31,000 mg/kg at 041M4803 as summarized in Table 3 and shown on Figure 4. The chromatograms and the laboratory standards were reviewed for the FL-PRO results (Attachment D). The laboratory indicated that the results are heavier than their heavy oil standard.

**Food-Chain Model Evaluation**

The total DDT concentrations were evaluated using a food-chain model for the piscivorous bird and piscivorous mammal communities. The methodologies are detailed in Section 8 of the *Site 41 Remedial Investigation Report* (EnSafe, 2005). The Total DDT food chain models are presented in Tables 4 and 5. The total DDT sediment concentration of 14.4 mg/kg generated a maximum NOAEL HQ concentration of 58.1 for the piscivorous bird community (Table 4) and a maximum NOAEL HQ concentration of 5.56 for the piscivorous mammal community (Table 5). An average total DDT sediment concentration of 1,315.48 g/kg for all the Miscellaneous Wetlands generated a NOAEL HQ of 5.31 for the piscivorous bird community and 0.508 for the piscivorous mammal community.

## Legend

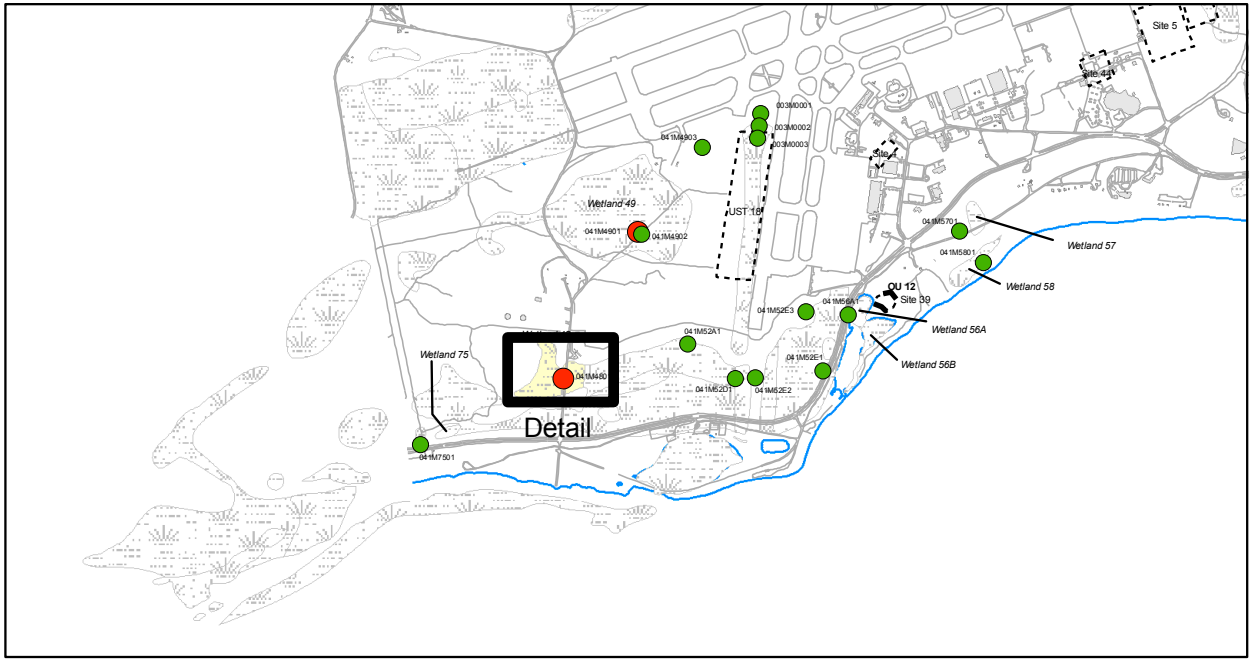
**Phase 2007 Total DDT**

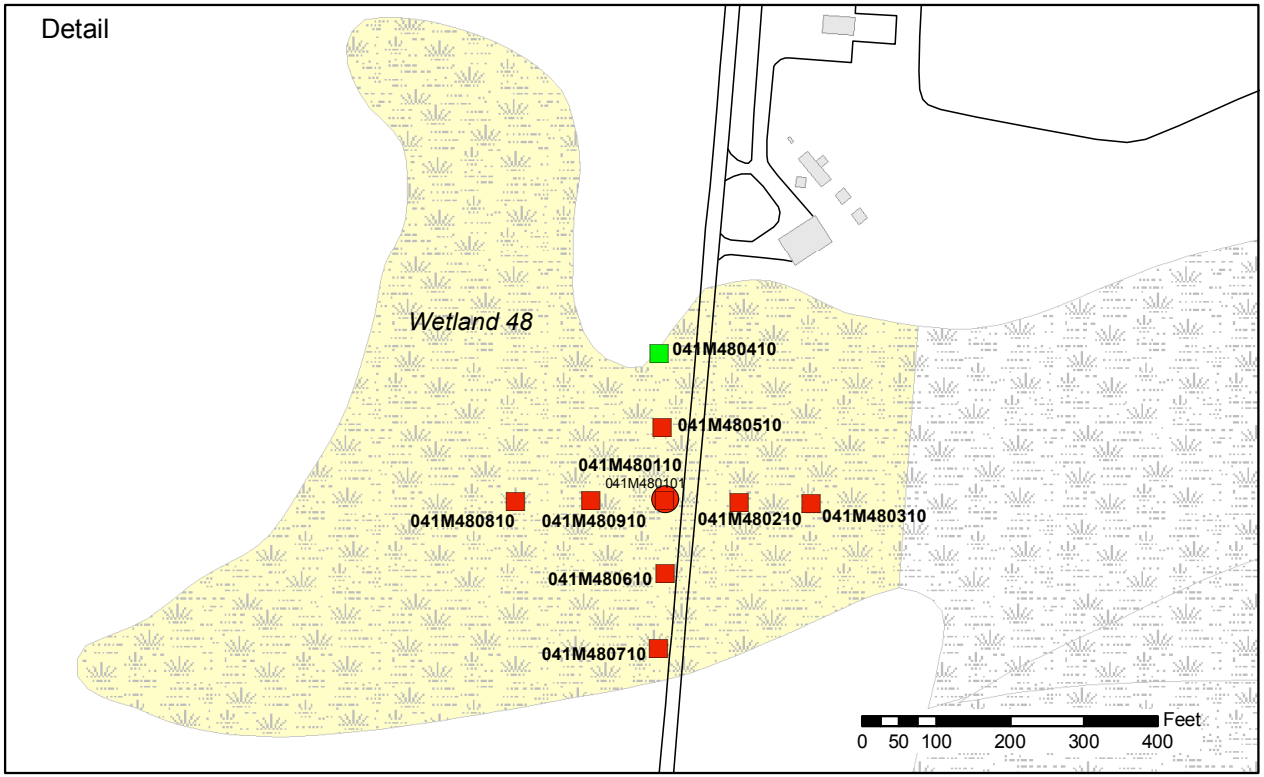
- 16.9 - 109.99
- 110.00(BL) - 14,400.0

**Site 41 RI Sediment Sample**

**Phase II Total DDT**

- 0.285 - 109.99
- 110.00(BL) - 14,400.0
- Road
- Shoreline
- Wetland 48
- Wetland-Approximate
- Operable Unit (OU)
- Site
- Building

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Note:
BL is the total DDT basewide level.
Results units are ug/kg.
Only the miscellaneous wetlands have labels.

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**Figure 3**
**Wetland 48**
**Total DDT Analytical Results**

**Site 41 Additional Sediment Sampling**
**NAS Pensacola, FL**

| Date: 9/14/07 | | Drwn by: CT |
|---|---|---|

File:K:/GIS/Navy-Pensacola/Tetratech_Wetland10_48_SAP_0888802584/wetland48_resample total DDTv3.mxd

**Table 3**
**Wetland 48 2007 Analytical Results**
**NAS Pensacola, Pensacola, Florida**

| | Screening Value | Refinement Value | Base-Wide Concentrations | 1994 Original Sample West of Road at Culvert 041M480101 | Same Location as 041M480101 041M480110 | East of Road, in Creek Near Beaver Dam 041M480210 | 100 feet East of 041M4802 in Creek 041M480310 | Northernmost Location, Along West Side of Road 200 feet from 041M4801 041M480410 |
|---|---|---|---|---|---|---|---|---|
| **PAHs (µg/kg)** | | | | | | | | |
| 1-Methlynapthalene | NS | NS | NA | ND | ND | 3,300 | ND | ND |
| 2-Methylnapthalene | 20.2 | 201 | NA | ND | ND | 3,900 | ND | ND |
| Fluorene | 21.1 | 144 | NA | ND | ND | 1,100 | ND | ND |
| Napthalene | 34.6 | 391 | NA | ND | ND | ND | ND | ND |
| Phenanthrene | 86.7 | 544 | NA | ND | ND | 1,300 | ND | ND |
| Pyrene | 153 | 1,398 | NA | ND | ND | 590 | ND | ND |
| Anthracene | 46.9 | 245 | NA | ND | ND | 330 | ND | ND |
| Total PAH | 1,684 | 16,770 | NA | ND | ND | 10,520 | ND | ND |
| **Petroleum Hydrocarbons (mg/kg)** | | | | | | | | |
| **FL-PRO** | NS | NS | NA | NA | 190 | 6,800 | 31,000 | 40 |
| **Pesticides (µg/kg)** | | | | | | | | |
| 4,4'-DDD | 1.22 | 7.81 | 50 | **2,600** | **5,100** | **13,000** | **1,500** | 2.6 |
| 4,4'-DDE | 2.07 | 374 | 40 | **620** | **91** | **930** | **250** | 8.7 |
| 4,4'-DDT | 1.19 | 4.77 | 20 | **240** | **7,100** | **470** | **67** | 5.6 |
| Total DDT | 3.3 | 51.7 | 110 | **3,460** | **12,291** | **14,400** | **1,817** | 16.9 |
| Dieldrin | 0.715 | 4.3 | NA | ND | ND | ND | ND | ND |
| Endosulfan Sulfate | NS | NS | NA | ND | ND | ND | 95 | 0.93 |
| Endrin ketone | 3.3 | NS | NA | ND | ND | ND | ND | 1.5 |
| gamma-Chlordane | 1.7 | 4.79 | NA | ND | ND | ND | ND | ND |
| **Total Organic Carbon** | | | | | | | | |
| TOC (mg/kg) | NS | NS | NA | | 4,400 | 20,000 | 360,000 | 6,100 |
| TOC (%) | NS | NS | NA | | 0.44 | 2 | 36 | 0.61 |

***Notes:***
Concentrations that exceed refinement values (and basewide values for DDT) are shown in red
Concentrations that exceed screening values are shown in green
NS = No criteria established
mg/kg = milligrams per kilogram
ND = not detected at or above the laboratory detection limit
Exceedances of screening value, refinement value and base-wide concentration are shown by yellow shading
NA = not applicable

**Table 3**
**Wetland 48 2007 Analytical Results**
**NAS Pensacola, Pensacola, Florida**

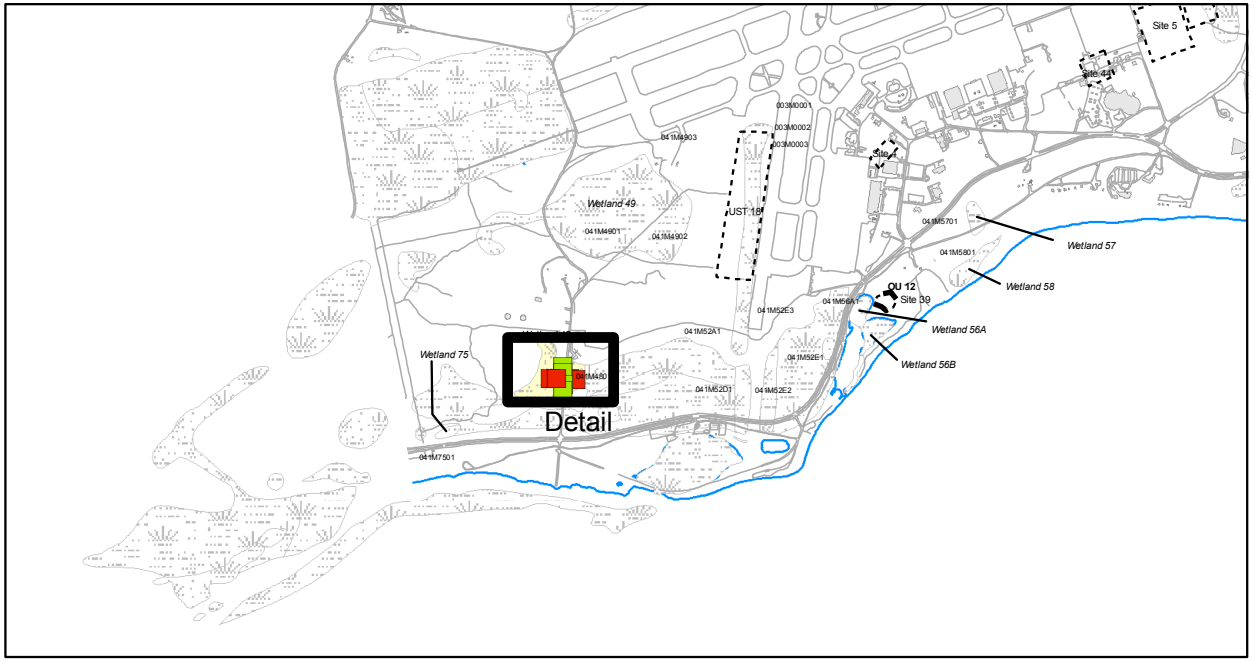
| | Screening Value | Refinement Value | Base-Wide Concentrations | Along West Side of Road 100 feet North of 041M4801 041M480510 | Along West Side of Road, 100 feet South of 041M4801 041M480610 | Along West Side of Road, 200 feet South of 041M4801 041M480710 | Westernmost Location, 200 feet West of 041M4801 Along Creek 041M480810 | 100 feet West of 041M4801 Along Creek 041M480910 |
|---|---|---|---|---|---|---|---|---|
| **PAHs (µg/kg)** | | | | | | | | |
| 1-Methlynapthalene | NS | NS | NA | ND | ND | ND | ND | 1,400 |
| 2-Methylnapthalene | 20.2 | 201 | NA | ND | ND | ND | ND | 1,800 |
| Fluorene | 21.1 | 144 | NA | ND | ND | ND | ND | ND |
| Napthalene | 34.6 | 391 | NA | ND | ND | ND | ND | 1,400 |
| Phenanthrene | 86.7 | 544 | NA | ND | ND | ND | ND | ND |
| Pyrene | 153 | 1,398 | NA | ND | ND | ND | ND | ND |
| Anthracene | 46.9 | 245 | NA | ND | ND | ND | ND | ND |
| Total PAH | 1,684 | 16,770 | NA | ND | ND | ND | ND | 4,600 |
| **Petroleum Hydrocarbons (mg/kg)** | | | | | | | | |
| **FL-PRO** | NS | NS | NA | 98 | 320 | 240 | 26,000 | 12,000 |
| **Pesticides (µg/kg)** | | | | | | | | |
| 4,4'-DDD | 1.22 | 7.81 | 50 | 17 | **89** | **54** | **210** | **4,700** |
| 4,4'-DDE | 2.07 | 374 | 40 | **100** | **260** | **140** | **57** | **700** |
| 4,4'-DDT | 1.19 | 4.77 | 20 | 7.1 | ND | ND | ND | ND |
| Total DDT | 3.3 | 51.7 | 110 | **124.1** | **349** | **194** | **267** | **5,400** |
| Dieldrin | 0.715 | 4.3 | NA | ND | ND | ND | 14 | ND |
| Endosulfan Sulfate | NS | NS | NA | ND | ND | ND | ND | 47 |
| Endrin ketone | 3.3 | NS | NA | ND | ND | ND | ND | ND |
| gamma-Chlordane | 1.7 | 4.79 | NA | ND | ND | ND | 21 | ND |
| **Total Organic Carbon** | | | | | | | | |
| TOC (mg/kg) | NS | NS | NA | 30,000 | 29,000 | 35,000 | 420,000 | 360,000 |
| TOC (%) | NS | NS | NA | 3 | 2.9 | 3.5 | 42 | 36 |

***Notes:***
Concentrations that exceed refinement values (and basewide values for DDT) are shown in red
Concentrations that exceed screening values are shown in green
NS = No criteria established
mg/kg = milligrams per kilogram
ND = not detected at or above the laboratory detection limit
Exceedances of screening value, refinement value and base-wide con
NA = not applicable

## Legend

**Phase 2007 FL-PRO**

- 40 - 339.99
- 340.00 - 31,000
- Road
- Shoreline
- Wetland 48
- Wetland-Approximate
- Operable Unit (OU)
- Site
- Building



Note:
Results units are mg/kg.
Only the miscellaneous wetlands have labels.

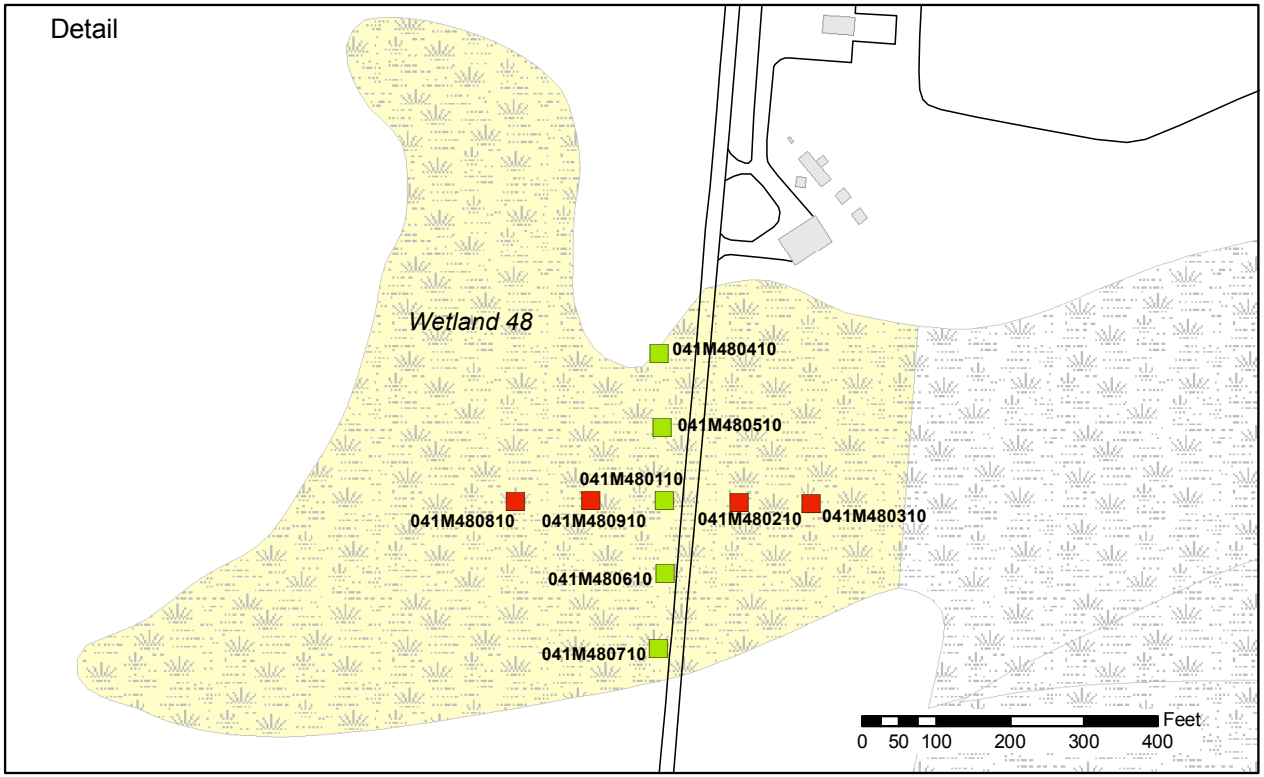



**Figure 4**
**Wetland 48**
**FL-PRO Analytical Results**

**Site 41 Additional Sediment Sampling**
**NAS Pensacola, FL**

| Date: 9/14/07 | | Drwn by: CT |
|---|---|---|

File:K:/GIS/Navy-Pensacola/Tetratech_Wetland10_48_SAP_0888802584/wetland48_resample FL_PROv3.mxd

**Table 4**
**Remaining Wetlands Total DDT FCM (2007)**
**Receptor: Green Heron (Butorides virescens)**

Sediment Ingestion Rate[a] : 0.00023 kg/day
Surface Water Ingestion Rate[b]: 0.0227 L/day
Food Ingestion Rate[c]: 0.0115 kg/day

Body Weight: 0.241 kg

| Contaminant | | Sediment Concentrations mg/kg | Surface Water Concentrations mg/L | Tissue Concentrations mg/kg | Sediment Exposure mg/day | Water Exposure mg/day | Prey Exposure mg/day | Total Exposure mg/day | Daily Dose mg/kgBW/day | NOAEL mg/kgBW/day | LOAEL mg/kgBW/day | NOAEL HQ | LOAEL HQ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total DDT | | | | | | | | | | | | | |
| | Max | 14.4 | 0 | 61.7760 | 0.003312 | 0.0000 | 0.7104 | 0.713736 | 2.9616 | 0.051 | 0.512 | **5.81E+01** | **5.78E+00** |
| | Actual Detections | 14.4 | 0 | 61.7760 | 0.003312 | 0.0000 | 0.7104 | 0.713736 | 2.9616 | 0.2 | 0.4 | **1.48E+01** | **7.40E+00** |
| | Average | 1.31548 | 0.0002 | 5.6434 | 0.00030256 | 0.0000 | 0.0649 | 0.065206306 | 0.2706 | 0.051 | 0.512 | **5.31E+00** | 5.28E-01 |

***Notes:***

Sediment Exposure = Sediment Concentration * Sediment Ingestion Rate (mg/day)
Surface Water Exposure = Surface Water Concentration * Water Ingestion Rate (mg/day)
Prey Exposure = Tissue Concentration * Food Ingestion Rate (mg/day)
Total Exposure = Sediment Exposure + Surface Water Exposure + Prey Exposure (mg/day)

Daily Dose = Total Exposure / Body Weight (mg/kgBW/day)

NOAEL HQ = Daily Dose/NOAEL (mg/kgBW/day)
LOAEL HQ = Daily Dose/LOAEL (mg/kgBW/day)

Average Total DDT Concentration was calculated using the Total DDT concentrations for all the miscellaneous wetlands (EnSafe 2005) and the data presented in this RI Addendum

a Estimated based on the results of Beyer et al., 1994.
b Calder and Braun 1983.
c Kushlan 1978
d Niethammer and Kaiser 1983.

**Table 5**
**Remaining Wetlands Total DDT FCM (2007)**
**Receptor: Mink (Mustella vison)**

Sediment Ingestion Rate[a] : 0.003 kg/day
Surface Water Ingestion Rate[b]: 0.0578 L/day
Food Ingestion Rate[c]: 0.029 kg/day

Body Weight: 0.55 kg

| Contaminant | Sediment Concentrations mg/kg | Surface Water Concentrations mg/L | Tissue Concentrations mg/kg | Sediment Exposure mg/day | Water Exposure mg/day | Prey Exposure mg/day | Total Exposure mg/day | Daily Dose mg/kgBW/day | NOAEL mg/kgBW/day | LOAEL mg/kgBW/day | NOAEL HQ | LOAEL HQ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total DDT | | | | | | | | | | | | |
| Max | 14.4 | 0 | 61.7760 | 0.0432 | 0.0000 | 1.7915 | 1.834704 | 3.3358 | 0.6 | 3 | **5.56E+00** | **1.11E+00** |
| Actual Detections | 14.4 | 0 | 61.7760 | 0.0432 | 0.0000 | 1.7915 | 1.834704 | 3.3358 | 0.8 | 4 | **4.17E+00** | 8.34E-01 |
| Average | 1.31548 | 0.0002 | 5.6434 | 0.00394644 | 0.0000 | 0.1637 | 0.167616867 | 0.3048 | 0.6 | 3 | 5.08E-01 | 1.02E-01 |

***Notes:***

Sediment Exposure = Sediment Concentration * Sediment Ingestion Rate (mg/day)
Surface Water Exposure ) = Surface Water Concentration * Water Ingestion Rate (mg/day
Prey Exposure = Tissue Concentration * Food Ingestion Rate (mg/day)
Total Exposure = Sediment Exposure + Surface Water Exposure + Prey Exposure (mg/day)

Daily Dose = Total Exposure / Body Weight (mg/kgBW/day)

NOAEL HQ = Daily Dose/NOAEL (mg/kgBW/day)
LOAEL HQ y) = Daily Dose/LOAEL (mg/kgBW/da

Average Total DDT Concentration was calculated using the Total DDT concentrations for all the miscellaneous wetlands (EnSafe 2005) and the data presented in this RI Addendum

a Guilday 1957.
b Based on Morrison 1957.
c Chew 1951.
d Estimated based on the results of Beyer et al., 1994.

## RECOMMENDATIONS

Based on the lack of toxicity at Wetland 10, the Navy recommends no further action. Based on the results of the food chain models indicating excess risk at Wetland 48, the Navy recommends a feasibility study be conducted. Further evaluation of the FL-PRO results is recommended. The Navy proposes to conduct the evaluation during the Pre-Design phase.

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# Attachment A
# Screening and Refinement Values

**Table A-1**
**Site 41**
**Sediment Screening/Refinement Values and Reference Concentrations**

| Parameter | Screening Value (SV) Value | Screening Value (SV) Source | Refinement Value (RV) Value | Refinement Value (RV) Source | Freshwater Reference Concentration | Saltwater Reference Concentration | Units |
|---|---|---|---|---|---|---|---|
| **Metals (mg/kg)** | | | | | | | |
| Aluminum | N/S | N/A | N/R | N/A | 13,610 | 4,274 | mg/kg |
| Antimony | 12 | 1 | N/R | N/A | 4.43 | 0.26 | mg/kg |
| Arsenic | 7.24 | 1, 2 | 41.6 | PEL | 6.62 | 2.14 | mg/kg |
| Barium | N/S | N/A | N/R | N/A | 14 | 3.84 | mg/kg |
| Beryllium | N/S | N/A | N/R | N/A | 0.84 | 0.13 | mg/kg |
| Cadmium | 0.68 | 2 | 4.21 | PEL | 1.8 | 0.39 | mg/kg |
| Calcium | N/S | N/A | N/R | N/A | 10,756.67 | 1,978.80 | mg/kg |
| Chromium | 52.3 | 1, 2 | 160 | PEL | 39.37 | 13.1 | mg/kg |
| Cobalt | N/S | N/A | N/R | N/A | 2.8 | 0.91 | mg/kg |
| Copper | 18.7 | 1, 2 | 108 | PEL | 19.5 | 8.44 | mg/kg |
| Cyanide (CN) | N/S | N/A | N/R | N/A | 5.22 | 1.29 | mg/kg |
| Iron | N/S | N/A | N/R | N/A | 11,911.67 | 2,684.40 | mg/kg |
| Lead | 30.2 | 1, 2 | 112 | PEL | 82.47 | 21.04 | mg/kg |
| Magnesium | N/S | N/A | N/R | N/A | 7,513.33 | 2,943.60 | mg/kg |
| Manganese | N/S | N/A | N/R | N/A | 37.97 | 9.81 | mg/kg |
| Mercury | 0.13 | 1, 2 | 0.696 | PEL | 0.55 | 0.11 | mg/kg |
| Nickel | 15.9 | 1, 2 | 42.8 | PEL | 9.28 | 3.69 | mg/kg |
| Potassium | N/S | N/A | N/R | N/A | 1,628.67 | 899.72 | mg/kg |
| Selenium | N/S | N/A | N/R | N/A | 3.45 | 0.66 | mg/kg |
| Silver | 0.73 | 2 | 1.77 | PEL | 2.1 | 0.52 | mg/kg |
| Sodium | N/S | N/A | N/R | N/A | 18,993.33 | 11,439.60 | mg/kg |
| Thallium | N/S | N/A | N/R | N/A | 1.57 | 0.39 | mg/kg |
| Vanadium | N/S | N/A | N/R | N/A | 28.67 | 8.59 | mg/kg |
| Zinc | 124 | 1, 2 | 271 | PEL | 36.73 | 14.36 | mg/kg |
| **Pesticides and PCBs ( g/kg)** | | | | | | | |
| Aldrin | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| Dieldrin | 0.715 | 2 | 4.3 | PEL | N/A | N/A | g/kg |
| Endosulfan I | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| Endosulfan II | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| Endosulfan sulfate | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| Heptachlor | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| Heptachlor epoxide | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| Methoxychlor | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| Toxaphene | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| | | | | | | | |
| *alpha-BHC* | 0.32 | 2 | 0.99 | PEL | N/A | N/A | g/kg |
| *beta-BHC* | 0.32 | 2 | 0.99 | PEL | N/A | N/A | g/kg |
| *delta-BHC* | 0.32 | 2 | 0.99 | PEL | N/A | N/A | g/kg |
| *gamma-BHC (Lindane)* | 0.32 | 2 | 0.99 | PEL | N/A | N/A | g/kg |
| **Total BHCs** | 0.32 | 2 | 0.99 | PEL | N/A | N/A | g/kg |
| | | | | | | | |
| *alpha-Chlordane* | 1.7 | 1 | 4.79 | PEL | N/A | N/A | g/kg |
| *gamma-Chlordane* | 1.7 | 1 | 4.79 | PEL | N/A | N/A | g/kg |
| **Total Chlordanes** | 1.7 | 1 | 4.79 | PEL | N/A | N/A | g/kg |
| | | | | | | | |
| *4,4'-DDD* | 1.22 | 2 | 7.81 | PEL | 50* | 50* | g/kg |
| *4,4'-DDE* | 2.07 | 2 | 374 | PEL | 40* | 40* | g/kg |
| *4,4'-DDT* | 1.19 | 2 | 4.77 | PEL | 20* | 20* | g/kg |
| **Total 4,4'-DDT (Sum of 4,4'-DDD, 4,4'-DDE and 4,4'-DDT)** | 3.3 | 1 | 51.7 | PEL | 110* | 110* | g/kg |
| | | | | | | | |
| *Endrin* | 3.3 | 1 | N/R | N/A | N/A | N/A | g/kg |
| *Endrin aldehyde* | 3.3 | 1 | N/R | N/A | N/A | N/A | g/kg |
| *Endrin ketone* | 3.3 | 1 | N/R | N/A | N/A | N/A | g/kg |
| **Total Endrins** | 3.3 | 1 | N/R | N/A | N/A | N/A | g/kg |
| | | | | | | | |
| *Aroclor-1016* | 21.6 | 2 | 189 | PEL | N/A | N/A | g/kg |
| *Aroclor-1221* | 67 | 1 | 189 | PEL | N/A | N/A | g/kg |
| *Aroclor-1232* | 21.6 | 2 | 189 | PEL | N/A | N/A | g/kg |
| *Aroclor-1242* | 21.6 | 2 | 189 | PEL | N/A | N/A | g/kg |
| *Aroclor-1248* | 21.6 | 2 | 189 | PEL | N/A | N/A | g/kg |
| *Aroclor-1254* | 21.6 | 2 | 189 | PEL | N/A | N/A | g/kg |
| *Aroclor-1260* | 21.6 | 2 | 189 | PEL | N/A | N/A | g/kg |
| **Total PCBs** | 21.6 | 2 | 189 | PEL | N/A | N/A | g/kg |

**Table A-1**
**Site 41**
**Sediment Screening/Refinement Values and Reference Concentrations**

| Parameter | Screening Value (SV) Value | Screening Value (SV) Source | Refinement Value (RV) Value | Refinement Value (RV) Source | Freshwater Reference Concentration | Saltwater Reference Concentration | Units |
|---|---|---|---|---|---|---|---|
| **SVOCs ( g/kg)** | | | | | | | |
| 1,2,4-Trichlorobenzene | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| 1,2-Dichlorobenzene | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| 1,3-Dichlorobenzene | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| 1,4-Dichlorobenzene | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| 2,2'-oxybis(1-Chloropropane)/bis(2-chlor) | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| 2,4,5-Trichlorophenol | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| 2,4,6-Trichlorophenol | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| 2,4-Dichlorophenol | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| 2,4-Dimethylphenol | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| 2,4-Dinitrophenol | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| 2,4-Dinitrotoluene | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| 2,6-Dinitrotoluene | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| 2-Chloronaphthalene | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| 2-Chlorophenol | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| 2-Methyl-4,6-Dinitrophenol | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| 2-Methylphenol (o-Cresol) | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| 2-Nitroaniline | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| 2-Nitrophenol | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| 3,3'-Dichlorobenzidine | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| 3-Nitroaniline | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| 4-Bromophenyl-phenylether | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| 4-Chloro-3-methylphenol | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| 4-Chloroaniline | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| 4-Chlorophenylphenyl ether | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| 4-Methylphenol (p-Cresol) | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| 4-Nitroaniline | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| 4-Nitrophenol | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| Benzo(b)fluoranthene | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| Benzo(g,h,i)perylene | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| Benzo(k)fluoranthene | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| bis(2-Chloroethoxy)methane | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| bis(2-Chloroethyl)ether | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| bis(2-Ethylhexyl)phthalate (BEHP) | 182 | 1, 2 | 2,647 | PEL | N/A | N/A | g/kg |
| Butylbenzylphthalate | 182 | 3 | 2,647 | PEL | N/A | N/A | g/kg |
| Carbazole | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| Dibenzofuran | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| Diethylphthalate | 182 | 3 | 2,647 | PEL | N/A | N/A | g/kg |
| Dimethylphthalate | 182 | 3 | 2,647 | PEL | N/A | N/A | g/kg |
| Di-n-butylphthalate | 182 | 3 | 2,647 | PEL | N/A | N/A | g/kg |
| Di-n-octylphthalate | 182 | 3 | 2,647 | PEL | N/A | N/A | g/kg |
| Hexachlorobenzene | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| Hexachlorobutadiene | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| Hexachlorocyclopentadiene | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| Hexachloroethane | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| Indeno(1,2,3-cd)pyrene | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| Isophorone | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| Nitrobenzene | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| N-Nitroso-di-n-propylamine | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| N-Nitrosodiphenylamine | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| Pentachlorophenol | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| Phenol | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| | | | | | | | |
| *2-Methylnaphthalene* | 20.2 | 2 | 201 | PEL | N/A | N/A | g/kg |
| *Acenaphthene* | 6.71 | 2 | 88.9 | PEL | N/A | N/A | g/kg |
| *Acenaphthylene* | 5.87 | 2 | 128 | PEL | N/A | N/A | g/kg |
| *Anthracene* | 46.9 | 2 | 245 | PEL | N/A | N/A | g/kg |
| *Benzo(a)anthracene* | 74.8 | 2 | 693 | PEL | N/A | N/A | g/kg |
| *Benzo(a)pyrene* | 88.8 | 2 | 763 | PEL | N/A | N/A | g/kg |
| *Chrysene* | 108 | 2 | 846 | PEL | N/A | N/A | g/kg |
| *Dibenz(a,h)anthracene* | 6.22 | 2 | 135 | PEL | N/A | N/A | g/kg |
| *Fluoranthene* | 113 | 2 | 1,494 | PEL | N/A | N/A | g/kg |
| *Fluorene* | 21.2 | 2 | 144 | PEL | N/A | N/A | g/kg |
| *Naphthalene* | 34.6 | 2 | 391 | PEL | N/A | N/A | g/kg |
| *Phenanthrene* | 86.7 | 2 | 544 | PEL | N/A | N/A | g/kg |
| *Pyrene* | 153 | 2 | 1,398 | PEL | N/A | N/A | g/kg |
| **Total PAHs** | 1684 | 2 | 16,770 | PEL | N/A | N/A | g/kg |
| **TOC Normalized PAHs** | 290 | 5 | 1,800 | MEC | N/A | N/A | mg/kg-oc |

**Table A-1**
**Site 41**
**Sediment Screening/Refinement Values and Reference Concentrations**

| Parameter | Screening Value (SV) Value | Screening Value (SV) Source | Refinement Value (RV) Value | Refinement Value (RV) Source | Freshwater Reference Concentration | Saltwater Reference Concentration | Units |
|---|---|---|---|---|---|---|---|
| **VOCs ( g/kg)** | | | | | | | |
| 1,1,1-Trichloroethane | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| 1,1,2,2-Tetrachloroethane | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| 1,1,2-Trichloroethane | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| 1,1-Dichloroethane | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| 1,1-Dichloroethene | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| 1,2-Dichloroethane | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| 1,2-Dichloroethene (total) | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| 1,2-Dichloropropane | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| 2-Butanone (MEK) | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| 2-Hexanone | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| 4-Methyl-2-Pentanone (MIBK) | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| Acetone | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| Benzene | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| Bromodichloromethane | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| Bromoform | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| Bromomethane | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| Carbon disulfide | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| Carbon tetrachloride | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| Chlorobenzene | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| Chloroethane | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| Chloroform | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| Chloromethane | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| cis-1,3-Dichloropropene | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| Dibromochloromethane | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| Ethylbenzene | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| Methylene chloride | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| Styrene | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| Tetrachloroethene | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| Toluene | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| trans-1,3-Dichloropropene | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| Trichloroethene | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| Vinyl chloride | N/S | N/A | N/R | N/A | N/A | N/A | N/A |
| Xylene (Total) | N/S | N/A | N/R | N/A | N/A | N/A | N/A |

***Notes:***
1 = USEPA value.
2 = FDEP value.
1,2 = USEPA/FDEP values.
3 = 182 ug/kg EPA/FDEP value for BEHP used as a surrogate, per decision from the July 15-16, 2002 Eco Subgroup meeting.
4 = Swartz Threshold effects concentration (TEC).
* = Typical Base-wide Concentrations developed for NAS Pensacola

**Attachment B**
**Sediment Chemistry Analytical Report**

# ANALYTICAL REPORT

Job Number: 680-27062-1

SDG Number: TERR01

Job Description: Terraine - NAS Pensacola

For:
EnSafe, Inc.
5724 Summer Trees Drive
Memphis, TN 38134

Attention: Ms. Allison Harris


Linda Wolfe
Project Manager I
lwolfe@stl-inc.com

06/19/2007

Project Manager: Linda Wolfe

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the STL Project Manager who signed this report.

Level II

II. Receipt
All samples were received in good condition within temperature requirements.

III. GC/MS Semi VOA
Method 8270C: Samples 27062-3, -4, -5 and -6 were diluted due to the abundance of non-target analytes. Elevated reporting limits (RLs) are provided.

Method 8270C: Internal standard response for sample 27062-1 was outside control limits. The sample was re-analyzed with concurring results. The original set of data has been reported.

No other analytical or quality issues were noted.

IV. GC Semi VOA
The method blank for batch 640-32883 contained C8-C40 hydrocarbons above the method detection limit (MDL) but below the reporting limit (RL) . Since this target analyte concentration was less than the project-specific action limit; therefore, re-extraction and/or re-analysis of samples was not performed.

Method 8081A_8082: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for batch 680-77069 were outside control limits due to sample matrix. The associated laboratory control standard (LCS) met acceptance criteria.

Method 8081A_8082: The capping continuing calibration verification (CCV) analyzed after these samples did not meet control limits for 4,4`-DDT and methoxychlor. Sample matrix caused 90% breakdown of 4,4`-DDT. All analytes that passed criteria have been reported. The analytes 4,4`-DDT and methoxychlor were rerun at dilutions only and reported with valid CCV standards.

No other analytical or quality issues were noted.

V. Metals
No analytical or quality issues were noted.

VI. General Chemistry
No analytical or quality issues were noted.

VII. Organic Prep
No analytical or quality issues were noted.

# METHOD SUMMARY

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

| Description | Lab Location | Method | Preparation Method |
|---|---|---|---|
| **Matrix: Solid** | | | |
| Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS) | STL SAV | SW846 8270C | |
| Ultrasonic Extraction | STL SAV | | SW846 3550B |
| Organochlorine Pesticides & Polychlorinated Biphenyls by Gas Chromatography | STL SAV | SW846 8081A_8082 | |
| Ultrasonic Extraction | STL SAV | | SW846 3550B |
| Florida Method for Determination of Petroleum Range Organics by GC/FID | STL TAL | FL-DEP FL-PRO | |
| Ultrasonic Extraction | STL TAL | | SW846 3550B |
| Inductively Coupled Plasma - Atomic Emission Spectrometry | STL SAV | SW846 6010B | |
| Acid Digestion of Sediments, Sludges, and Soils | STL SAV | | SW846 3050B |
| Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique) | STL SAV | SW846 7471A | |
| Mercury in Solid or Semi-Solid Waste (Manual | STL SAV | | SW846 7471A |
| Total Organic Carbon | STL SAV | SW846 9060 | |
| Percent Moisture | STL SAV | EPA PercentMoisture | |
| ASTM 422 Grain Size | STL SAV | ASTM D-422 | |

**LAB REFERENCES:**

STL SAV = STL Savannah
STL TAL = STL Tallahassee

**METHOD REFERENCES:**

EPA - US Environmental Protection Agency

FL-DEP - State Of Florida Department Of Environmental Protection, Florida Administrative Code.

SW846 - "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986
And Its Updates.

# SAMPLE SUMMARY

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

| Lab Sample ID | Client Sample ID | Client Matrix | Date/Time Sampled | Date/Time Received |
|---|---|---|---|---|
| 680-27062-1 | 041M480110 | Solid | 05/24/2007 1600 | 05/26/2007 0945 |
| 680-27062-2 | 041N480110 | Solid | 05/24/2007 1600 | 05/26/2007 0945 |
| 680-27062-3 | 041M480910 | Solid | 05/24/2007 1630 | 05/26/2007 0945 |
| 680-27062-4 | 041M480810 | Solid | 05/24/2007 1650 | 05/26/2007 0945 |
| 680-27062-5 | 041M480210 | Solid | 05/24/2007 1700 | 05/26/2007 0945 |
| 680-27062-6 | 041M480310 | Solid | 05/24/2007 1715 | 05/26/2007 0945 |
| 680-27062-7 | 041M480510 | Solid | 05/24/2007 1730 | 05/26/2007 0945 |
| 680-27062-8 | 041M480410 | Solid | 05/24/2007 1750 | 05/26/2007 0945 |
| 680-27062-9 | 041M480610 | Solid | 05/24/2007 1805 | 05/26/2007 0945 |
| 680-27062-10 | 041M480710 | Solid | 05/24/2007 1815 | 05/26/2007 0945 |
| 680-27062-11 | 041M100710 | Solid | 05/24/2007 1042 | 05/26/2007 0945 |
| 680-27062-12 | 041M100810 | Solid | 05/24/2007 0935 | 05/26/2007 0945 |
| 680-27062-13 | 041M100910 | Solid | 05/24/2007 1212 | 05/26/2007 0945 |
| 680-27062-14 | 041M101010 | Solid | 05/24/2007 1137 | 05/26/2007 0945 |
| 680-27062-15 | 041N101010 | Solid | 05/24/2007 1137 | 05/26/2007 0945 |

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

**Client Sample ID:** **041M480110**

| | | | | | |
|---|---|---|---|---|---|
| Lab Sample ID: | 680-27062-1 | | | Date Sampled: | 05/24/2007 1600 |
| Client Matrix: | Solid | % Moisture: | 30.6 | Date Received: | 05/26/2007 0945 |

**8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)**

| | | | | | |
|---|---|---|---|---|---|
| Method: | 8270C | Analysis Batch: 680-77352 | | Instrument ID: | GC/MS SemiVolatiles - E |
| Preparation: | 3550B | Prep Batch: 680-77068 | | Lab File ID: | e61613.d |
| Dilution: | 1.0 | | | Initial Weight/Volume: | 30.08 g |
| Date Analyzed: | 06/07/2007 1639 | | | Final Weight/Volume: | 1 mL |
| Date Prepared: | 06/07/2007 1000 | | | Injection Volume: | |

| Analyte | DryWt Corrected: Y | Result (ug/Kg) | Qualifier | MDL | RL |
|---|---|---|---|---|---|
| Benzo[g,h,i]perylene | | 33 | U | 33 | 470 |
| Benzo[k]fluoranthene | | 52 | U | 52 | 470 |
| Acenaphthene | | 27 | U | 27 | 470 |
| Acenaphthylene | | 24 | U | 24 | 470 |
| Benzo[a]anthracene | | 45 | U | 45 | 470 |
| Benzo[a]pyrene | | 27 | U | 27 | 470 |
| Benzo[b]fluoranthene | | 37 | U | 37 | 470 |
| 1-Methylnaphthalene | | 42 | U | 42 | 470 |
| 2-Methylnaphthalene | | 35 | U | 35 | 470 |
| Chrysene | | 36 | U | 36 | 470 |
| Dibenz(a,h)anthracene | | 35 | U | 35 | 470 |
| Fluoranthene | | 37 | U | 37 | 470 |
| Fluorene | | 32 | U | 32 | 470 |
| Indeno[1,2,3-cd]pyrene | | 37 | U | 37 | 470 |
| Naphthalene | | 27 | U | 27 | 470 |
| Phenanthrene | | 42 | U | 42 | 470 |
| Pyrene | | 29 | U | 29 | 470 |
| Anthracene | | 33 | U | 33 | 470 |

| Surrogate | %Rec | Acceptance Limits |
|---|---|---|
| 2-Fluorobiphenyl | 103 | 38 - 104 |
| Nitrobenzene-d5 | 84 | 33 - 94 |
| Terphenyl-d14 | 104 | 40 - 129 |

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

**Client Sample ID:** **041N480110**

| | | | | | |
|---|---|---|---|---|---|
| Lab Sample ID: | 680-27062-2 | | | Date Sampled: | 05/24/2007 1600 |
| Client Matrix: | Solid | % Moisture: | 24.9 | Date Received: | 05/26/2007 0945 |

**8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)**

| | | | | | |
|---|---|---|---|---|---|
| Method: | 8270C | Analysis Batch: 680-77352 | | Instrument ID: | GC/MS SemiVolatiles - E |
| Preparation: | 3550B | Prep Batch: 680-77068 | | Lab File ID: | e61614.d |
| Dilution: | 1.0 | | | Initial Weight/Volume: | 30.02 g |
| Date Analyzed: | 06/07/2007 1703 | | | Final Weight/Volume: | 1 mL |
| Date Prepared: | 06/07/2007 1000 | | | Injection Volume: | |

| Analyte | DryWt Corrected: Y | Result (ug/Kg) | Qualifier | MDL | RL |
|---|---|---|---|---|---|
| Benzo[g,h,i]perylene | | 31 | U | 31 | 440 |
| Benzo[k]fluoranthene | | 48 | U | 48 | 440 |
| Acenaphthene | | 25 | U | 25 | 440 |
| Acenaphthylene | | 23 | U | 23 | 440 |
| Benzo[a]anthracene | | 41 | U | 41 | 440 |
| Benzo[a]pyrene | | 25 | U | 25 | 440 |
| Benzo[b]fluoranthene | | 35 | U | 35 | 440 |
| 1-Methylnaphthalene | | 39 | U | 39 | 440 |
| 2-Methylnaphthalene | | 32 | U | 32 | 440 |
| Chrysene | | 33 | U | 33 | 440 |
| Dibenz(a,h)anthracene | | 32 | U | 32 | 440 |
| Fluoranthene | | 35 | U | 35 | 440 |
| Fluorene | | 29 | U | 29 | 440 |
| Indeno[1,2,3-cd]pyrene | | 35 | U | 35 | 440 |
| Naphthalene | | 25 | U | 25 | 440 |
| Phenanthrene | | 39 | U | 39 | 440 |
| Pyrene | | 27 | U | 27 | 440 |
| Anthracene | | 31 | U | 31 | 440 |

| Surrogate | %Rec | Acceptance Limits |
|---|---|---|
| 2-Fluorobiphenyl | 55 | 38 - 104 |
| Nitrobenzene-d5 | 47 | 33 - 94 |
| Terphenyl-d14 | 54 | 40 - 129 |

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

**Client Sample ID:** **041M480910**

| | | | | | |
|---|---|---|---|---|---|
| Lab Sample ID: | 680-27062-3 | | | Date Sampled: | 05/24/2007 1630 |
| Client Matrix: | Solid | % Moisture: | 73.4 | Date Received: | 05/26/2007 0945 |

**8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)**

| | | | | | |
|---|---|---|---|---|---|
| Method: | 8270C | Analysis Batch: 680-77352 | | Instrument ID: | GC/MS SemiVolatiles - E |
| Preparation: | 3550B | Prep Batch: 680-77068 | | Lab File ID: | e61615.d |
| Dilution: | 10 | | | Initial Weight/Volume: | 30.16 g |
| Date Analyzed: | 06/07/2007 1728 | | | Final Weight/Volume: | 1 mL |
| Date Prepared: | 06/07/2007 1000 | | | Injection Volume: | |

| Analyte | DryWt Corrected: Y | Result (ug/Kg) | Qualifier | MDL | RL |
|---|---|---|---|---|---|
| Benzo[g,h,i]perylene | | 860 | U | 860 | 12000 |
| Benzo[k]fluoranthene | | 1300 | U | 1300 | 12000 |
| Acenaphthene | | 710 | U | 710 | 12000 |
| Acenaphthylene | | 640 | U | 640 | 12000 |
| Benzo[a]anthracene | | 1200 | U | 1200 | 12000 |
| Benzo[a]pyrene | | 710 | U | 710 | 12000 |
| Benzo[b]fluoranthene | | 970 | U | 970 | 12000 |
| 1-Methylnaphthalene | | 1400 | I | 1100 | 12000 |
| 2-Methylnaphthalene | | 1800 | I | 900 | 12000 |
| Chrysene | | 940 | U | 940 | 12000 |
| Dibenz(a,h)anthracene | | 900 | U | 900 | 12000 |
| Fluoranthene | | 970 | U | 970 | 12000 |
| Fluorene | | 820 | U | 820 | 12000 |
| Indeno[1,2,3-cd]pyrene | | 970 | U | 970 | 12000 |
| Naphthalene | | 1400 | I | 710 | 12000 |
| Phenanthrene | | 1100 | U | 1100 | 12000 |
| Pyrene | | 750 | U | 750 | 12000 |
| Anthracene | | 860 | U | 860 | 12000 |

| Surrogate | %Rec | | Acceptance Limits |
|---|---|---|---|
| 2-Fluorobiphenyl | 0 | J | 38 - 104 |
| Nitrobenzene-d5 | 0 | J | 33 - 94 |
| Terphenyl-d14 | 0 | J | 40 - 129 |

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

**Client Sample ID:** **041M480810**

| | | | | | |
|---|---|---|---|---|---|
| Lab Sample ID: | 680-27062-4 | | | Date Sampled: | 05/24/2007 1650 |
| Client Matrix: | Solid | % Moisture: | 83.4 | Date Received: | 05/26/2007 0945 |

**8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)**

| | | | | | |
|---|---|---|---|---|---|
| Method: | 8270C | Analysis Batch: 680-77352 | | Instrument ID: | GC/MS SemiVolatiles - E |
| Preparation: | 3550B | Prep Batch: 680-77068 | | Lab File ID: | e61616.d |
| Dilution: | 10 | | | Initial Weight/Volume: | 30.06 g |
| Date Analyzed: | 06/07/2007 1753 | | | Final Weight/Volume: | 1 mL |
| Date Prepared: | 06/07/2007 1000 | | | Injection Volume: | |

| Analyte | DryWt Corrected: Y | Result (ug/Kg) | Qualifier | MDL | RL |
|---|---|---|---|---|---|
| Benzo[g,h,i]perylene | | 1400 | U | 1400 | 20000 |
| Benzo[k]fluoranthene | | 2200 | U | 2200 | 20000 |
| Acenaphthene | | 1100 | U | 1100 | 20000 |
| Acenaphthylene | | 1000 | U | 1000 | 20000 |
| Benzo[a]anthracene | | 1900 | U | 1900 | 20000 |
| Benzo[a]pyrene | | 1100 | U | 1100 | 20000 |
| Benzo[b]fluoranthene | | 1600 | U | 1600 | 20000 |
| 1-Methylnaphthalene | | 1700 | U | 1700 | 20000 |
| 2-Methylnaphthalene | | 1400 | U | 1400 | 20000 |
| Chrysene | | 1500 | U | 1500 | 20000 |
| Dibenz(a,h)anthracene | | 1400 | U | 1400 | 20000 |
| Fluoranthene | | 1600 | U | 1600 | 20000 |
| Fluorene | | 1300 | U | 1300 | 20000 |
| Indeno[1,2,3-cd]pyrene | | 1600 | U | 1600 | 20000 |
| Naphthalene | | 1100 | U | 1100 | 20000 |
| Phenanthrene | | 1700 | U | 1700 | 20000 |
| Pyrene | | 1200 | U | 1200 | 20000 |
| Anthracene | | 1400 | U | 1400 | 20000 |

| Surrogate | %Rec | | Acceptance Limits |
|---|---|---|---|
| 2-Fluorobiphenyl | 0 | J | 38 - 104 |
| Nitrobenzene-d5 | 0 | J | 33 - 94 |
| Terphenyl-d14 | 0 | J | 40 - 129 |

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

**Client Sample ID:** **041M480210**

| | | | | | |
|---|---|---|---|---|---|
| Lab Sample ID: | 680-27062-5 | | | Date Sampled: | 05/24/2007 1700 |
| Client Matrix: | Solid | % Moisture: | 28.8 | Date Received: | 05/26/2007 0945 |

**8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)**

| | | | | | |
|---|---|---|---|---|---|
| Method: | 8270C | Analysis Batch: 680-77352 | | Instrument ID: | GC/MS SemiVolatiles - E |
| Preparation: | 3550B | Prep Batch: 680-77068 | | Lab File ID: | e61617.d |
| Dilution: | 10 | | | Initial Weight/Volume: | 30.19 g |
| Date Analyzed: | 06/07/2007 1818 | | | Final Weight/Volume: | 1 mL |
| Date Prepared: | 06/07/2007 1000 | | | Injection Volume: | |

| Analyte | DryWt Corrected: Y | Result (ug/Kg) | Qualifier | MDL | RL |
|---|---|---|---|---|---|
| Benzo[g,h,i]perylene | | 320 | U | 320 | 4600 |
| Benzo[k]fluoranthene | | 500 | U | 500 | 4600 |
| Acenaphthene | | 270 | U | 270 | 4600 |
| Acenaphthylene | | 240 | U | 240 | 4600 |
| Benzo[a]anthracene | | 430 | U | 430 | 4600 |
| Benzo[a]pyrene | | 270 | U | 270 | 4600 |
| Benzo[b]fluoranthene | | 360 | U | 360 | 4600 |
| 1-Methylnaphthalene | | 3300 | I | 400 | 4600 |
| 2-Methylnaphthalene | | 3900 | I | 340 | 4600 |
| Chrysene | | 350 | U | 350 | 4600 |
| Dibenz(a,h)anthracene | | 340 | U | 340 | 4600 |
| Fluoranthene | | 360 | U | 360 | 4600 |
| Fluorene | | 1100 | I | 310 | 4600 |
| Indeno[1,2,3-cd]pyrene | | 360 | U | 360 | 4600 |
| Naphthalene | | 270 | U | 270 | 4600 |
| Phenanthrene | | 1300 | I | 400 | 4600 |
| Pyrene | | 590 | I | 280 | 4600 |
| Anthracene | | 330 | I | 320 | 4600 |

| Surrogate | %Rec | | Acceptance Limits |
|---|---|---|---|
| 2-Fluorobiphenyl | 0 | J | 38 - 104 |
| Nitrobenzene-d5 | 0 | J | 33 - 94 |
| Terphenyl-d14 | 0 | J | 40 - 129 |

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

**Client Sample ID:** **041M480310**

| | | | | | |
|---|---|---|---|---|---|
| Lab Sample ID: | 680-27062-6 | | | Date Sampled: | 05/24/2007 1715 |
| Client Matrix: | Solid | % Moisture: | 83.1 | Date Received: | 05/26/2007 0945 |

**8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)**

| | | | | | |
|---|---|---|---|---|---|
| Method: | 8270C | Analysis Batch: 680-77352 | | Instrument ID: | GC/MS SemiVolatiles - E |
| Preparation: | 3550B | Prep Batch: 680-77068 | | Lab File ID: | e61618.d |
| Dilution: | 10 | | | Initial Weight/Volume: | 30.18 g |
| Date Analyzed: | 06/07/2007 1842 | | | Final Weight/Volume: | 1 mL |
| Date Prepared: | 06/07/2007 1000 | | | Injection Volume: | |

| Analyte | DryWt Corrected: Y | Result (ug/Kg) | Qualifier | MDL | RL |
|---|---|---|---|---|---|
| Benzo[g,h,i]perylene | | 1400 | U | 1400 | 19000 |
| Benzo[k]fluoranthene | | 2100 | U | 2100 | 19000 |
| Acenaphthene | | 1100 | U | 1100 | 19000 |
| Acenaphthylene | | 1000 | U | 1000 | 19000 |
| Benzo[a]anthracene | | 1800 | U | 1800 | 19000 |
| Benzo[a]pyrene | | 1100 | U | 1100 | 19000 |
| Benzo[b]fluoranthene | | 1500 | U | 1500 | 19000 |
| 1-Methylnaphthalene | | 1700 | U | 1700 | 19000 |
| 2-Methylnaphthalene | | 1400 | U | 1400 | 19000 |
| Chrysene | | 1500 | U | 1500 | 19000 |
| Dibenz(a,h)anthracene | | 1400 | U | 1400 | 19000 |
| Fluoranthene | | 1500 | U | 1500 | 19000 |
| Fluorene | | 1300 | U | 1300 | 19000 |
| Indeno[1,2,3-cd]pyrene | | 1500 | U | 1500 | 19000 |
| Naphthalene | | 1100 | U | 1100 | 19000 |
| Phenanthrene | | 1700 | U | 1700 | 19000 |
| Pyrene | | 1200 | U | 1200 | 19000 |
| Anthracene | | 1400 | U | 1400 | 19000 |

| Surrogate | %Rec | | Acceptance Limits |
|---|---|---|---|
| 2-Fluorobiphenyl | 0 | J | 38 - 104 |
| Nitrobenzene-d5 | 0 | J | 33 - 94 |
| Terphenyl-d14 | 0 | J | 40 - 129 |

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

**Client Sample ID:** **041M480510**

| | | | | | |
|---|---|---|---|---|---|
| Lab Sample ID: | 680-27062-7 | | | Date Sampled: | 05/24/2007 1730 |
| Client Matrix: | Solid | % Moisture: | 43.9 | Date Received: | 05/26/2007 0945 |

**8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)**

| | | | | | |
|---|---|---|---|---|---|
| Method: | 8270C | Analysis Batch: 680-77352 | | Instrument ID: | GC/MS SemiVolatiles - E |
| Preparation: | 3550B | Prep Batch: 680-77068 | | Lab File ID: | e61619.d |
| Dilution: | 1.0 | | | Initial Weight/Volume: | 30.14 g |
| Date Analyzed: | 06/07/2007 1907 | | | Final Weight/Volume: | 1 mL |
| Date Prepared: | 06/07/2007 1000 | | | Injection Volume: | |

| Analyte | DryWt Corrected: Y | Result (ug/Kg) | Qualifier | MDL | RL |
|---|---|---|---|---|---|
| Benzo[g,h,i]perylene | | 41 | U | 41 | 590 |
| Benzo[k]fluoranthene | | 64 | U | 64 | 590 |
| Acenaphthene | | 34 | U | 34 | 590 |
| Acenaphthylene | | 30 | U | 30 | 590 |
| Benzo[a]anthracene | | 55 | U | 55 | 590 |
| Benzo[a]pyrene | | 34 | U | 34 | 590 |
| Benzo[b]fluoranthene | | 46 | U | 46 | 590 |
| 1-Methylnaphthalene | | 51 | U | 51 | 590 |
| 2-Methylnaphthalene | | 43 | U | 43 | 590 |
| Chrysene | | 44 | U | 44 | 590 |
| Dibenz(a,h)anthracene | | 43 | U | 43 | 590 |
| Fluoranthene | | 46 | U | 46 | 590 |
| Fluorene | | 39 | U | 39 | 590 |
| Indeno[1,2,3-cd]pyrene | | 46 | U | 46 | 590 |
| Naphthalene | | 34 | U | 34 | 590 |
| Phenanthrene | | 51 | U | 51 | 590 |
| Pyrene | | 36 | U | 36 | 590 |
| Anthracene | | 41 | U | 41 | 590 |

| Surrogate | %Rec | Acceptance Limits |
|---|---|---|
| 2-Fluorobiphenyl | 55 | 38 - 104 |
| Nitrobenzene-d5 | 43 | 33 - 94 |
| Terphenyl-d14 | 54 | 40 - 129 |

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

**Client Sample ID:** **041M480410**

| | | | | | |
|---|---|---|---|---|---|
| Lab Sample ID: | 680-27062-8 | | | Date Sampled: | 05/24/2007 1750 |
| Client Matrix: | Solid | % Moisture: | 3.8 | Date Received: | 05/26/2007 0945 |

**8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)**

| | | | | | |
|---|---|---|---|---|---|
| Method: | 8270C | Analysis Batch: 680-77352 | | Instrument ID: | GC/MS SemiVolatiles - E |
| Preparation: | 3550B | Prep Batch: 680-77068 | | Lab File ID: | e61620.d |
| Dilution: | 1.0 | | | Initial Weight/Volume: | 30.09 g |
| Date Analyzed: | 06/07/2007 1932 | | | Final Weight/Volume: | 1 mL |
| Date Prepared: | 06/07/2007 1000 | | | Injection Volume: | |

| Analyte | DryWt Corrected: Y | Result (ug/Kg) | Qualifier | MDL | RL |
|---|---|---|---|---|---|
| Benzo[g,h,i]perylene | | 24 | U | 24 | 340 |
| Benzo[k]fluoranthene | | 37 | U | 37 | 340 |
| Acenaphthene | | 20 | U | 20 | 340 |
| Acenaphthylene | | 18 | U | 18 | 340 |
| Benzo[a]anthracene | | 32 | U | 32 | 340 |
| Benzo[a]pyrene | | 20 | U | 20 | 340 |
| Benzo[b]fluoranthene | | 27 | U | 27 | 340 |
| 1-Methylnaphthalene | | 30 | U | 30 | 340 |
| 2-Methylnaphthalene | | 25 | U | 25 | 340 |
| Chrysene | | 26 | U | 26 | 340 |
| Dibenz(a,h)anthracene | | 25 | U | 25 | 340 |
| Fluoranthene | | 27 | U | 27 | 340 |
| Fluorene | | 23 | U | 23 | 340 |
| Indeno[1,2,3-cd]pyrene | | 27 | U | 27 | 340 |
| Naphthalene | | 20 | U | 20 | 340 |
| Phenanthrene | | 30 | U | 30 | 340 |
| Pyrene | | 21 | U | 21 | 340 |
| Anthracene | | 24 | U | 24 | 340 |

| Surrogate | %Rec | Acceptance Limits |
|---|---|---|
| 2-Fluorobiphenyl | 50 | 38 - 104 |
| Nitrobenzene-d5 | 41 | 33 - 94 |
| Terphenyl-d14 | 52 | 40 - 129 |

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

**Client Sample ID:** **041M480610**

| | | | | | |
|---|---|---|---|---|---|
| Lab Sample ID: | 680-27062-9 | | | Date Sampled: | 05/24/2007 1805 |
| Client Matrix: | Solid | % Moisture: | 42.3 | Date Received: | 05/26/2007 0945 |

**8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)**

| | | | | | |
|---|---|---|---|---|---|
| Method: | 8270C | Analysis Batch: 680-77352 | | Instrument ID: | GC/MS SemiVolatiles - E |
| Preparation: | 3550B | Prep Batch: 680-77068 | | Lab File ID: | e61621.d |
| Dilution: | 1.0 | | | Initial Weight/Volume: | 30.02 g |
| Date Analyzed: | 06/07/2007 1957 | | | Final Weight/Volume: | 1 mL |
| Date Prepared: | 06/07/2007 1000 | | | Injection Volume: | |

| Analyte | DryWt Corrected: Y | Result (ug/Kg) | Qualifier | MDL | RL |
|---|---|---|---|---|---|
| Benzo[g,h,i]perylene | | 40 | U | 40 | 570 |
| Benzo[k]fluoranthene | | 62 | U | 62 | 570 |
| Acenaphthene | | 33 | U | 33 | 570 |
| Acenaphthylene | | 29 | U | 29 | 570 |
| Benzo[a]anthracene | | 54 | U | 54 | 570 |
| Benzo[a]pyrene | | 33 | U | 33 | 570 |
| Benzo[b]fluoranthene | | 45 | U | 45 | 570 |
| 1-Methylnaphthalene | | 50 | U | 50 | 570 |
| 2-Methylnaphthalene | | 42 | U | 42 | 570 |
| Chrysene | | 43 | U | 43 | 570 |
| Dibenz(a,h)anthracene | | 42 | U | 42 | 570 |
| Fluoranthene | | 45 | U | 45 | 570 |
| Fluorene | | 38 | U | 38 | 570 |
| Indeno[1,2,3-cd]pyrene | | 45 | U | 45 | 570 |
| Naphthalene | | 33 | U | 33 | 570 |
| Phenanthrene | | 50 | U | 50 | 570 |
| Pyrene | | 35 | U | 35 | 570 |
| Anthracene | | 40 | U | 40 | 570 |

| Surrogate | %Rec | Acceptance Limits |
|---|---|---|
| 2-Fluorobiphenyl | 48 | 38 - 104 |
| Nitrobenzene-d5 | 42 | 33 - 94 |
| Terphenyl-d14 | 49 | 40 - 129 |

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

**Client Sample ID:** **041M480710**

| | | | | | |
|---|---|---|---|---|---|
| Lab Sample ID: | 680-27062-10 | | | Date Sampled: | 05/24/2007 1815 |
| Client Matrix: | Solid | % Moisture: | 48.5 | Date Received: | 05/26/2007 0945 |

**8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)**

| | | | | | |
|---|---|---|---|---|---|
| Method: | 8270C | Analysis Batch: 680-77352 | | Instrument ID: | GC/MS SemiVolatiles - E |
| Preparation: | 3550B | Prep Batch: 680-77068 | | Lab File ID: | e61622.d |
| Dilution: | 1.0 | | | Initial Weight/Volume: | 30.08 g |
| Date Analyzed: | 06/07/2007 2022 | | | Final Weight/Volume: | 1 mL |
| Date Prepared: | 06/07/2007 1000 | | | Injection Volume: | |

| Analyte | DryWt Corrected: Y | Result (ug/Kg) | Qualifier | MDL | RL |
|---|---|---|---|---|---|
| Benzo[g,h,i]perylene | | 45 | U | 45 | 640 |
| Benzo[k]fluoranthene | | 70 | U | 70 | 640 |
| Acenaphthene | | 37 | U | 37 | 640 |
| Acenaphthylene | | 33 | U | 33 | 640 |
| Benzo[a]anthracene | | 60 | U | 60 | 640 |
| Benzo[a]pyrene | | 37 | U | 37 | 640 |
| Benzo[b]fluoranthene | | 50 | U | 50 | 640 |
| 1-Methylnaphthalene | | 56 | U | 56 | 640 |
| 2-Methylnaphthalene | | 46 | U | 46 | 640 |
| Chrysene | | 48 | U | 48 | 640 |
| Dibenz(a,h)anthracene | | 46 | U | 46 | 640 |
| Fluoranthene | | 50 | U | 50 | 640 |
| Fluorene | | 43 | U | 43 | 640 |
| Indeno[1,2,3-cd]pyrene | | 50 | U | 50 | 640 |
| Naphthalene | | 37 | U | 37 | 640 |
| Phenanthrene | | 56 | U | 56 | 640 |
| Pyrene | | 39 | U | 39 | 640 |
| Anthracene | | 45 | U | 45 | 640 |

| Surrogate | %Rec | Acceptance Limits |
|---|---|---|
| 2-Fluorobiphenyl | 52 | 38 - 104 |
| Nitrobenzene-d5 | 44 | 33 - 94 |
| Terphenyl-d14 | 56 | 40 - 129 |

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

**Client Sample ID:** **041M480110**

| | | | | | |
|---|---|---|---|---|---|
| Lab Sample ID: | 680-27062-1 | | | Date Sampled: | 05/24/2007 1600 |
| Client Matrix: | Solid | % Moisture: | 30.6 | Date Received: | 05/26/2007 0945 |

**8081A_8082 Organochlorine Pesticides & Polychlorinated Biphenyls by Gas Chromatography**

| | | | | | |
|---|---|---|---|---|---|
| Method: | 8081A_8082 | Analysis Batch: 680-77454 | | Instrument ID: | GC SemiVolatiles - M |
| Preparation: | 3550B | Prep Batch: 680-77069 | | Lab File ID: | mf11008.d |
| Dilution: | 10 | | | Initial Weight/Volume: | 30.06 g |
| Date Analyzed: | 06/11/2007 1433 | | | Final Weight/Volume: | 10 mL |
| Date Prepared: | 06/07/2007 1035 | | | Injection Volume: | |
| | | | | Column ID: | PRIMARY |

| Analyte | DryWt Corrected: Y | Result (ug/Kg) | Qualifier | MDL | RL |
|---|---|---|---|---|---|
| 4,4'-DDD | | 2500 | L | 4.3 | 47 |
| 4,4'-DDE | | 91 | | 4.3 | 47 |
| gamma-BHC (Lindane) | | 2.0 | U | 2.0 | 24 |
| 4,4'-DDT | | 3900 | L | 3.9 | 47 |
| Aldrin | | 2.0 | U | 2.0 | 24 |
| alpha-BHC | | 7.5 | U | 7.5 | 24 |
| beta-BHC | | 6.8 | U | 6.8 | 24 |
| Chlordane (technical) | | 43 | U | 43 | 240 |
| delta-BHC | | 3.3 | U | 3.3 | 24 |
| alpha-Chlordane | | 2.4 | U | 2.4 | 24 |
| Dieldrin | | 5.0 | U | 5.0 | 47 |
| Endosulfan I | | 2.3 | U | 2.3 | 24 |
| Endosulfan II | | 3.9 | U | 3.9 | 47 |
| Endosulfan sulfate | | 5.3 | U J | 5.3 | 47 |
| Endrin | | 4.6 | U | 4.6 | 47 |
| Endrin aldehyde | | 9.4 | U | 9.4 | 47 |
| Endrin ketone | | 4.6 | U | 4.6 | 47 |
| Heptachlor | | 4.6 | U | 4.6 | 24 |
| Heptachlor epoxide | | 3.0 | U | 3.0 | 24 |
| Methoxychlor | | 6.8 | U | 6.8 | 240 |
| Toxaphene | | 170 | U | 170 | 2400 |
| gamma-Chlordane | | 3.2 | U | 3.2 | 24 |

| Surrogate | %Rec | | Acceptance Limits |
|---|---|---|---|
| DCB Decachlorobiphenyl | 0 | U | 30 - 150 |
| Tetrachloro-m-xylene | 0 | U | 30 - 150 |

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

**Client Sample ID:** **041M480110**

| | | | | | |
|---|---|---|---|---|---|
| Lab Sample ID: | 680-27062-1 | | | Date Sampled: | 05/24/2007 1600 |
| Client Matrix: | Solid | % Moisture: | 30.6 | Date Received: | 05/26/2007 0945 |

**8081A_8082 Organochlorine Pesticides & Polychlorinated Biphenyls by Gas Chromatography**

| | | | | | |
|---|---|---|---|---|---|
| Method: | 8081A_8082 | Analysis Batch: 680-77454 | | Instrument ID: | GC SemiVolatiles - M |
| Preparation: | 3550B | Prep Batch: 680-77069 | | Lab File ID: | mf11009.d |
| Dilution: | 100 | | | Initial Weight/Volume: | 30.06 g |
| Date Analyzed: | 06/11/2007 1452 | Run Type: | DL | Final Weight/Volume: | 10 mL |
| Date Prepared: | 06/07/2007 1035 | | | Injection Volume: | |
| | | | | Column ID: | SECONDARY |

| Analyte | DryWt Corrected: Y | Result (ug/Kg) | Qualifier | MDL | RL |
|---|---|---|---|---|---|
| 4,4'-DDD | | 5100 | | 43 | 470 |
| 4,4'-DDE | | 140 | I | 43 | 470 |
| gamma-BHC (Lindane) | | 20 | U | 20 | 240 |
| 4,4'-DDT | | 7100 | | 39 | 470 |
| Aldrin | | 20 | U | 20 | 240 |
| alpha-BHC | | 75 | U | 75 | 240 |
| beta-BHC | | 68 | U | 68 | 240 |
| Chlordane (technical) | | 430 | U | 430 | 2400 |
| delta-BHC | | 33 | U | 33 | 240 |
| alpha-Chlordane | | 24 | U | 24 | 240 |
| Dieldrin | | 50 | U | 50 | 470 |
| Endosulfan I | | 23 | U | 23 | 240 |
| Endosulfan II | | 39 | U | 39 | 470 |
| Endosulfan sulfate | | 53 | U J | 53 | 470 |
| Endrin | | 46 | U | 46 | 470 |
| Endrin aldehyde | | 94 | U | 94 | 470 |
| Endrin ketone | | 46 | U | 46 | 470 |
| Heptachlor | | 46 | U | 46 | 240 |
| Heptachlor epoxide | | 30 | U | 30 | 240 |
| Methoxychlor | | 68 | U | 68 | 2400 |
| Toxaphene | | 1700 | U | 1700 | 24000 |
| gamma-Chlordane | | 32 | U | 32 | 240 |

| Surrogate | %Rec | | Acceptance Limits |
|---|---|---|---|
| DCB Decachlorobiphenyl | 0 | U | 30 - 150 |
| Tetrachloro-m-xylene | 0 | U | 30 - 150 |

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

**Client Sample ID:** **041N480110**

| | | | | | |
|---|---|---|---|---|---|
| Lab Sample ID: | 680-27062-2 | | | Date Sampled: | 05/24/2007 1600 |
| Client Matrix: | Solid | % Moisture: | 24.9 | Date Received: | 05/26/2007 0945 |

**8081A_8082 Organochlorine Pesticides & Polychlorinated Biphenyls by Gas Chromatography**

| | | | | | |
|---|---|---|---|---|---|
| Method: | 8081A_8082 | Analysis Batch: 680-77317 | | Instrument ID: | GC SemiVolatiles - M |
| Preparation: | 3550B | Prep Batch: 680-77069 | | Lab File ID: | mf08023.d |
| Dilution: | 25 | | | Initial Weight/Volume: | 30.17 g |
| Date Analyzed: | 06/08/2007 1954 | | | Final Weight/Volume: | 10 mL |
| Date Prepared: | 06/07/2007 1035 | | | Injection Volume: | |
| | | | | Column ID: | PRIMARY |

| Analyte | DryWt Corrected: Y | Result (ug/Kg) | Qualifier | MDL | RL |
|---|---|---|---|---|---|
| 4,4'-DDD | | 3700 | L | 9.9 | 110 |
| 4,4'-DDE | | 140 | | 9.9 | 110 |
| gamma-BHC (Lindane) | | 4.6 | U | 4.6 | 56 |
| Aldrin | | 4.6 | U | 4.6 | 56 |
| alpha-BHC | | 17 | U | 17 | 56 |
| beta-BHC | | 16 | U | 16 | 56 |
| Chlordane (technical) | | 99 | U | 99 | 560 |
| delta-BHC | | 7.6 | U | 7.6 | 56 |
| alpha-Chlordane | | 5.6 | U | 5.6 | 56 |
| Dieldrin | | 12 | U | 12 | 110 |
| Endosulfan I | | 5.3 | U | 5.3 | 56 |
| Endosulfan II | | 8.9 | U | 8.9 | 110 |
| Endosulfan sulfate | | 12 | U J | 12 | 110 |
| Endrin | | 11 | U | 11 | 110 |
| Endrin aldehyde | | 22 | U | 22 | 110 |
| Endrin ketone | | 11 | U | 11 | 110 |
| Heptachlor | | 11 | U | 11 | 56 |
| Heptachlor epoxide | | 7.0 | U | 7.0 | 56 |
| Toxaphene | | 400 | U | 400 | 5600 |
| gamma-Chlordane | | 7.3 | U | 7.3 | 56 |

| Surrogate | %Rec | | Acceptance Limits |
|---|---|---|---|
| DCB Decachlorobiphenyl | 0 | U | 30 - 150 |
| Tetrachloro-m-xylene | 0 | U | 30 - 150 |

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

**Client Sample ID:** **041N480110**

| | | | | | |
|---|---|---|---|---|---|
| Lab Sample ID: | 680-27062-2 | | | Date Sampled: | 05/24/2007 1600 |
| Client Matrix: | Solid | % Moisture: | 24.9 | Date Received: | 05/26/2007 0945 |

**8081A_8082 Organochlorine Pesticides & Polychlorinated Biphenyls by Gas Chromatography**

| | | | | | |
|---|---|---|---|---|---|
| Method: | 8081A_8082 | Analysis Batch: 680-77454 | | Instrument ID: | GC SemiVolatiles - M |
| Preparation: | 3550B | Prep Batch: 680-77069 | | Lab File ID: | mf11010.d |
| Dilution: | 100 | | | Initial Weight/Volume: | 30.17 g |
| Date Analyzed: | 06/11/2007 1512 | | | Final Weight/Volume: | 10 mL |
| Date Prepared: | 06/07/2007 1035 | | | Injection Volume: | |
| | | | | Column ID: | PRIMARY |

| Analyte | DryWt Corrected: Y | Result (ug/Kg) | Qualifier | MDL | RL |
|---|---|---|---|---|---|
| 4,4'-DDT | | 5100 | | 36 | 440 |
| Methoxychlor | | 62 | U | 62 | 2300 |

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

**Client Sample ID:** **041N480110**

| | | | | | |
|---|---|---|---|---|---|
| Lab Sample ID: | 680-27062-2 | | | Date Sampled: | 05/24/2007 1600 |
| Client Matrix: | Solid | % Moisture: | 24.9 | Date Received: | 05/26/2007 0945 |

**8081A_8082 Organochlorine Pesticides & Polychlorinated Biphenyls by Gas Chromatography**

| | | | | | |
|---|---|---|---|---|---|
| Method: | 8081A_8082 | Analysis Batch: 680-77317 | | Instrument ID: | GC SemiVolatiles - M |
| Preparation: | 3550B | Prep Batch: 680-77069 | | Lab File ID: | mf08024.d |
| Dilution: | 250 | | | Initial Weight/Volume: | 30.17 g |
| Date Analyzed: | 06/08/2007 2014 | | | Final Weight/Volume: | 10 mL |
| Date Prepared: | 06/07/2007 1035 | | | Injection Volume: | |
| | | | | Column ID: | SECONDARY |

| Analyte | DryWt Corrected: Y | Result (ug/Kg) | Qualifier | MDL | RL |
|---|---|---|---|---|---|
| 4,4'-DDD | | 3600 | | 99 | 1100 |
| 4,4'-DDE | | 140 | I | 99 | 1100 |
| gamma-BHC (Lindane) | | 46 | U | 46 | 560 |
| Aldrin | | 46 | U | 46 | 560 |
| alpha-BHC | | 170 | U | 170 | 560 |
| beta-BHC | | 160 | U | 160 | 560 |
| Chlordane (technical) | | 990 | U | 990 | 5600 |
| delta-BHC | | 76 | U | 76 | 560 |
| alpha-Chlordane | | 56 | U | 56 | 560 |
| Dieldrin | | 120 | U | 120 | 1100 |
| Endosulfan I | | 53 | U | 53 | 560 |
| Endosulfan II | | 89 | U | 89 | 1100 |
| Endosulfan sulfate | | 120 | U J | 120 | 1100 |
| Endrin | | 110 | U | 110 | 1100 |
| Endrin aldehyde | | 220 | U | 220 | 1100 |
| Endrin ketone | | 110 | U | 110 | 1100 |
| Heptachlor | | 110 | U | 110 | 560 |
| Heptachlor epoxide | | 70 | U | 70 | 560 |
| Toxaphene | | 4000 | U | 4000 | 56000 |
| gamma-Chlordane | | 73 | U | 73 | 560 |

| Surrogate | %Rec | | Acceptance Limits |
|---|---|---|---|
| DCB Decachlorobiphenyl | 0 | U | 30 - 150 |
| Tetrachloro-m-xylene | 0 | U | 30 - 150 |

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

**Client Sample ID:** **041M480910**

| | | | | | |
|---|---|---|---|---|---|
| Lab Sample ID: | 680-27062-3 | | | Date Sampled: | 05/24/2007 1630 |
| Client Matrix: | Solid | % Moisture: | 73.4 | Date Received: | 05/26/2007 0945 |

**8081A_8082 Organochlorine Pesticides & Polychlorinated Biphenyls by Gas Chromatography**

| | | | | | |
|---|---|---|---|---|---|
| Method: | 8081A_8082 | Analysis Batch: 680-77317 | | Instrument ID: | GC SemiVolatiles - M |
| Preparation: | 3550B | Prep Batch: 680-77069 | | Lab File ID: | mf08016.d |
| Dilution: | 5.0 | | | Initial Weight/Volume: | 30.19 g |
| Date Analyzed: | 06/08/2007 1738 | | | Final Weight/Volume: | 10 mL |
| Date Prepared: | 06/07/2007 1035 | | | Injection Volume: | |
| | | | | Column ID: | PRIMARY |

| Analyte | DryWt Corrected: Y | Result (ug/Kg) | Qualifier | MDL | RL |
|---|---|---|---|---|---|
| 4,4'-DDD | | 4400 | L | 5.6 | 62 |
| 4,4'-DDE | | 700 | | 5.6 | 62 |
| gamma-BHC (Lindane) | | 2.6 | U | 2.6 | 32 |
| Aldrin | | 2.6 | U | 2.6 | 32 |
| alpha-BHC | | 9.7 | U | 9.7 | 32 |
| beta-BHC | | 8.8 | U | 8.8 | 32 |
| Chlordane (technical) | | 56 | U | 56 | 320 |
| delta-BHC | | 4.3 | U | 4.3 | 32 |
| alpha-Chlordane | | 3.2 | U | 3.2 | 32 |
| Dieldrin | | 6.5 | U | 6.5 | 62 |
| Endosulfan I | | 3.0 | U | 3.0 | 32 |
| Endosulfan II | | 5.1 | U | 5.1 | 62 |
| Endosulfan sulfate | | 47 | I J | 6.9 | 62 |
| Endrin | | 6.0 | U | 6.0 | 62 |
| Endrin aldehyde | | 12 | U | 12 | 62 |
| Endrin ketone | | 6.0 | U | 6.0 | 62 |
| Heptachlor | | 6.0 | U | 6.0 | 32 |
| Heptachlor epoxide | | 3.9 | U | 3.9 | 32 |
| Toxaphene | | 220 | U | 220 | 3200 |
| gamma-Chlordane | | 53 | | 4.1 | 32 |

| Surrogate | %Rec | | Acceptance Limits |
|---|---|---|---|
| DCB Decachlorobiphenyl | 152 | J | 30 - 150 |
| Tetrachloro-m-xylene | 117 | | 30 - 150 |

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

**Client Sample ID:** **041M480910**

| | | | | | |
|---|---|---|---|---|---|
| Lab Sample ID: | 680-27062-3 | | | Date Sampled: | 05/24/2007 1630 |
| Client Matrix: | Solid | % Moisture: | 73.4 | Date Received: | 05/26/2007 0945 |

**8081A_8082 Organochlorine Pesticides & Polychlorinated Biphenyls by Gas Chromatography**

| | | | | | |
|---|---|---|---|---|---|
| Method: | 8081A_8082 | Analysis Batch: 680-77317 | | Instrument ID: | GC SemiVolatiles - M |
| Preparation: | 3550B | Prep Batch: 680-77069 | | Lab File ID: | mf08017.d |
| Dilution: | 25 | | | Initial Weight/Volume: | 30.19 g |
| Date Analyzed: | 06/08/2007 1757 | Run Type: | DL | Final Weight/Volume: | 10 mL |
| Date Prepared: | 06/07/2007 1035 | | | Injection Volume: | |
| | | | | Column ID: | SECONDARY |

| Analyte | DryWt Corrected: Y | Result (ug/Kg) | Qualifier | MDL | RL |
|---|---|---|---|---|---|
| 4,4'-DDD | | 4700 | | 28 | 310 |
| 4,4'-DDE | | 520 | | 28 | 310 |
| gamma-BHC (Lindane) | | 13 | U | 13 | 160 |
| Aldrin | | 13 | U | 13 | 160 |
| alpha-BHC | | 49 | U | 49 | 160 |
| beta-BHC | | 44 | U | 44 | 160 |
| Chlordane (technical) | | 280 | U | 280 | 1600 |
| delta-BHC | | 22 | U | 22 | 160 |
| alpha-Chlordane | | 16 | U | 16 | 160 |
| Dieldrin | | 33 | U | 33 | 310 |
| Endosulfan I | | 15 | U | 15 | 160 |
| Endosulfan II | | 25 | U | 25 | 310 |
| Endosulfan sulfate | | 44 | I J | 35 | 310 |
| Endrin | | 30 | U | 30 | 310 |
| Endrin aldehyde | | 61 | U | 61 | 310 |
| Endrin ketone | | 30 | U | 30 | 310 |
| Heptachlor | | 30 | U | 30 | 160 |
| Heptachlor epoxide | | 20 | U | 20 | 160 |
| Toxaphene | | 1100 | U | 1100 | 16000 |
| gamma-Chlordane | | 21 | U | 21 | 160 |

| Surrogate | %Rec | | Acceptance Limits |
|---|---|---|---|
| DCB Decachlorobiphenyl | 0 | U | 30 - 150 |
| Tetrachloro-m-xylene | 0 | U | 30 - 150 |

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

**Client Sample ID:** **041M480910**

| | | | | | |
|---|---|---|---|---|---|
| Lab Sample ID: | 680-27062-3 | | | Date Sampled: | 05/24/2007 1630 |
| Client Matrix: | Solid | % Moisture: | 73.4 | Date Received: | 05/26/2007 0945 |

**8081A_8082 Organochlorine Pesticides & Polychlorinated Biphenyls by Gas Chromatography**

| | | | | | |
|---|---|---|---|---|---|
| Method: | 8081A_8082 | Analysis Batch: 680-77454 | | Instrument ID: | GC SemiVolatiles - M |
| Preparation: | 3550B | Prep Batch: 680-77069 | | Lab File ID: | mf11011.d |
| Dilution: | 40 | | | Initial Weight/Volume: | 30.19 g |
| Date Analyzed: | 06/11/2007 1531 | | | Final Weight/Volume: | 10 mL |
| Date Prepared: | 06/07/2007 1035 | | | Injection Volume: | |
| | | | | Column ID: | PRIMARY |

| Analyte | DryWt Corrected: Y | Result (ug/Kg) | Qualifier | MDL | RL |
|---|---|---|---|---|---|
| 4,4'-DDT | | 40 | U | 40 | 490 |
| Methoxychlor | | 70 | U | 70 | 2500 |

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

**Client Sample ID:** **041M480810**

| | | | | | |
|---|---|---|---|---|---|
| Lab Sample ID: | 680-27062-4 | | | Date Sampled: | 05/24/2007 1650 |
| Client Matrix: | Solid | % Moisture: | 83.4 | Date Received: | 05/26/2007 0945 |

**8081A_8082 Organochlorine Pesticides & Polychlorinated Biphenyls by Gas Chromatography**

| | | | | | |
|---|---|---|---|---|---|
| Method: | 8081A_8082 | Analysis Batch: 680-77317 | | Instrument ID: | GC SemiVolatiles - M |
| Preparation: | 3550B | Prep Batch: 680-77069 | | Lab File ID: | mf08013.d |
| Dilution: | 5.0 | | | Initial Weight/Volume: | 30.03 g |
| Date Analyzed: | 06/08/2007 1639 | | | Final Weight/Volume: | 10 mL |
| Date Prepared: | 06/07/2007 1035 | | | Injection Volume: | |
| | | | | Column ID: | PRIMARY |

| Analyte | DryWt Corrected: Y | Result (ug/Kg) | Qualifier | MDL | RL |
|---|---|---|---|---|---|
| 4,4'-DDD | | 210 | | 9.0 | 99 |
| 4,4'-DDE | | 57 | I | 9.0 | 99 |
| gamma-BHC (Lindane) | | 4.2 | U | 4.2 | 51 |
| Aldrin | | 4.2 | U | 4.2 | 51 |
| alpha-BHC | | 16 | U | 16 | 51 |
| beta-BHC | | 14 | U | 14 | 51 |
| Chlordane (technical) | | 90 | U | 90 | 510 |
| delta-BHC | | 6.9 | U | 6.9 | 51 |
| alpha-Chlordane | | 5.1 | U | 5.1 | 51 |
| Dieldrin | | 14 | I | 11 | 99 |
| Endosulfan I | | 4.8 | U | 4.8 | 51 |
| Endosulfan II | | 8.1 | U | 8.1 | 99 |
| Endosulfan sulfate | | 11 | U J | 11 | 99 |
| Endrin | | 9.6 | U | 9.6 | 99 |
| Endrin aldehyde | | 20 | U | 20 | 99 |
| Endrin ketone | | 9.6 | U | 9.6 | 99 |
| Heptachlor | | 9.6 | U | 9.6 | 51 |
| Heptachlor epoxide | | 6.3 | U | 6.3 | 51 |
| Toxaphene | | 360 | U | 360 | 5100 |
| gamma-Chlordane | | 21 | I | 6.6 | 51 |

| Surrogate | %Rec | Acceptance Limits |
|---|---|---|
| DCB Decachlorobiphenyl | 96 | 30 - 150 |
| Tetrachloro-m-xylene | 86 | 30 - 150 |

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

**Client Sample ID:** **041M480810**

| | | | | | |
|---|---|---|---|---|---|
| Lab Sample ID: | 680-27062-4 | | | Date Sampled: | 05/24/2007 1650 |
| Client Matrix: | Solid | % Moisture: | 83.4 | Date Received: | 05/26/2007 0945 |

**8081A_8082 Organochlorine Pesticides & Polychlorinated Biphenyls by Gas Chromatography**

| | | | | | |
|---|---|---|---|---|---|
| Method: | 8081A_8082 | Analysis Batch: 680-77454 | | Instrument ID: | GC SemiVolatiles - M |
| Preparation: | 3550B | Prep Batch: 680-77069 | | Lab File ID: | mf11012.d |
| Dilution: | 20 | | | Initial Weight/Volume: | 30.03 g |
| Date Analyzed: | 06/11/2007 1551 | | | Final Weight/Volume: | 10 mL |
| Date Prepared: | 06/07/2007 1035 | | | Injection Volume: | |
| | | | | Column ID: | PRIMARY |

| Analyte | DryWt Corrected: Y | Result (ug/Kg) | Qualifier | MDL | RL |
|---|---|---|---|---|---|
| 4,4'-DDT | | 32 | U | 32 | 400 |
| Methoxychlor | | 57 | U | 57 | 2000 |

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

**Client Sample ID:** **041M480210**

| | | | | | |
|---|---|---|---|---|---|
| Lab Sample ID: | 680-27062-5 | | | Date Sampled: | 05/24/2007 1700 |
| Client Matrix: | Solid | % Moisture: | 28.8 | Date Received: | 05/26/2007 0945 |

**8081A_8082 Organochlorine Pesticides & Polychlorinated Biphenyls by Gas Chromatography**

| | | | | | |
|---|---|---|---|---|---|
| Method: | 8081A_8082 | Analysis Batch: 680-77317 | | Instrument ID: | GC SemiVolatiles - M |
| Preparation: | 3550B | Prep Batch: 680-77069 | | Lab File ID: | mf08019.d |
| Dilution: | 50 | | | Initial Weight/Volume: | 30.04 g |
| Date Analyzed: | 06/08/2007 1836 | | | Final Weight/Volume: | 10 mL |
| Date Prepared: | 06/07/2007 1035 | | | Injection Volume: | |
| | | | | Column ID: | PRIMARY |

| Analyte | DryWt Corrected: Y | Result (ug/Kg) | Qualifier | MDL | RL |
|---|---|---|---|---|---|
| 4,4'-DDD | | 20000 | L | 21 | 230 |
| 4,4'-DDE | | 930 | | 21 | 230 |
| gamma-BHC (Lindane) | | 9.8 | U | 9.8 | 120 |
| Aldrin | | 9.8 | U | 9.8 | 120 |
| alpha-BHC | | 36 | U | 36 | 120 |
| beta-BHC | | 33 | U | 33 | 120 |
| Chlordane (technical) | | 210 | U | 210 | 1200 |
| delta-BHC | | 16 | U | 16 | 120 |
| alpha-Chlordane | | 12 | U | 12 | 120 |
| Dieldrin | | 25 | U | 25 | 230 |
| Endosulfan I | | 11 | U | 11 | 120 |
| Endosulfan II | | 19 | U | 19 | 230 |
| Endosulfan sulfate | | 26 | U J | 26 | 230 |
| Endrin | | 22 | U | 22 | 230 |
| Endrin aldehyde | | 46 | U | 46 | 230 |
| Endrin ketone | | 22 | U | 22 | 230 |
| Heptachlor | | 22 | U | 22 | 120 |
| Heptachlor epoxide | | 15 | U | 15 | 120 |
| Toxaphene | | 840 | U | 840 | 12000 |
| gamma-Chlordane | | 15 | U | 15 | 120 |

| Surrogate | %Rec | | Acceptance Limits |
|---|---|---|---|
| DCB Decachlorobiphenyl | 0 | U | 30 - 150 |
| Tetrachloro-m-xylene | 0 | U | 30 - 150 |

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

**Client Sample ID:** **041M480210**

| | | | | | |
|---|---|---|---|---|---|
| Lab Sample ID: | 680-27062-5 | | | Date Sampled: | 05/24/2007 1700 |
| Client Matrix: | Solid | % Moisture: | 28.8 | Date Received: | 05/26/2007 0945 |

**8081A_8082 Organochlorine Pesticides & Polychlorinated Biphenyls by Gas Chromatography**

| | | | | | |
|---|---|---|---|---|---|
| Method: | 8081A_8082 | Analysis Batch: 680-77454 | | Instrument ID: | GC SemiVolatiles - M |
| Preparation: | 3550B | Prep Batch: 680-77069 | | Lab File ID: | mf11013.d |
| Dilution: | 100 | | | Initial Weight/Volume: | 30.04 g |
| Date Analyzed: | 06/11/2007 1610 | | | Final Weight/Volume: | 10 mL |
| Date Prepared: | 06/07/2007 1035 | | | Injection Volume: | |
| | | | | Column ID: | PRIMARY |

| Analyte | DryWt Corrected: Y | Result (ug/Kg) | Qualifier | MDL | RL |
|---|---|---|---|---|---|
| 4,4'-DDT | | 470 | | 38 | 460 |
| Methoxychlor | | 66 | U | 66 | 2400 |

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

**Client Sample ID:** **041M480210**

| | | | | | |
|---|---|---|---|---|---|
| Lab Sample ID: | 680-27062-5 | | | Date Sampled: | 05/24/2007 1700 |
| Client Matrix: | Solid | % Moisture: | 28.8 | Date Received: | 05/26/2007 0945 |

**8081A_8082 Organochlorine Pesticides & Polychlorinated Biphenyls by Gas Chromatography**

| | | | | | |
|---|---|---|---|---|---|
| Method: | 8081A_8082 | Analysis Batch: 680-77317 | | Instrument ID: | GC SemiVolatiles - M |
| Preparation: | 3550B | Prep Batch: 680-77069 | | Lab File ID: | mf08020.d |
| Dilution: | 500 | | | Initial Weight/Volume: | 30.04 g |
| Date Analyzed: | 06/08/2007 1856 | Run Type: | DL | Final Weight/Volume: | 10 mL |
| Date Prepared: | 06/07/2007 1035 | | | Injection Volume: | |
| | | | | Column ID: | SECONDARY |

| Analyte | DryWt Corrected: Y | Result (ug/Kg) | Qualifier | MDL | RL |
|---|---|---|---|---|---|
| 4,4'-DDD | | 13000 | | 210 | 2300 |
| 4,4'-DDE | | 680 | I | 210 | 2300 |
| gamma-BHC (Lindane) | | 98 | U | 98 | 1200 |
| Aldrin | | 98 | U | 98 | 1200 |
| alpha-BHC | | 360 | U | 360 | 1200 |
| beta-BHC | | 330 | U | 330 | 1200 |
| Chlordane (technical) | | 2100 | U | 2100 | 12000 |
| delta-BHC | | 160 | U | 160 | 1200 |
| alpha-Chlordane | | 120 | U | 120 | 1200 |
| Dieldrin | | 250 | U | 250 | 2300 |
| Endosulfan I | | 110 | U | 110 | 1200 |
| Endosulfan II | | 190 | U | 190 | 2300 |
| Endosulfan sulfate | | 260 | U J | 260 | 2300 |
| Endrin | | 220 | U | 220 | 2300 |
| Endrin aldehyde | | 460 | U | 460 | 2300 |
| Endrin ketone | | 220 | U | 220 | 2300 |
| Heptachlor | | 220 | U | 220 | 1200 |
| Heptachlor epoxide | | 150 | U | 150 | 1200 |
| Toxaphene | | 8400 | U | 8400 | 120000 |
| gamma-Chlordane | | 150 | U | 150 | 1200 |

| Surrogate | %Rec | | Acceptance Limits |
|---|---|---|---|
| DCB Decachlorobiphenyl | 0 | U | 30 - 150 |
| Tetrachloro-m-xylene | 0 | U | 30 - 150 |

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

**Client Sample ID:** **041M480310**

Lab Sample ID: 680-27062-6
Client Matrix: Solid
% Moisture: 83.1
Date Sampled: 05/24/2007 1715
Date Received: 05/26/2007 0945

**8081A_8082 Organochlorine Pesticides & Polychlorinated Biphenyls by Gas Chromatography**

Method: 8081A_8082
Preparation: 3550B
Dilution: 4.0
Date Analyzed: 06/08/2007 1659
Date Prepared: 06/07/2007 1035

Analysis Batch: 680-77317
Prep Batch: 680-77069

Instrument ID: GC SemiVolatiles - M
Lab File ID: mf08014.d
Initial Weight/Volume: 30.13 g
Final Weight/Volume: 10 mL
Injection Volume:
Column ID: PRIMARY

| Analyte | DryWt Corrected: Y | Result (ug/Kg) | Qualifier | MDL | RL |
|---|---|---|---|---|---|
| 4,4'-DDD | | 1500 | | 7.1 | 78 |
| 4,4'-DDE | | 250 | | 7.1 | 78 |
| gamma-BHC (Lindane) | | 3.3 | U | 3.3 | 40 |
| Aldrin | | 3.3 | U | 3.3 | 40 |
| alpha-BHC | | 12 | U | 12 | 40 |
| beta-BHC | | 11 | U | 11 | 40 |
| Chlordane (technical) | | 71 | U | 71 | 400 |
| delta-BHC | | 5.4 | U | 5.4 | 40 |
| alpha-Chlordane | | 4.0 | U | 4.0 | 40 |
| Dieldrin | | 8.2 | U | 8.2 | 78 |
| Endosulfan I | | 3.8 | U | 3.8 | 40 |
| Endosulfan II | | 6.4 | U | 6.4 | 78 |
| Endosulfan sulfate | | 95 | J | 8.7 | 78 |
| Endrin | | 7.5 | U | 7.5 | 78 |
| Endrin aldehyde | | 15 | U | 15 | 78 |
| Endrin ketone | | 7.5 | U | 7.5 | 78 |
| Heptachlor | | 7.5 | U | 7.5 | 40 |
| Heptachlor epoxide | | 4.9 | U | 4.9 | 40 |
| Toxaphene | | 280 | U | 280 | 4000 |
| gamma-Chlordane | | 5.2 | U | 5.2 | 40 |

| Surrogate | %Rec | Acceptance Limits |
|---|---|---|
| DCB Decachlorobiphenyl | 113 | 30 - 150 |
| Tetrachloro-m-xylene | 83 | 30 - 150 |

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

**Client Sample ID:** **041M480310**

| | | | | | |
|---|---|---|---|---|---|
| Lab Sample ID: | 680-27062-6 | | | Date Sampled: | 05/24/2007 1715 |
| Client Matrix: | Solid | % Moisture: | 83.1 | Date Received: | 05/26/2007 0945 |

**8081A_8082 Organochlorine Pesticides & Polychlorinated Biphenyls by Gas Chromatography**

| | | | | | |
|---|---|---|---|---|---|
| Method: | 8081A_8082 | Analysis Batch: 680-77454 | | Instrument ID: | GC SemiVolatiles - M |
| Preparation: | 3550B | Prep Batch: 680-77069 | | Lab File ID: | mf11014.d |
| Dilution: | 10 | | | Initial Weight/Volume: | 30.13 g |
| Date Analyzed: | 06/11/2007 1630 | | | Final Weight/Volume: | 10 mL |
| Date Prepared: | 06/07/2007 1035 | | | Injection Volume: | |
| | | | | Column ID: | PRIMARY |

| Analyte | DryWt Corrected: Y | Result (ug/Kg) | Qualifier | MDL | RL |
|---|---|---|---|---|---|
| 4,4'-DDT | | 67 | I | 16 | 190 |
| Methoxychlor | | 28 | U | 28 | 1000 |

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

**Client Sample ID:** **041M480510**

Lab Sample ID: 680-27062-7
Client Matrix: Solid
% Moisture: 43.9
Date Sampled: 05/24/2007 1730
Date Received: 05/26/2007 0945

**8081A_8082 Organochlorine Pesticides & Polychlorinated Biphenyls by Gas Chromatography**

Method: 8081A_8082
Preparation: 3550B
Dilution: 2.0
Date Analyzed: 06/08/2007 1718
Date Prepared: 06/07/2007 1035

Analysis Batch: 680-77317
Prep Batch: 680-77069

Instrument ID: GC SemiVolatiles - M
Lab File ID: mf08015.d
Initial Weight/Volume: 30.08 g
Final Weight/Volume: 10 mL
Injection Volume:
Column ID: PRIMARY

| Analyte | DryWt Corrected: Y | Result (ug/Kg) | Qualifier | MDL | RL |
|---|---|---|---|---|---|
| 4,4'-DDD | | 17 | | 1.1 | 12 |
| 4,4'-DDE | | 100 | | 1.1 | 12 |
| gamma-BHC (Lindane) | | 0.50 | U | 0.50 | 6.0 |
| Aldrin | | 0.50 | U | 0.50 | 6.0 |
| alpha-BHC | | 1.9 | U | 1.9 | 6.0 |
| beta-BHC | | 1.7 | U | 1.7 | 6.0 |
| Chlordane (technical) | | 11 | U | 11 | 60 |
| delta-BHC | | 0.82 | U | 0.82 | 6.0 |
| alpha-Chlordane | | 0.60 | U | 0.60 | 6.0 |
| Dieldrin | | 1.2 | U | 1.2 | 12 |
| Endosulfan I | | 0.57 | U | 0.57 | 6.0 |
| Endosulfan II | | 0.96 | U | 0.96 | 12 |
| Endosulfan sulfate | | 1.3 | U J | 1.3 | 12 |
| Endrin | | 1.1 | U | 1.1 | 12 |
| Endrin aldehyde | | 2.3 | U | 2.3 | 12 |
| Endrin ketone | | 1.1 | U | 1.1 | 12 |
| Heptachlor | | 1.1 | U | 1.1 | 6.0 |
| Heptachlor epoxide | | 0.75 | U | 0.75 | 6.0 |
| Toxaphene | | 43 | U | 43 | 600 |
| gamma-Chlordane | | 0.78 | U | 0.78 | 6.0 |

| Surrogate | %Rec | Acceptance Limits |
|---|---|---|
| DCB Decachlorobiphenyl | 67 | 30 - 150 |
| Tetrachloro-m-xylene | 80 | 30 - 150 |

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

**Client Sample ID:** **041M480510**

| | | | | | |
|---|---|---|---|---|---|
| Lab Sample ID: | 680-27062-7 | | | Date Sampled: | 05/24/2007 1730 |
| Client Matrix: | Solid | % Moisture: | 43.9 | Date Received: | 05/26/2007 0945 |

**8081A_8082 Organochlorine Pesticides & Polychlorinated Biphenyls by Gas Chromatography**

| | | | | | |
|---|---|---|---|---|---|
| Method: | 8081A_8082 | Analysis Batch: 680-77454 | | Instrument ID: | GC SemiVolatiles - M |
| Preparation: | 3550B | Prep Batch: 680-77069 | | Lab File ID: | mf11015.d |
| Dilution: | 10 | | | Initial Weight/Volume: | 30.08 g |
| Date Analyzed: | 06/11/2007 1649 | | | Final Weight/Volume: | 10 mL |
| Date Prepared: | 06/07/2007 1035 | | | Injection Volume: | |
| | | | | Column ID: | PRIMARY |

| Analyte | DryWt Corrected: Y | Result (ug/Kg) | Qualifier | MDL | RL |
|---|---|---|---|---|---|
| 4,4'-DDT | | 7.1 | I | 4.8 | 59 |
| Methoxychlor | | 8.4 | U | 8.4 | 300 |

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

**Client Sample ID:** **041M480410**

| | | | | | |
|---|---|---|---|---|---|
| Lab Sample ID: | 680-27062-8 | | | Date Sampled: | 05/24/2007 1750 |
| Client Matrix: | Solid | % Moisture: | 3.8 | Date Received: | 05/26/2007 0945 |

**8081A_8082 Organochlorine Pesticides & Polychlorinated Biphenyls by Gas Chromatography**

| | | | | | |
|---|---|---|---|---|---|
| Method: | 8081A_8082 | Analysis Batch: 680-77317 | | Instrument ID: | GC SemiVolatiles - M |
| Preparation: | 3550B | Prep Batch: 680-77069 | | Lab File ID: | mf08018.d |
| Dilution: | 1.0 | | | Initial Weight/Volume: | 30.09 g |
| Date Analyzed: | 06/08/2007 1817 | | | Final Weight/Volume: | 10 mL |
| Date Prepared: | 06/07/2007 1035 | | | Injection Volume: | |
| | | | | Column ID: | PRIMARY |

| Analyte | DryWt Corrected: Y | Result (ug/Kg) | Qualifier | MDL | RL |
|---|---|---|---|---|---|
| 4,4'-DDD | | 2.6 | I | 0.31 | 3.4 |
| 4,4'-DDE | | 8.7 | | 0.31 | 3.4 |
| gamma-BHC (Lindane) | | 0.15 | U | 0.15 | 1.8 |
| Aldrin | | 0.15 | U | 0.15 | 1.8 |
| alpha-BHC | | 0.54 | U | 0.54 | 1.8 |
| beta-BHC | | 0.49 | U | 0.49 | 1.8 |
| Chlordane (technical) | | 3.1 | U | 3.1 | 18 |
| delta-BHC | | 0.24 | U | 0.24 | 1.8 |
| alpha-Chlordane | | 0.18 | U | 0.18 | 1.8 |
| Dieldrin | | 0.36 | U | 0.36 | 3.4 |
| Endosulfan I | | 0.17 | U | 0.17 | 1.8 |
| Endosulfan II | | 0.28 | U | 0.28 | 3.4 |
| Endosulfan sulfate | | 0.93 | I J | 0.38 | 3.4 |
| Endrin | | 0.33 | U | 0.33 | 3.4 |
| Endrin aldehyde | | 0.67 | U | 0.67 | 3.4 |
| Endrin ketone | | 1.5 | I | 0.33 | 3.4 |
| Heptachlor | | 0.33 | U | 0.33 | 1.8 |
| Heptachlor epoxide | | 0.22 | U | 0.22 | 1.8 |
| Toxaphene | | 12 | U | 12 | 180 |
| gamma-Chlordane | | 0.23 | U | 0.23 | 1.8 |

| Surrogate | %Rec | Acceptance Limits |
|---|---|---|
| DCB Decachlorobiphenyl | 59 | 30 - 150 |
| Tetrachloro-m-xylene | 75 | 30 - 150 |

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

**Client Sample ID:** **041M480410**

| | | | | | |
|---|---|---|---|---|---|
| Lab Sample ID: | 680-27062-8 | | | Date Sampled: | 05/24/2007 1750 |
| Client Matrix: | Solid | % Moisture: | 3.8 | Date Received: | 05/26/2007 0945 |

**8081A_8082 Organochlorine Pesticides & Polychlorinated Biphenyls by Gas Chromatography**

| | | | | | |
|---|---|---|---|---|---|
| Method: | 8081A_8082 | Analysis Batch: 680-77454 | | Instrument ID: | GC SemiVolatiles - M |
| Preparation: | 3550B | Prep Batch: 680-77069 | | Lab File ID: | mf11016.d |
| Dilution: | 5.0 | | | Initial Weight/Volume: | 30.09 g |
| Date Analyzed: | 06/11/2007 1709 | | | Final Weight/Volume: | 10 mL |
| Date Prepared: | 06/07/2007 1035 | | | Injection Volume: | |
| | | | | Column ID: | PRIMARY |

| Analyte | DryWt Corrected: Y | Result (ug/Kg) | Qualifier | MDL | RL |
|---|---|---|---|---|---|
| 4,4'-DDT | | 5.6 | I | 1.4 | 17 |
| Methoxychlor | | 2.4 | U | 2.4 | 88 |

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

**Client Sample ID:** **041M480610**

| | | | | | |
|---|---|---|---|---|---|
| Lab Sample ID: | 680-27062-9 | | | Date Sampled: | 05/24/2007 1805 |
| Client Matrix: | Solid | % Moisture: | 42.3 | Date Received: | 05/26/2007 0945 |

**8081A_8082 Organochlorine Pesticides & Polychlorinated Biphenyls by Gas Chromatography**

| | | | | | |
|---|---|---|---|---|---|
| Method: | 8081A_8082 | Analysis Batch: 680-77317 | | Instrument ID: | GC SemiVolatiles - M |
| Preparation: | 3550B | Prep Batch: 680-77069 | | Lab File ID: | mf08021.d |
| Dilution: | 4.0 | | | Initial Weight/Volume: | 30.15 g |
| Date Analyzed: | 06/08/2007 1915 | | | Final Weight/Volume: | 10 mL |
| Date Prepared: | 06/07/2007 1035 | | | Injection Volume: | |
| | | | | Column ID: | PRIMARY |

| Analyte | DryWt Corrected: Y | Result (ug/Kg) | Qualifier | MDL | RL |
|---|---|---|---|---|---|
| 4,4'-DDD | | 89 | | 2.1 | 23 |
| 4,4'-DDE | | 260 | | 2.1 | 23 |
| gamma-BHC (Lindane) | | 0.97 | U | 0.97 | 12 |
| Aldrin | | 0.97 | U | 0.97 | 12 |
| alpha-BHC | | 3.6 | U | 3.6 | 12 |
| beta-BHC | | 3.2 | U | 3.2 | 12 |
| Chlordane (technical) | | 21 | U | 21 | 120 |
| delta-BHC | | 1.6 | U | 1.6 | 12 |
| alpha-Chlordane | | 1.2 | U | 1.2 | 12 |
| Dieldrin | | 2.4 | U | 2.4 | 23 |
| Endosulfan I | | 1.1 | U | 1.1 | 12 |
| Endosulfan II | | 1.9 | U | 1.9 | 23 |
| Endosulfan sulfate | | 2.6 | U J | 2.6 | 23 |
| Endrin | | 2.2 | U | 2.2 | 23 |
| Endrin aldehyde | | 4.5 | U | 4.5 | 23 |
| Endrin ketone | | 2.2 | U | 2.2 | 23 |
| Heptachlor | | 2.2 | U | 2.2 | 12 |
| Heptachlor epoxide | | 1.4 | U | 1.4 | 12 |
| Toxaphene | | 83 | U | 83 | 1200 |
| gamma-Chlordane | | 1.5 | U | 1.5 | 12 |

| Surrogate | %Rec | Acceptance Limits |
|---|---|---|
| DCB Decachlorobiphenyl | 88 | 30 - 150 |
| Tetrachloro-m-xylene | 129 | 30 - 150 |

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

**Client Sample ID:** **041M480610**

| | | | | | |
|---|---|---|---|---|---|
| Lab Sample ID: | 680-27062-9 | | | Date Sampled: | 05/24/2007 1805 |
| Client Matrix: | Solid | % Moisture: | 42.3 | Date Received: | 05/26/2007 0945 |

**8081A_8082 Organochlorine Pesticides & Polychlorinated Biphenyls by Gas Chromatography**

| | | | | | |
|---|---|---|---|---|---|
| Method: | 8081A_8082 | Analysis Batch: 680-77454 | | Instrument ID: | GC SemiVolatiles - M |
| Preparation: | 3550B | Prep Batch: 680-77069 | | Lab File ID: | mf11017.d |
| Dilution: | 20 | | | Initial Weight/Volume: | 30.15 g |
| Date Analyzed: | 06/11/2007 1729 | | | Final Weight/Volume: | 10 mL |
| Date Prepared: | 06/07/2007 1035 | | | Injection Volume: | |
| | | | | Column ID: | PRIMARY |

| Analyte | DryWt Corrected: Y | Result (ug/Kg) | Qualifier | MDL | RL |
|---|---|---|---|---|---|
| 4,4'-DDT | | 9.3 | U | 9.3 | 110 |
| Methoxychlor | | 16 | U | 16 | 590 |

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

**Client Sample ID:** **041M480710**

| | | | | | |
|---|---|---|---|---|---|
| Lab Sample ID: | 680-27062-10 | | | Date Sampled: | 05/24/2007 1815 |
| Client Matrix: | Solid | % Moisture: | 48.5 | Date Received: | 05/26/2007 0945 |

**8081A_8082 Organochlorine Pesticides & Polychlorinated Biphenyls by Gas Chromatography**

| | | | | | |
|---|---|---|---|---|---|
| Method: | 8081A_8082 | Analysis Batch: 680-77317 | | Instrument ID: | GC SemiVolatiles - M |
| Preparation: | 3550B | Prep Batch: 680-77069 | | Lab File ID: | mf08027.d |
| Dilution: | 4.0 | | | Initial Weight/Volume: | 30.04 g |
| Date Analyzed: | 06/08/2007 2112 | | | Final Weight/Volume: | 10 mL |
| Date Prepared: | 06/07/2007 1035 | | | Injection Volume: | |
| | | | | Column ID: | PRIMARY |

| Analyte | DryWt Corrected: Y | Result (ug/Kg) | Qualifier | MDL | RL |
|---|---|---|---|---|---|
| 4,4'-DDD | | 54 | | 2.3 | 26 |
| 4,4'-DDE | | 140 | | 2.3 | 26 |
| gamma-BHC (Lindane) | | 1.1 | U | 1.1 | 13 |
| Aldrin | | 1.1 | U | 1.1 | 13 |
| alpha-BHC | | 4.0 | U | 4.0 | 13 |
| beta-BHC | | 3.6 | U | 3.6 | 13 |
| Chlordane (technical) | | 23 | U | 23 | 130 |
| delta-BHC | | 1.8 | U | 1.8 | 13 |
| alpha-Chlordane | | 1.3 | U | 1.3 | 13 |
| Dieldrin | | 2.7 | U | 2.7 | 26 |
| Endosulfan I | | 1.2 | U | 1.2 | 13 |
| Endosulfan II | | 2.1 | U | 2.1 | 26 |
| Endosulfan sulfate | | 2.9 | U J | 2.9 | 26 |
| Endrin | | 2.5 | U | 2.5 | 26 |
| Endrin aldehyde | | 5.0 | U | 5.0 | 26 |
| Endrin ketone | | 2.5 | U | 2.5 | 26 |
| Heptachlor | | 2.5 | U | 2.5 | 13 |
| Heptachlor epoxide | | 1.6 | U | 1.6 | 13 |
| Toxaphene | | 93 | U | 93 | 1300 |
| gamma-Chlordane | | 1.7 | U | 1.7 | 13 |

| Surrogate | %Rec | Acceptance Limits |
|---|---|---|
| DCB Decachlorobiphenyl | 92 | 30 - 150 |
| Tetrachloro-m-xylene | 101 | 30 - 150 |

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

**Client Sample ID:** **041M480710**

| | | | | | |
|---|---|---|---|---|---|
| Lab Sample ID: | 680-27062-10 | | | Date Sampled: | 05/24/2007 1815 |
| Client Matrix: | Solid | % Moisture: | 48.5 | Date Received: | 05/26/2007 0945 |

**8081A_8082 Organochlorine Pesticides & Polychlorinated Biphenyls by Gas Chromatography**

| | | | | | |
|---|---|---|---|---|---|
| Method: | 8081A_8082 | Analysis Batch: 680-77454 | | Instrument ID: | GC SemiVolatiles - M |
| Preparation: | 3550B | Prep Batch: 680-77069 | | Lab File ID: | mf11018.d |
| Dilution: | 10 | | | Initial Weight/Volume: | 30.04 g |
| Date Analyzed: | 06/11/2007 1748 | | | Final Weight/Volume: | 10 mL |
| Date Prepared: | 06/07/2007 1035 | | | Injection Volume: | |
| | | | | Column ID: | PRIMARY |

| Analyte | DryWt Corrected: Y | Result (ug/Kg) | Qualifier | MDL | RL |
|---|---|---|---|---|---|
| 4,4'-DDT | | 5.2 | U | 5.2 | 64 |
| Methoxychlor | | 9.1 | U | 9.1 | 330 |

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

**Client Sample ID:** **041M480110**

| | | | | | |
|---|---|---|---|---|---|
| Lab Sample ID: | 680-27062-1 | | | Date Sampled: | 05/24/2007 1600 |
| Client Matrix: | Solid | % Moisture: | 30.6 | Date Received: | 05/26/2007 0945 |

**FL-PRO Florida Method for Determination of Petroleum Range Organics by GC/FID**

| | | | | | |
|---|---|---|---|---|---|
| Method: | FL-PRO | Analysis Batch: 640-33087 | | Instrument ID: | SGJ Varian 3400 |
| Preparation: | 3550B | Prep Batch: 640-32883 | | Lab File ID: | 1F06J10.d |
| Dilution: | 1.0 | | | Initial Weight/Volume: | 30.09 g |
| Date Analyzed: | 06/06/2007 1155 | | | Final Weight/Volume: | 2.0 mL |
| Date Prepared: | 05/31/2007 1300 | | | Injection Volume: | |
| | | | | Column ID: | PRIMARY |

| Analyte | DryWt Corrected: Y | Result (mg/Kg) | Qualifier | MDL | RL |
|---|---|---|---|---|---|
| Total Petroleum Hydrocarbons (C8-C40) | | 190 | V | 3.3 | 14 |

| Surrogate | %Rec | Acceptance Limits |
|---|---|---|
| o-Terphenyl | 99 | 62 - 109 |
| n-C39 | 72 | 60 - 118 |

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

**Client Sample ID:** **041N480110**

| | | | | | |
|---|---|---|---|---|---|
| Lab Sample ID: | 680-27062-2 | | | Date Sampled: | 05/24/2007 1600 |
| Client Matrix: | Solid | % Moisture: | 24.9 | Date Received: | 05/26/2007 0945 |

**FL-PRO Florida Method for Determination of Petroleum Range Organics by GC/FID**

| | | | | | |
|---|---|---|---|---|---|
| Method: | FL-PRO | Analysis Batch: 640-33087 | | Instrument ID: | SGJ Varian 3400 |
| Preparation: | 3550B | Prep Batch: 640-32883 | | Lab File ID: | 1F06J5.d |
| Dilution: | 1.0 | | | Initial Weight/Volume: | 30.05 g |
| Date Analyzed: | 06/06/2007 1046 | | | Final Weight/Volume: | 2.0 mL |
| Date Prepared: | 05/31/2007 1300 | | | Injection Volume: | |
| | | | | Column ID: | PRIMARY |

| Analyte | DryWt Corrected: Y | Result (mg/Kg) | Qualifier | MDL | RL |
|---|---|---|---|---|---|
| Total Petroleum Hydrocarbons (C8-C40) | | 140 | | 3.1 | 13 |

| Surrogate | %Rec | Acceptance Limits |
|---|---|---|
| o-Terphenyl | 83 | 62 - 109 |
| n-C39 | 66 | 60 - 118 |

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

**Client Sample ID:** **041M480910**

| | | | | | |
|---|---|---|---|---|---|
| Lab Sample ID: | 680-27062-3 | | | Date Sampled: | 05/24/2007 1630 |
| Client Matrix: | Solid | % Moisture: | 73.4 | Date Received: | 05/26/2007 0945 |

**FL-PRO Florida Method for Determination of Petroleum Range Organics by GC/FID**

| | | | | | |
|---|---|---|---|---|---|
| Method: | FL-PRO | Analysis Batch: 640-33088 | | Instrument ID: | SGH HP 5890 |
| Preparation: | 3550B | Prep Batch: 640-32883 | | Lab File ID: | 1F06H20.d |
| Dilution: | 50 | | | Initial Weight/Volume: | 30.08 g |
| Date Analyzed: | 06/06/2007 1339 | | | Final Weight/Volume: | 2.0 mL |
| Date Prepared: | 05/31/2007 1300 | | | Injection Volume: | |
| | | | | Column ID: | PRIMARY |

| Analyte | DryWt Corrected: Y | Result (mg/Kg) | Qualifier | MDL | RL |
|---|---|---|---|---|---|
| Total Petroleum Hydrocarbons (C8-C40) | | 12000 | | 430 | 1900 |

| Surrogate | %Rec | | Acceptance Limits |
|---|---|---|---|
| o-Terphenyl | 0 | J | 62 - 109 |
| n-C39 | 0 | J | 60 - 118 |

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

**Client Sample ID:** **041M480810**

| | | | | | |
|---|---|---|---|---|---|
| Lab Sample ID: | 680-27062-4 | | | Date Sampled: | 05/24/2007 1650 |
| Client Matrix: | Solid | % Moisture: | 83.4 | Date Received: | 05/26/2007 0945 |

**FL-PRO Florida Method for Determination of Petroleum Range Organics by GC/FID**

| | | | | | |
|---|---|---|---|---|---|
| Method: | FL-PRO | Analysis Batch: 640-33088 | | Instrument ID: | SGH HP 5890 |
| Preparation: | 3550B | Prep Batch: 640-32883 | | Lab File ID: | 1F06H22.d |
| Dilution: | 50 | | | Initial Weight/Volume: | 30.03 g |
| Date Analyzed: | 06/06/2007 1358 | | | Final Weight/Volume: | 2.0 mL |
| Date Prepared: | 05/31/2007 1300 | | | Injection Volume: | |
| | | | | Column ID: | PRIMARY |

| Analyte | DryWt Corrected: Y | Result (mg/Kg) | Qualifier | MDL | RL |
|---|---|---|---|---|---|
| Total Petroleum Hydrocarbons (C8-C40) | | 26000 | | 690 | 3000 |

| Surrogate | %Rec | | Acceptance Limits |
|---|---|---|---|
| o-Terphenyl | 0 | J | 62 - 109 |
| n-C39 | 0 | J | 60 - 118 |

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

**Client Sample ID:** **041M480210**

| | | | | | |
|---|---|---|---|---|---|
| Lab Sample ID: | 680-27062-5 | | | Date Sampled: | 05/24/2007 1700 |
| Client Matrix: | Solid | % Moisture: | 28.8 | Date Received: | 05/26/2007 0945 |

**FL-PRO Florida Method for Determination of Petroleum Range Organics by GC/FID**

| | | | | | |
|---|---|---|---|---|---|
| Method: | FL-PRO | Analysis Batch: 640-33087 | | Instrument ID: | SGJ Varian 3400 |
| Preparation: | 3550B | Prep Batch: 640-32883 | | Lab File ID: | 1F06J8.d |
| Dilution: | 100 | | | Initial Weight/Volume: | 30.0 g |
| Date Analyzed: | 06/06/2007 1139 | | | Final Weight/Volume: | 2.0 mL |
| Date Prepared: | 05/31/2007 1300 | | | Injection Volume: | |
| | | | | Column ID: | PRIMARY |

| Analyte | DryWt Corrected: Y | Result (mg/Kg) | Qualifier | MDL | RL |
|---|---|---|---|---|---|
| Total Petroleum Hydrocarbons (C8-C40) | | 6800 | | 320 | 1400 |

| Surrogate | %Rec | Acceptance Limits |
|---|---|---|
| o-Terphenyl | 0 | 62 - 109 |
| n-C39 | 0 | 60 - 118 |

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

**Client Sample ID:** **041M480310**

| | | | | | |
|---|---|---|---|---|---|
| Lab Sample ID: | 680-27062-6 | | | Date Sampled: | 05/24/2007 1715 |
| Client Matrix: | Solid | % Moisture: | 83.1 | Date Received: | 05/26/2007 0945 |

**FL-PRO Florida Method for Determination of Petroleum Range Organics by GC/FID**

| | | | | | |
|---|---|---|---|---|---|
| Method: | FL-PRO | Analysis Batch: 640-33088 | | Instrument ID: | SGH HP 5890 |
| Preparation: | 3550B | Prep Batch: 640-32883 | | Lab File ID: | 1F06H10.d |
| Dilution: | 100 | | | Initial Weight/Volume: | 30.09 g |
| Date Analyzed: | 06/06/2007 1203 | | | Final Weight/Volume: | 2.0 mL |
| Date Prepared: | 05/31/2007 1300 | | | Injection Volume: | |
| | | | | Column ID: | PRIMARY |

| Analyte | DryWt Corrected: Y | Result (mg/Kg) | Qualifier | MDL | RL |
|---|---|---|---|---|---|
| Total Petroleum Hydrocarbons (C8-C40) | | 31000 | | 1400 | 5900 |

| Surrogate | %Rec | | Acceptance Limits |
|---|---|---|---|
| o-Terphenyl | 0 | J | 62 - 109 |
| n-C39 | 0 | J | 60 - 118 |

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

**Client Sample ID:** **041M480510**

| | | | | | |
|---|---|---|---|---|---|
| Lab Sample ID: | 680-27062-7 | | | Date Sampled: | 05/24/2007 1730 |
| Client Matrix: | Solid | % Moisture: | 43.9 | Date Received: | 05/26/2007 0945 |

**FL-PRO Florida Method for Determination of Petroleum Range Organics by GC/FID**

| | | | | | |
|---|---|---|---|---|---|
| Method: | FL-PRO | Analysis Batch: 640-33088 | | Instrument ID: | SGH HP 5890 |
| Preparation: | 3550B | Prep Batch: 640-32883 | | Lab File ID: | 1F06H17.d |
| Dilution: | 1.0 | | | Initial Weight/Volume: | 30.02 g |
| Date Analyzed: | 06/06/2007 1310 | | | Final Weight/Volume: | 2.0 mL |
| Date Prepared: | 05/31/2007 1300 | | | Injection Volume: | |
| | | | | Column ID: | PRIMARY |

| Analyte | DryWt Corrected: Y | Result (mg/Kg) | Qualifier | MDL | RL |
|---|---|---|---|---|---|
| Total Petroleum Hydrocarbons (C8-C40) | | 98 | | 4.1 | 18 |

| Surrogate | %Rec | Acceptance Limits |
|---|---|---|
| o-Terphenyl | 72 | 62 - 109 |
| n-C39 | 78 | 60 - 118 |

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

**Client Sample ID:** **041M480410**

| | | | | | |
|---|---|---|---|---|---|
| Lab Sample ID: | 680-27062-8 | | | Date Sampled: | 05/24/2007 1750 |
| Client Matrix: | Solid | % Moisture: | 3.8 | Date Received: | 05/26/2007 0945 |

**FL-PRO Florida Method for Determination of Petroleum Range Organics by GC/FID**

| | | | | | |
|---|---|---|---|---|---|
| Method: | FL-PRO | Analysis Batch: 640-33088 | | Instrument ID: | SGH HP 5890 |
| Preparation: | 3550B | Prep Batch: 640-32883 | | Lab File ID: | 1F06H4.d |
| Dilution: | 1.0 | | | Initial Weight/Volume: | 30.02 g |
| Date Analyzed: | 06/06/2007 1049 | | | Final Weight/Volume: | 2.0 mL |
| Date Prepared: | 05/31/2007 1300 | | | Injection Volume: | |
| | | | | Column ID: | PRIMARY |

| Analyte | DryWt Corrected: Y | Result (mg/Kg) | Qualifier | MDL | RL |
|---|---|---|---|---|---|
| Total Petroleum Hydrocarbons (C8-C40) | | 40 | V | 2.4 | 10 |

| Surrogate | %Rec | Acceptance Limits |
|---|---|---|
| o-Terphenyl | 80 | 62 - 109 |
| n-C39 | 80 | 60 - 118 |

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

**Client Sample ID:** **041M480610**

| | | | | | |
|---|---|---|---|---|---|
| Lab Sample ID: | 680-27062-9 | | | Date Sampled: | 05/24/2007 1805 |
| Client Matrix: | Solid | % Moisture: | 42.3 | Date Received: | 05/26/2007 0945 |

**FL-PRO Florida Method for Determination of Petroleum Range Organics by GC/FID**

| | | | | | |
|---|---|---|---|---|---|
| Method: | FL-PRO | Analysis Batch: 640-33087 | | Instrument ID: | SGJ Varian 3400 |
| Preparation: | 3550B | Prep Batch: 640-32883 | | Lab File ID: | 1F06J11.d |
| Dilution: | 1.0 | | | Initial Weight/Volume: | 30.03 g |
| Date Analyzed: | 06/06/2007 1202 | | | Final Weight/Volume: | 2.0 mL |
| Date Prepared: | 05/31/2007 1300 | | | Injection Volume: | |
| | | | | Column ID: | PRIMARY |

| Analyte | DryWt Corrected: Y | Result (mg/Kg) | Qualifier | MDL | RL |
|---|---|---|---|---|---|
| Total Petroleum Hydrocarbons (C8-C40) | | 320 | | 4.0 | 17 |

| Surrogate | %Rec | Acceptance Limits |
|---|---|---|
| o-Terphenyl | 86 | 62 - 109 |
| n-C39 | 60 | 60 - 118 |

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

**Client Sample ID:** **041M480710**

| | | | | | |
|---|---|---|---|---|---|
| Lab Sample ID: | 680-27062-10 | | | Date Sampled: | 05/24/2007 1815 |
| Client Matrix: | Solid | % Moisture: | 48.5 | Date Received: | 05/26/2007 0945 |

**FL-PRO Florida Method for Determination of Petroleum Range Organics by GC/FID**

| | | | | | |
|---|---|---|---|---|---|
| Method: | FL-PRO | Analysis Batch: 640-33088 | | Instrument ID: | SGH HP 5890 |
| Preparation: | 3550B | Prep Batch: 640-32883 | | Lab File ID: | 1F06H5.d |
| Dilution: | 1.0 | | | Initial Weight/Volume: | 30.07 g |
| Date Analyzed: | 06/06/2007 1059 | | | Final Weight/Volume: | 2.0 mL |
| Date Prepared: | 05/31/2007 1300 | | | Injection Volume: | |
| | | | | Column ID: | PRIMARY |

| Analyte | DryWt Corrected: Y | Result (mg/Kg) | Qualifier | MDL | RL |
|---|---|---|---|---|---|
| Total Petroleum Hydrocarbons (C8-C40) | | 240 | | 4.5 | 19 |

| Surrogate | %Rec | Acceptance Limits |
|---|---|---|
| o-Terphenyl | 79 | 62 - 109 |
| n-C39 | 81 | 60 - 118 |

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

**Client Sample ID:** **041M100710**

Lab Sample ID: 680-27062-11
Client Matrix: Solid
% Moisture: 62.5
Date Sampled: 05/24/2007 1042
Date Received: 05/26/2007 0945

**6010B Inductively Coupled Plasma - Atomic Emission Spectrometry**

Method: 6010B
Preparation: 3050B
Dilution: 1.0
Date Analyzed: 05/31/2007 1010
Date Prepared: 05/30/2007 1018
Analysis Batch: 680-76466
Prep Batch: 680-76337
Instrument ID: ICP/AES
Lab File ID: N/A
Initial Weight/Volume: 1.13 g
Final Weight/Volume: 100 mL

| Analyte | DryWt Corrected: Y | Result (mg/Kg) | Qualifier | MDL | RL |
|---|---|---|---|---|---|
| Silver | | 3.8 | | 0.23 | 2.4 |
| Aluminum | | 8300 | | 11 | 47 |
| Manganese | | 49 | | 0.50 | 2.4 |
| Arsenic | | 1.8 | I | 1.6 | 2.4 |
| Barium | | 17 | | 0.71 | 2.4 |
| Beryllium | | 0.11 | I | 0.040 | 0.94 |
| Calcium | | 1900 | | 5.7 | 120 |
| Cadmium | | 5.2 | | 0.52 | 1.2 |
| Cobalt | | 0.86 | I | 0.40 | 2.4 |
| Chromium | | 120 | | 0.31 | 2.4 |
| Copper | | 23 | | 0.40 | 4.7 |
| Iron | | 6300 | | 9.9 | 12 |
| Potassium | | 190 | I | 3.1 | 240 |
| Magnesium | | 560 | | 2.8 | 120 |
| Sodium | | 480 | | 120 | 240 |
| Nickel | | 3.9 | I | 0.61 | 9.4 |
| Lead | | 26 | | 0.50 | 1.2 |
| Antimony | | 1.1 | U | 1.1 | 4.7 |
| Selenium | | 2.1 | U | 2.1 | 5.9 |
| Thallium | | 3.1 | U | 3.1 | 5.9 |
| Vanadium | | 14 | | 0.33 | 2.4 |
| Zinc | | 83 | | 1.8 | 4.7 |

**7471A Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)**

Method: 7471A
Preparation: 7471A
Dilution: 1.0
Date Analyzed: 06/04/2007 1831
Date Prepared: 06/04/2007 1130
Analysis Batch: 680-77033
Prep Batch: 680-76739
Instrument ID: LEEMAN1
Lab File ID: N/A
Initial Weight/Volume: 1.03 g
Final Weight/Volume: 50 mL

| Analyte | DryWt Corrected: Y | Result (mg/Kg) | Qualifier | MDL | RL |
|---|---|---|---|---|---|
| Mercury | | 0.14 | | 0.010 | 0.052 |

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

**Client Sample ID:** **041M100810**

| | | | | | |
|---|---|---|---|---|---|
| Lab Sample ID: | 680-27062-12 | | | Date Sampled: | 05/24/2007 0935 |
| Client Matrix: | Solid | % Moisture: | 27.5 | Date Received: | 05/26/2007 0945 |

**6010B Inductively Coupled Plasma - Atomic Emission Spectrometry**

| | | | | | |
|---|---|---|---|---|---|
| Method: | 6010B | Analysis Batch: 680-76466 | | Instrument ID: | ICP/AES |
| Preparation: | 3050B | Prep Batch: 680-76337 | | Lab File ID: | N/A |
| Dilution: | 1.0 | | | Initial Weight/Volume: | 1.12 g |
| Date Analyzed: | 05/30/2007 2221 | | | Final Weight/Volume: | 100 mL |
| Date Prepared: | 05/30/2007 1018 | | | | |

| Analyte | DryWt Corrected: Y | Result (mg/Kg) | Qualifier | MDL | RL |
|---|---|---|---|---|---|
| Silver | | 0.12 | U | 0.12 | 1.2 |
| Aluminum | | 1200 | | 5.5 | 25 |
| Manganese | | 7.7 | | 0.26 | 1.2 |
| Arsenic | | 0.83 | U | 0.83 | 1.2 |
| Barium | | 6.6 | | 0.37 | 1.2 |
| Beryllium | | 0.021 | U | 0.021 | 0.49 |
| Calcium | | 1600 | | 3.0 | 62 |
| Cadmium | | 0.27 | U | 0.27 | 0.62 |
| Cobalt | | 0.21 | U | 0.21 | 1.2 |
| Chromium | | 3.1 | | 0.16 | 1.2 |
| Copper | | 1.6 | I | 0.21 | 2.5 |
| Iron | | 940 | | 5.2 | 6.2 |
| Potassium | | 32 | I | 1.6 | 120 |
| Magnesium | | 94 | | 1.5 | 62 |
| Sodium | | 120 | | 62 | 120 |
| Nickel | | 0.46 | I | 0.32 | 4.9 |
| Lead | | 2.8 | | 0.26 | 0.62 |
| Antimony | | 0.55 | U | 0.55 | 2.5 |
| Selenium | | 1.1 | U | 1.1 | 3.1 |
| Thallium | | 1.6 | U | 1.6 | 3.1 |
| Vanadium | | 2.2 | | 0.17 | 1.2 |
| Zinc | | 6.8 | | 0.92 | 2.5 |

**7471A Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)**

| | | | | | |
|---|---|---|---|---|---|
| Method: | 7471A | Analysis Batch: 680-77033 | | Instrument ID: | LEEMAN1 |
| Preparation: | 7471A | Prep Batch: 680-76739 | | Lab File ID: | N/A |
| Dilution: | 1.0 | | | Initial Weight/Volume: | 1.08 g |
| Date Analyzed: | 06/04/2007 1834 | | | Final Weight/Volume: | 50 mL |
| Date Prepared: | 06/04/2007 1130 | | | | |

| Analyte | DryWt Corrected: Y | Result (mg/Kg) | Qualifier | MDL | RL |
|---|---|---|---|---|---|
| Mercury | | 0.0051 | U | 0.0051 | 0.026 |

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

**Client Sample ID:** **041M100910**

Lab Sample ID: 680-27062-13
Client Matrix: Solid
% Moisture: 10.8
Date Sampled: 05/24/2007 1212
Date Received: 05/26/2007 0945

**6010B Inductively Coupled Plasma - Atomic Emission Spectrometry**

Method: 6010B
Preparation: 3050B
Dilution: 1.0
Date Analyzed: 05/30/2007 2226
Date Prepared: 05/30/2007 1018
Analysis Batch: 680-76466
Prep Batch: 680-76337
Instrument ID: ICP/AES
Lab File ID: N/A
Initial Weight/Volume: 1.09 g
Final Weight/Volume: 100 mL

| Analyte | DryWt Corrected: Y | Result (mg/Kg) | Qualifier | MDL | RL |
|---|---|---|---|---|---|
| Silver | | 0.10 | U | 0.10 | 1.0 |
| Aluminum | | 210 | | 4.6 | 21 |
| Manganese | | 12 | | 0.22 | 1.0 |
| Arsenic | | 0.69 | U | 0.69 | 1.0 |
| Barium | | 0.96 | I | 0.31 | 1.0 |
| Beryllium | | 0.017 | U | 0.017 | 0.41 |
| Calcium | | 700 | | 2.5 | 51 |
| Cadmium | | 0.23 | U | 0.23 | 0.51 |
| Cobalt | | 0.17 | U | 0.17 | 1.0 |
| Chromium | | 0.65 | I | 0.13 | 1.0 |
| Copper | | 0.33 | I | 0.17 | 2.1 |
| Iron | | 280 | | 4.3 | 5.1 |
| Potassium | | 12 | I | 1.3 | 100 |
| Magnesium | | 40 | I | 1.2 | 51 |
| Sodium | | 73 | I | 51 | 100 |
| Nickel | | 0.27 | U | 0.27 | 4.1 |
| Lead | | 1.1 | | 0.22 | 0.51 |
| Antimony | | 0.46 | U | 0.46 | 2.1 |
| Selenium | | 0.93 | U | 0.93 | 2.6 |
| Thallium | | 1.3 | U | 1.3 | 2.6 |
| Vanadium | | 0.60 | I | 0.14 | 1.0 |
| Zinc | | 2.0 | I | 0.77 | 2.1 |

**7471A Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)**

Method: 7471A
Preparation: 7471A
Dilution: 1.0
Date Analyzed: 06/04/2007 1836
Date Prepared: 06/04/2007 1130
Analysis Batch: 680-77033
Prep Batch: 680-76739
Instrument ID: LEEMAN1
Lab File ID: N/A
Initial Weight/Volume: 1.06 g
Final Weight/Volume: 50 mL

| Analyte | DryWt Corrected: Y | Result (mg/Kg) | Qualifier | MDL | RL |
|---|---|---|---|---|---|
| Mercury | | 0.0042 | U | 0.0042 | 0.021 |

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

**Client Sample ID:** **041M101010**

Lab Sample ID: 680-27062-14
Client Matrix: Solid
% Moisture: 22.6
Date Sampled: 05/24/2007 1137
Date Received: 05/26/2007 0945

**6010B Inductively Coupled Plasma - Atomic Emission Spectrometry**

Method: 6010B
Preparation: 3050B
Dilution: 1.0
Date Analyzed: 05/30/2007 2250
Date Prepared: 05/30/2007 1018
Analysis Batch: 680-76466
Prep Batch: 680-76337
Instrument ID: ICP/AES
Lab File ID: N/A
Initial Weight/Volume: 1.04 g
Final Weight/Volume: 100 mL

| Analyte | DryWt Corrected: Y | Result (mg/Kg) | Qualifier | MDL | RL |
|---|---|---|---|---|---|
| Silver | | 0.12 | U | 0.12 | 1.2 |
| Aluminum | | 560 | | 5.6 | 25 |
| Manganese | | 4.1 | | 0.26 | 1.2 |
| Arsenic | | 0.83 | U | 0.83 | 1.2 |
| Barium | | 1.1 | I | 0.37 | 1.2 |
| Beryllium | | 0.021 | U | 0.021 | 0.50 |
| Calcium | | 880 | | 3.0 | 62 |
| Cadmium | | 0.27 | U | 0.27 | 0.62 |
| Cobalt | | 0.21 | U | 0.21 | 1.2 |
| Chromium | | 1.4 | | 0.16 | 1.2 |
| Copper | | 0.59 | I | 0.21 | 2.5 |
| Iron | | 420 | | 5.2 | 6.2 |
| Potassium | | 21 | I | 1.6 | 120 |
| Magnesium | | 69 | | 1.5 | 62 |
| Sodium | | 110 | I | 62 | 120 |
| Nickel | | 0.32 | U | 0.32 | 5.0 |
| Lead | | 1.7 | | 0.26 | 0.62 |
| Antimony | | 0.56 | U | 0.56 | 2.5 |
| Selenium | | 1.1 | U | 1.1 | 3.1 |
| Thallium | | 1.6 | U | 1.6 | 3.1 |
| Vanadium | | 1.3 | | 0.17 | 1.2 |
| Zinc | | 3.9 | | 0.93 | 2.5 |

**7471A Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)**

Method: 7471A
Preparation: 7471A
Dilution: 1.0
Date Analyzed: 06/04/2007 1839
Date Prepared: 06/04/2007 1130
Analysis Batch: 680-77033
Prep Batch: 680-76739
Instrument ID: LEEMAN1
Lab File ID: N/A
Initial Weight/Volume: 1.10 g
Final Weight/Volume: 50 mL

| Analyte | DryWt Corrected: Y | Result (mg/Kg) | Qualifier | MDL | RL |
|---|---|---|---|---|---|
| Mercury | | 0.0047 | U | 0.0047 | 0.023 |

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

**Client Sample ID:** **041N101010**

| | | | | | |
|---|---|---|---|---|---|
| Lab Sample ID: | 680-27062-15 | | | Date Sampled: | 05/24/2007 1137 |
| Client Matrix: | Solid | % Moisture: | 20.2 | Date Received: | 05/26/2007 0945 |

**6010B Inductively Coupled Plasma - Atomic Emission Spectrometry**

| | | | | | |
|---|---|---|---|---|---|
| Method: | 6010B | Analysis Batch: 680-76466 | | Instrument ID: | ICP/AES |
| Preparation: | 3050B | Prep Batch: 680-76337 | | Lab File ID: | N/A |
| Dilution: | 1.0 | | | Initial Weight/Volume: | 1.16 g |
| Date Analyzed: | 05/30/2007 2304 | | | Final Weight/Volume: | 100 mL |
| Date Prepared: | 05/30/2007 1018 | | | | |

| Analyte | DryWt Corrected: Y | Result (mg/Kg) | Qualifier | MDL | RL |
|---|---|---|---|---|---|
| Silver | | 0.11 | U | 0.11 | 1.1 |
| Aluminum | | 760 | | 4.9 | 22 |
| Manganese | | 5.3 | | 0.23 | 1.1 |
| Arsenic | | 0.72 | U | 0.72 | 1.1 |
| Barium | | 2.4 | | 0.32 | 1.1 |
| Beryllium | | 0.018 | U | 0.018 | 0.43 |
| Calcium | | 4100 | | 2.6 | 54 |
| Cadmium | | 0.24 | U | 0.24 | 0.54 |
| Cobalt | | 0.18 | U | 0.18 | 1.1 |
| Chromium | | 1.8 | | 0.14 | 1.1 |
| Copper | | 0.72 | I | 0.18 | 2.2 |
| Iron | | 510 | | 4.5 | 5.4 |
| Potassium | | 25 | I | 1.4 | 110 |
| Magnesium | | 85 | | 1.3 | 54 |
| Sodium | | 130 | | 54 | 110 |
| Nickel | | 0.35 | I | 0.28 | 4.3 |
| Lead | | 2.2 | | 0.23 | 0.54 |
| Antimony | | 0.49 | U | 0.49 | 2.2 |
| Selenium | | 0.97 | U | 0.97 | 2.7 |
| Thallium | | 1.4 | U | 1.4 | 2.7 |
| Vanadium | | 1.7 | | 0.15 | 1.1 |
| Zinc | | 4.8 | | 0.81 | 2.2 |

**7471A Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)**

| | | | | | |
|---|---|---|---|---|---|
| Method: | 7471A | Analysis Batch: 680-77033 | | Instrument ID: | LEEMAN1 |
| Preparation: | 7471A | Prep Batch: 680-76739 | | Lab File ID: | N/A |
| Dilution: | 1.0 | | | Initial Weight/Volume: | 1.19 g |
| Date Analyzed: | 06/04/2007 1847 | | | Final Weight/Volume: | 50 mL |
| Date Prepared: | 06/04/2007 1130 | | | | |

| Analyte | DryWt Corrected: Y | Result (mg/Kg) | Qualifier | MDL | RL |
|---|---|---|---|---|---|
| Mercury | | 0.0042 | U | 0.0042 | 0.021 |

**General Chemistry**

**Client Sample ID:** **041M480110**

Lab Sample ID: 680-27062-1
Client Matrix: Solid

Date Sampled: 05/24/2007 1600
Date Received: 05/26/2007 0945

| Analyte | Result | Qual | Units | MDL | RL | Dil | Method |
|---|---|---|---|---|---|---|---|
| Total Organic Carbon | 4400 | | mg/Kg | 390 | 1000 | 1.0 | 9060 |

Anly Batch: 680-77026 Date Analyzed 06/05/2007 1300 DryWt Corrected: N

| Analyte | Result | Qual | Units | RL | RL | Dil | Method |
|---|---|---|---|---|---|---|---|
| Percent Moisture | 31 | | % | 0.010 | 0.010 | 1.0 | PercentMoisture |

Anly Batch: 680-76258 Date Analyzed 05/29/2007 1503

**Client Sample ID:** **041N480110**

Lab Sample ID: 680-27062-2
Client Matrix: Solid

Date Sampled: 05/24/2007 1600
Date Received: 05/26/2007 0945

| Analyte | Result | Qual | Units | MDL | RL | Dil | Method |
|---|---|---|---|---|---|---|---|
| Total Organic Carbon | 3300 | | mg/Kg | 390 | 1000 | 1.0 | 9060 |

Anly Batch: 680-77026 Date Analyzed 06/05/2007 1300 DryWt Corrected: N

| Analyte | Result | Qual | Units | RL | RL | Dil | Method |
|---|---|---|---|---|---|---|---|
| Percent Moisture | 25 | | % | 0.010 | 0.010 | 1.0 | PercentMoisture |

Anly Batch: 680-76258 Date Analyzed 05/29/2007 1503

**General Chemistry**

**Client Sample ID:** **041M480910**

Lab Sample ID: 680-27062-3
Client Matrix: Solid

Date Sampled: 05/24/2007 1630
Date Received: 05/26/2007 0945

| Analyte | Result | Qual | Units | MDL | RL | Dil | Method |
|---|---|---|---|---|---|---|---|
| Total Organic Carbon | 360000 | | mg/Kg | 390 | 1000 | 1.0 | 9060 |

Anly Batch: 680-77026 Date Analyzed 06/05/2007 1300 DryWt Corrected: N

| Analyte | Result | Qual | Units | RL | RL | Dil | Method |
|---|---|---|---|---|---|---|---|
| Percent Moisture | 73 | | % | 0.010 | 0.010 | 1.0 | PercentMoisture |

Anly Batch: 680-76258 Date Analyzed 05/29/2007 1503

**Client Sample ID:** **041M480810**

Lab Sample ID: 680-27062-4
Client Matrix: Solid

Date Sampled: 05/24/2007 1650
Date Received: 05/26/2007 0945

| Analyte | Result | Qual | Units | MDL | RL | Dil | Method |
|---|---|---|---|---|---|---|---|
| Total Organic Carbon | 420000 | | mg/Kg | 390 | 1000 | 1.0 | 9060 |

Anly Batch: 680-77026 Date Analyzed 06/05/2007 1300 DryWt Corrected: N

| Analyte | Result | Qual | Units | RL | RL | Dil | Method |
|---|---|---|---|---|---|---|---|
| Percent Moisture | 83 | | % | 0.010 | 0.010 | 1.0 | PercentMoisture |

Anly Batch: 680-76258 Date Analyzed 05/29/2007 1503

**General Chemistry**

**Client Sample ID:** **041M480210**

Lab Sample ID: 680-27062-5
Client Matrix: Solid

Date Sampled: 05/24/2007 1700
Date Received: 05/26/2007 0945

| Analyte | Result | Qual | Units | MDL | RL | Dil | Method |
|---|---|---|---|---|---|---|---|
| Total Organic Carbon | 20000 | | mg/Kg | 390 | 1000 | 1.0 | 9060 |

Anly Batch: 680-77026 Date Analyzed 06/05/2007 1300 DryWt Corrected: N

| Analyte | Result | Qual | Units | RL | RL | Dil | Method |
|---|---|---|---|---|---|---|---|
| Percent Moisture | 29 | | % | 0.010 | 0.010 | 1.0 | PercentMoisture |

Anly Batch: 680-76258 Date Analyzed 05/29/2007 1503

**Client Sample ID:** **041M480310**

Lab Sample ID: 680-27062-6
Client Matrix: Solid

Date Sampled: 05/24/2007 1715
Date Received: 05/26/2007 0945

| Analyte | Result | Qual | Units | MDL | RL | Dil | Method |
|---|---|---|---|---|---|---|---|
| Total Organic Carbon | 360000 | | mg/Kg | 390 | 1000 | 1.0 | 9060 |

Anly Batch: 680-77026 Date Analyzed 06/05/2007 1300 DryWt Corrected: N

| Analyte | Result | Qual | Units | RL | RL | Dil | Method |
|---|---|---|---|---|---|---|---|
| Percent Moisture | 83 | | % | 0.010 | 0.010 | 1.0 | PercentMoisture |

Anly Batch: 680-76258 Date Analyzed 05/29/2007 1503

**General Chemistry**

**Client Sample ID:** **041M480510**

Lab Sample ID: 680-27062-7
Client Matrix: Solid

Date Sampled: 05/24/2007 1730
Date Received: 05/26/2007 0945

| Analyte | Result | Qual | Units | MDL | RL | Dil | Method |
|---|---|---|---|---|---|---|---|
| Total Organic Carbon | 30000 | | mg/Kg | 390 | 1000 | 1.0 | 9060 |

Anly Batch: 680-77026 Date Analyzed 06/05/2007 1300 DryWt Corrected: N

| Analyte | Result | Qual | Units | RL | RL | Dil | Method |
|---|---|---|---|---|---|---|---|
| Percent Moisture | 44 | | % | 0.010 | 0.010 | 1.0 | PercentMoisture |

Anly Batch: 680-76258 Date Analyzed 05/29/2007 1503

**Client Sample ID:** **041M480410**

Lab Sample ID: 680-27062-8
Client Matrix: Solid

Date Sampled: 05/24/2007 1750
Date Received: 05/26/2007 0945

| Analyte | Result | Qual | Units | MDL | RL | Dil | Method |
|---|---|---|---|---|---|---|---|
| Total Organic Carbon | 6100 | | mg/Kg | 390 | 1000 | 1.0 | 9060 |

Anly Batch: 680-77026 Date Analyzed 06/05/2007 1300 DryWt Corrected: N

| Analyte | Result | Qual | Units | RL | RL | Dil | Method |
|---|---|---|---|---|---|---|---|
| Percent Moisture | 3.8 | | % | 0.010 | 0.010 | 1.0 | PercentMoisture |

Anly Batch: 680-76258 Date Analyzed 05/29/2007 1503

**General Chemistry**

**Client Sample ID:** **041M480610**

Lab Sample ID: 680-27062-9
Client Matrix: Solid

Date Sampled: 05/24/2007 1805
Date Received: 05/26/2007 0945

| Analyte | Result | Qual | Units | MDL | RL | Dil | Method |
|---|---|---|---|---|---|---|---|
| Total Organic Carbon | 29000 | | mg/Kg | 390 | 1000 | 1.0 | 9060 |

Anly Batch: 680-77026 Date Analyzed 06/05/2007 1300 DryWt Corrected: N

| Analyte | Result | Qual | Units | RL | RL | Dil | Method |
|---|---|---|---|---|---|---|---|
| Percent Moisture | 42 | | % | 0.010 | 0.010 | 1.0 | PercentMoisture |

Anly Batch: 680-76258 Date Analyzed 05/29/2007 1503

**Client Sample ID:** **041M480710**

Lab Sample ID: 680-27062-10
Client Matrix: Solid

Date Sampled: 05/24/2007 1815
Date Received: 05/26/2007 0945

| Analyte | Result | Qual | Units | MDL | RL | Dil | Method |
|---|---|---|---|---|---|---|---|
| Total Organic Carbon | 35000 | | mg/Kg | 390 | 1000 | 1.0 | 9060 |

Anly Batch: 680-77026 Date Analyzed 06/05/2007 1300 DryWt Corrected: N

| Analyte | Result | Qual | Units | RL | RL | Dil | Method |
|---|---|---|---|---|---|---|---|
| Percent Moisture | 48 | | % | 0.010 | 0.010 | 1.0 | PercentMoisture |

Anly Batch: 680-76258 Date Analyzed 05/29/2007 1503

**General Chemistry**

**Client Sample ID:** **041M100710**

Lab Sample ID: 680-27062-11
Client Matrix: Solid

Date Sampled: 05/24/2007 1042
Date Received: 05/26/2007 0945

| Analyte | Result | Qual | Units | MDL | RL | Dil | Method |
|---|---|---|---|---|---|---|---|
| Total Organic Carbon | 28000 | | mg/Kg | 390 | 1000 | 1.0 | 9060 |

Anly Batch: 680-77026 Date Analyzed 06/05/2007 1300 DryWt Corrected: N

| Analyte | Result | Qual | Units | RL | RL | Dil | Method |
|---|---|---|---|---|---|---|---|
| Percent Moisture | 62 | | % | 0.010 | 0.010 | 1.0 | PercentMoisture |

Anly Batch: 680-76258 Date Analyzed 05/29/2007 1503

**Client Sample ID:** **041M100810**

Lab Sample ID: 680-27062-12
Client Matrix: Solid

Date Sampled: 05/24/2007 0935
Date Received: 05/26/2007 0945

| Analyte | Result | Qual | Units | MDL | RL | Dil | Method |
|---|---|---|---|---|---|---|---|
| Total Organic Carbon | 4100 | | mg/Kg | 390 | 1000 | 1.0 | 9060 |

Anly Batch: 680-77026 Date Analyzed 06/05/2007 1300 DryWt Corrected: N

| Analyte | Result | Qual | Units | RL | RL | Dil | Method |
|---|---|---|---|---|---|---|---|
| Percent Moisture | 28 | | % | 0.010 | 0.010 | 1.0 | PercentMoisture |

Anly Batch: 680-76258 Date Analyzed 05/29/2007 1503

**General Chemistry**

**Client Sample ID:** **041M100910**

Lab Sample ID: 680-27062-13
Client Matrix: Solid

Date Sampled: 05/24/2007 1212
Date Received: 05/26/2007 0945

| Analyte | Result | Qual | Units | MDL | RL | Dil | Method |
|---|---|---|---|---|---|---|---|
| Total Organic Carbon | 1100 | | mg/Kg | 390 | 1000 | 1.0 | 9060 |

Anly Batch: 680-77026 Date Analyzed 06/05/2007 1300 DryWt Corrected: N

| Analyte | Result | Qual | Units | RL | RL | Dil | Method |
|---|---|---|---|---|---|---|---|
| Percent Moisture | 11 | | % | 0.010 | 0.010 | 1.0 | PercentMoisture |

Anly Batch: 680-76258 Date Analyzed 05/29/2007 1503

**Client Sample ID:** **041M101010**

Lab Sample ID: 680-27062-14
Client Matrix: Solid

Date Sampled: 05/24/2007 1137
Date Received: 05/26/2007 0945

| Analyte | Result | Qual | Units | MDL | RL | Dil | Method |
|---|---|---|---|---|---|---|---|
| Total Organic Carbon | 2000 | | mg/Kg | 390 | 1000 | 1.0 | 9060 |

Anly Batch: 680-77026 Date Analyzed 06/05/2007 1300 DryWt Corrected: N

| Analyte | Result | Qual | Units | RL | RL | Dil | Method |
|---|---|---|---|---|---|---|---|
| Percent Moisture | 23 | | % | 0.010 | 0.010 | 1.0 | PercentMoisture |

Anly Batch: 680-76258 Date Analyzed 05/29/2007 1503

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

**General Chemistry**

**Client Sample ID:** **041N101010**

Lab Sample ID: 680-27062-15
Client Matrix: Solid

Date Sampled: 05/24/2007 1137
Date Received: 05/26/2007 0945

| Analyte | Result | Qual | Units | MDL | RL | Dil | Method |
|---|---|---|---|---|---|---|---|
| Total Organic Carbon | 2600 | | mg/Kg | 390 | 1000 | 1.0 | 9060 |

Anly Batch: 680-77026 Date Analyzed 06/05/2007 1300 DryWt Corrected: N

| Analyte | Result | Qual | Units | RL | RL | Dil | Method |
|---|---|---|---|---|---|---|---|
| Percent Moisture | 20 | | % | 0.010 | 0.010 | 1.0 | PercentMoisture |

Anly Batch: 680-76258 Date Analyzed 05/29/2007 1503

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

## QC Association Summary

| Lab Sample ID | Client Sample ID | Report Basis | Client Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| **GC/MS Semi VOA** | | | | | |
| **Prep Batch: 680-77068** | | | | | |
| MB 680-77068/12-AA | Method Blank | T | Solid | 3550B | |
| 680-27062-1 | 041M480110 | T | Solid | 3550B | |
| 680-27062-2 | 041N480110 | T | Solid | 3550B | |
| 680-27062-3 | 041M480910 | T | Solid | 3550B | |
| 680-27062-4 | 041M480810 | T | Solid | 3550B | |
| 680-27062-5 | 041M480210 | T | Solid | 3550B | |
| 680-27062-6 | 041M480310 | T | Solid | 3550B | |
| 680-27062-7 | 041M480510 | T | Solid | 3550B | |
| 680-27062-8 | 041M480410 | T | Solid | 3550B | |
| 680-27062-9 | 041M480610 | T | Solid | 3550B | |
| 680-27062-10 | 041M480710 | T | Solid | 3550B | |
| 680-27062-10MS | Matrix Spike | T | Solid | 3550B | |
| 680-27062-10MSD | Matrix Spike Duplicate | T | Solid | 3550B | |
| **Analysis Batch:680-77352** | | | | | |
| MB 680-77068/12-AA | Method Blank | T | Solid | 8270C | 680-77068 |
| 680-27062-1 | 041M480110 | T | Solid | 8270C | 680-77068 |
| 680-27062-2 | 041N480110 | T | Solid | 8270C | 680-77068 |
| 680-27062-3 | 041M480910 | T | Solid | 8270C | 680-77068 |
| 680-27062-4 | 041M480810 | T | Solid | 8270C | 680-77068 |
| 680-27062-5 | 041M480210 | T | Solid | 8270C | 680-77068 |
| 680-27062-6 | 041M480310 | T | Solid | 8270C | 680-77068 |
| 680-27062-7 | 041M480510 | T | Solid | 8270C | 680-77068 |
| 680-27062-8 | 041M480410 | T | Solid | 8270C | 680-77068 |
| 680-27062-9 | 041M480610 | T | Solid | 8270C | 680-77068 |
| 680-27062-10 | 041M480710 | T | Solid | 8270C | 680-77068 |
| 680-27062-10MS | Matrix Spike | T | Solid | 8270C | 680-77068 |
| 680-27062-10MSD | Matrix Spike Duplicate | T | Solid | 8270C | 680-77068 |

**Report Basis**
T = Total

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

## QC Association Summary

| Lab Sample ID | Client Sample ID | Report Basis | Client Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| **GC Semi VOA** | | | | | |
| **Prep Batch: 640-32883** | | | | | |
| LCS 640-32883/2-AA | Lab Control Spike | T | Solid | 3550B | |
| LCSD 640-32883/3-AA | Lab Control Spike Duplicate | T | Solid | 3550B | |
| MB 640-32883/1-AA | Method Blank | T | Solid | 3550B | |
| 680-27062-1 | 041M480110 | T | Solid | 3550B | |
| 680-27062-2 | 041N480110 | T | Solid | 3550B | |
| 680-27062-3 | 041M480910 | T | Solid | 3550B | |
| 680-27062-4 | 041M480810 | T | Solid | 3550B | |
| 680-27062-5 | 041M480210 | T | Solid | 3550B | |
| 680-27062-6 | 041M480310 | T | Solid | 3550B | |
| 680-27062-7 | 041M480510 | T | Solid | 3550B | |
| 680-27062-8 | 041M480410 | T | Solid | 3550B | |
| 680-27062-8MS | Matrix Spike | T | Solid | 3550B | |
| 680-27062-8MSD | Matrix Spike Duplicate | T | Solid | 3550B | |
| 680-27062-9 | 041M480610 | T | Solid | 3550B | |
| 680-27062-10 | 041M480710 | T | Solid | 3550B | |
| **Analysis Batch:640-32998** | | | | | |
| 680-27062-8MS | Matrix Spike | T | Solid | FL-PRO | 640-32883 |
| 680-27062-8MSD | Matrix Spike Duplicate | T | Solid | FL-PRO | 640-32883 |
| **Analysis Batch:640-32999** | | | | | |
| LCS 640-32883/2-AA | Lab Control Spike | T | Solid | FL-PRO | 640-32883 |
| LCSD 640-32883/3-AA | Lab Control Spike Duplicate | T | Solid | FL-PRO | 640-32883 |
| MB 640-32883/1-AA | Method Blank | T | Solid | FL-PRO | 640-32883 |
| **Analysis Batch:640-33087** | | | | | |
| 680-27062-1 | 041M480110 | T | Solid | FL-PRO | 640-32883 |
| 680-27062-2 | 041N480110 | T | Solid | FL-PRO | 640-32883 |
| 680-27062-5 | 041M480210 | T | Solid | FL-PRO | 640-32883 |
| 680-27062-9 | 041M480610 | T | Solid | FL-PRO | 640-32883 |
| **Analysis Batch:640-33088** | | | | | |
| 680-27062-3 | 041M480910 | T | Solid | FL-PRO | 640-32883 |
| 680-27062-4 | 041M480810 | T | Solid | FL-PRO | 640-32883 |
| 680-27062-6 | 041M480310 | T | Solid | FL-PRO | 640-32883 |
| 680-27062-7 | 041M480510 | T | Solid | FL-PRO | 640-32883 |
| 680-27062-8 | 041M480410 | T | Solid | FL-PRO | 640-32883 |
| 680-27062-10 | 041M480710 | T | Solid | FL-PRO | 640-32883 |

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

## QC Association Summary

| Lab Sample ID | Client Sample ID | Report Basis | Client Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| **GC Semi VOA** | | | | | |
| **Prep Batch: 680-77069** | | | | | |
| LCS 680-77069/12-AA | Lab Control Spike | T | Solid | 3550B | |
| MB 680-77069/11-AA | Method Blank | T | Solid | 3550B | |
| 680-27062-1 | 041M480110 | T | Solid | 3550B | |
| 680-27062-1DL | 041M480110 | T | Solid | 3550B | |
| 680-27062-2 | 041N480110 | T | Solid | 3550B | |
| 680-27062-3 | 041M480910 | T | Solid | 3550B | |
| 680-27062-3DL | 041M480910 | T | Solid | 3550B | |
| 680-27062-4 | 041M480810 | T | Solid | 3550B | |
| 680-27062-5 | 041M480210 | T | Solid | 3550B | |
| 680-27062-5DL | 041M480210 | T | Solid | 3550B | |
| 680-27062-6 | 041M480310 | T | Solid | 3550B | |
| 680-27062-7 | 041M480510 | T | Solid | 3550B | |
| 680-27062-8 | 041M480410 | T | Solid | 3550B | |
| 680-27062-9 | 041M480610 | T | Solid | 3550B | |
| 680-27062-10 | 041M480710 | T | Solid | 3550B | |
| 680-27062-10MS | Matrix Spike | T | Solid | 3550B | |
| 680-27062-10MSD | Matrix Spike Duplicate | T | Solid | 3550B | |
| **Analysis Batch:680-77317** | | | | | |
| LCS 680-77069/12-AA | Lab Control Spike | T | Solid | 8081A_8082 | 680-77069 |
| MB 680-77069/11-AA | Method Blank | T | Solid | 8081A_8082 | 680-77069 |
| 680-27062-2 | 041N480110 | T | Solid | 8081A_8082 | 680-77069 |
| 680-27062-3 | 041M480910 | T | Solid | 8081A_8082 | 680-77069 |
| 680-27062-3DL | 041M480910 | T | Solid | 8081A_8082 | 680-77069 |
| 680-27062-4 | 041M480810 | T | Solid | 8081A_8082 | 680-77069 |
| 680-27062-5 | 041M480210 | T | Solid | 8081A_8082 | 680-77069 |
| 680-27062-5DL | 041M480210 | T | Solid | 8081A_8082 | 680-77069 |
| 680-27062-6 | 041M480310 | T | Solid | 8081A_8082 | 680-77069 |
| 680-27062-7 | 041M480510 | T | Solid | 8081A_8082 | 680-77069 |
| 680-27062-8 | 041M480410 | T | Solid | 8081A_8082 | 680-77069 |
| 680-27062-9 | 041M480610 | T | Solid | 8081A_8082 | 680-77069 |
| 680-27062-10 | 041M480710 | T | Solid | 8081A_8082 | 680-77069 |
| 680-27062-10MS | Matrix Spike | T | Solid | 8081A_8082 | 680-77069 |
| 680-27062-10MSD | Matrix Spike Duplicate | T | Solid | 8081A_8082 | 680-77069 |

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

## QC Association Summary

| Lab Sample ID | Client Sample ID | Report Basis | Client Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| **GC Semi VOA** | | | | | |
| **Analysis Batch:680-77454** | | | | | |
| 680-27062-1 | 041M480110 | T | Solid | 8081A_8082 | 680-77069 |
| 680-27062-1DL | 041M480110 | T | Solid | 8081A_8082 | 680-77069 |
| 680-27062-2 | 041N480110 | T | Solid | 8081A_8082 | 680-77069 |
| 680-27062-3 | 041M480910 | T | Solid | 8081A_8082 | 680-77069 |
| 680-27062-4 | 041M480810 | T | Solid | 8081A_8082 | 680-77069 |
| 680-27062-5 | 041M480210 | T | Solid | 8081A_8082 | 680-77069 |
| 680-27062-6 | 041M480310 | T | Solid | 8081A_8082 | 680-77069 |
| 680-27062-7 | 041M480510 | T | Solid | 8081A_8082 | 680-77069 |
| 680-27062-8 | 041M480410 | T | Solid | 8081A_8082 | 680-77069 |
| 680-27062-9 | 041M480610 | T | Solid | 8081A_8082 | 680-77069 |
| 680-27062-10 | 041M480710 | T | Solid | 8081A_8082 | 680-77069 |

**Report Basis**
T = Total

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

## QC Association Summary

| Lab Sample ID | Client Sample ID | Report Basis | Client Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| **Metals** | | | | | |
| **Prep Batch: 680-76337** | | | | | |
| LCS 680-76337/8-AA | Lab Control Spike | T | Solid | 3050B | |
| MB 680-76337/7-AA | Method Blank | T | Solid | 3050B | |
| 680-27062-11 | 041M100710 | T | Solid | 3050B | |
| 680-27062-12 | 041M100810 | T | Solid | 3050B | |
| 680-27062-13 | 041M100910 | T | Solid | 3050B | |
| 680-27062-13MS | Matrix Spike | T | Solid | 3050B | |
| 680-27062-13MSD | Matrix Spike Duplicate | T | Solid | 3050B | |
| 680-27062-14 | 041M101010 | T | Solid | 3050B | |
| 680-27062-15 | 041N101010 | T | Solid | 3050B | |
| **Analysis Batch:680-76466** | | | | | |
| LCS 680-76337/8-AA | Lab Control Spike | T | Solid | 6010B | 680-76337 |
| MB 680-76337/7-AA | Method Blank | T | Solid | 6010B | 680-76337 |
| 680-27062-11 | 041M100710 | T | Solid | 6010B | 680-76337 |
| 680-27062-12 | 041M100810 | T | Solid | 6010B | 680-76337 |
| 680-27062-13 | 041M100910 | T | Solid | 6010B | 680-76337 |
| 680-27062-13MS | Matrix Spike | T | Solid | 6010B | 680-76337 |
| 680-27062-13MSD | Matrix Spike Duplicate | T | Solid | 6010B | 680-76337 |
| 680-27062-14 | 041M101010 | T | Solid | 6010B | 680-76337 |
| 680-27062-15 | 041N101010 | T | Solid | 6010B | 680-76337 |
| **Prep Batch: 680-76739** | | | | | |
| LCS 680-76739/18-AA | Lab Control Spike | T | Solid | 7471A | |
| MB 680-76739/17-AA | Method Blank | T | Solid | 7471A | |
| 680-27062-11 | 041M100710 | T | Solid | 7471A | |
| 680-27062-12 | 041M100810 | T | Solid | 7471A | |
| 680-27062-13 | 041M100910 | T | Solid | 7471A | |
| 680-27062-14 | 041M101010 | T | Solid | 7471A | |
| 680-27062-15 | 041N101010 | T | Solid | 7471A | |
| **Analysis Batch:680-77033** | | | | | |
| LCS 680-76739/18-AA | Lab Control Spike | T | Solid | 7471A | 680-76739 |
| MB 680-76739/17-AA | Method Blank | T | Solid | 7471A | 680-76739 |
| 680-27062-11 | 041M100710 | T | Solid | 7471A | 680-76739 |
| 680-27062-12 | 041M100810 | T | Solid | 7471A | 680-76739 |
| 680-27062-13 | 041M100910 | T | Solid | 7471A | 680-76739 |
| 680-27062-14 | 041M101010 | T | Solid | 7471A | 680-76739 |
| 680-27062-15 | 041N101010 | T | Solid | 7471A | 680-76739 |

**Report Basis**
T = Total

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

## QC Association Summary

| Lab Sample ID | Client Sample ID | Report Basis | Client Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| **General Chemistry** | | | | | |
| **Analysis Batch:680-76258** | | | | | |
| 680-27062-1 | 041M480110 | T | Solid | PercentMoisture | |
| 680-27062-2 | 041N480110 | T | Solid | PercentMoisture | |
| 680-27062-3 | 041M480910 | T | Solid | PercentMoisture | |
| 680-27062-4 | 041M480810 | T | Solid | PercentMoisture | |
| 680-27062-5 | 041M480210 | T | Solid | PercentMoisture | |
| 680-27062-6 | 041M480310 | T | Solid | PercentMoisture | |
| 680-27062-7 | 041M480510 | T | Solid | PercentMoisture | |
| 680-27062-8 | 041M480410 | T | Solid | PercentMoisture | |
| 680-27062-9 | 041M480610 | T | Solid | PercentMoisture | |
| 680-27062-10 | 041M480710 | T | Solid | PercentMoisture | |
| 680-27062-11 | 041M100710 | T | Solid | PercentMoisture | |
| 680-27062-12 | 041M100810 | T | Solid | PercentMoisture | |
| 680-27062-13 | 041M100910 | T | Solid | PercentMoisture | |
| 680-27062-14 | 041M101010 | T | Solid | PercentMoisture | |
| 680-27062-15 | 041N101010 | T | Solid | PercentMoisture | |
| **Analysis Batch:680-77026** | | | | | |
| LCS 680-77026/2 | Lab Control Spike | T | Solid | 9060 | |
| LCSD 680-77026/3 | Lab Control Spike Duplicate | T | Solid | 9060 | |
| MB 680-77026/1 | Method Blank | T | Solid | 9060 | |
| 680-27062-1 | 041M480110 | T | Solid | 9060 | |
| 680-27062-2 | 041N480110 | T | Solid | 9060 | |
| 680-27062-3 | 041M480910 | T | Solid | 9060 | |
| 680-27062-4 | 041M480810 | T | Solid | 9060 | |
| 680-27062-5 | 041M480210 | T | Solid | 9060 | |
| 680-27062-6 | 041M480310 | T | Solid | 9060 | |
| 680-27062-7 | 041M480510 | T | Solid | 9060 | |
| 680-27062-7DU | Duplicate | T | Solid | 9060 | |
| 680-27062-8 | 041M480410 | T | Solid | 9060 | |
| 680-27062-9 | 041M480610 | T | Solid | 9060 | |
| 680-27062-10 | 041M480710 | T | Solid | 9060 | |
| 680-27062-11 | 041M100710 | T | Solid | 9060 | |
| 680-27062-12 | 041M100810 | T | Solid | 9060 | |
| 680-27062-13 | 041M100910 | T | Solid | 9060 | |
| 680-27062-14 | 041M101010 | T | Solid | 9060 | |
| 680-27062-15 | 041N101010 | T | Solid | 9060 | |

**Report Basis**
T = Total

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

## Surrogate Recovery Report

**8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)**

**Client Matrix: Solid**

| Lab Sample ID | Client Sample ID | (FBP) (%Rec) | (NBZ) (%Rec) | (TPH) (%Rec) |
|---|---|---|---|---|
| 680-27062-10 MS | 041M480710 | 41 | 40 | 44 |
| 680-27062-10 MSD | 041M480710 | 44 | 42 | 50 |
| MB 680-77068/12-AA | | 72 | 55 | 75 |
| 680-27062-1 | 041M480110 | 103 | 84 | 104 |
| 680-27062-2 | 041N480110 | 55 | 47 | 54 |
| 680-27062-3 | 041M480910 | 0 J | 0 J | 0 J |
| 680-27062-4 | 041M480810 | 0 J | 0 J | 0 J |
| 680-27062-5 | 041M480210 | 0 J | 0 J | 0 J |
| 680-27062-6 | 041M480310 | 0 J | 0 J | 0 J |
| 680-27062-7 | 041M480510 | 55 | 43 | 54 |
| 680-27062-8 | 041M480410 | 50 | 41 | 52 |
| 680-27062-9 | 041M480610 | 48 | 42 | 49 |
| 680-27062-10 | 041M480710 | 52 | 44 | 56 |

| Surrogate | | Acceptance Limits |
|---|---|---|
| (FBP) | 2-Fluorobiphenyl | 38 - 104 |
| (NBZ) | Nitrobenzene-d5 | 33 - 94 |
| (TPH) | Terphenyl-d14 | 40 - 129 |

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

## Surrogate Recovery Report

**8081A 8082 Organochlorine Pesticides & Polychlorinated Biphenyls by Gas Chromatography**

**Client Matrix: Solid**

| Lab Sample ID | Client Sample ID | (DCB1) (%Rec) | (DCB2) (%Rec) | (TCX1) (%Rec) | (TCX2) (%Rec) |
|---|---|---|---|---|---|
| 680-27062-10 MS | 041M480710 | 75 | | 37 | |
| 680-27062-10 MSD | 041M480710 | 92 | | 105 | |
| LCS 680-77069/12-AA | | 110 | | 107 | |
| MB 680-77069/11-AA | | 109 | | 107 | |
| 680-27062-1 | 041M480110 | 0 U | | 0 U | |
| 680-27062-1 DL | 041M480110 | | 0 U | | 0 U |
| 680-27062-2 | 041N480110 | 0 U | | 0 U | |
| | 041N480110 | | 0 U | | 0 U |
| 680-27062-3 | 041M480910 | 152 J | | 117 | |
| 680-27062-3 DL | 041M480910 | | 0 U | | 0 U |
| 680-27062-4 | 041M480810 | 96 | | 86 | |
| 680-27062-5 | 041M480210 | 0 U | | 0 U | |
| 680-27062-5 DL | 041M480210 | | 0 U | | 0 U |
| 680-27062-6 | 041M480310 | 113 | | 83 | |
| 680-27062-7 | 041M480510 | 67 | | 80 | |
| 680-27062-8 | 041M480410 | 59 | | 75 | |
| 680-27062-9 | 041M480610 | 88 | | 129 | |
| 680-27062-10 | 041M480710 | 92 | | 101 | |

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

## Surrogate Recovery Report

**8081A 8082 Organochlorine Pesticides & Polychlorinated Biphenyls by Gas Chromatography**

**Client Matrix: Solid**

| Surrogate | | Acceptance Limits |
|---|---|---|
| (DCB1) | DCB Decachlorobiphenyl | 30 - 150 |
| (TCX1) | Tetrachloro-m-xylene | 30 - 150 |

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

## Surrogate Recovery Report

**FL-PRO Florida Method for Determination of Petroleum Range Organics by GC/FID**

**Client Matrix: Solid**

| Lab Sample ID | Client Sample ID | (NC39) (%Rec) | (OTPH) (%Rec) |
|---|---|---|---|
| 680-27062-8 MS | 041M480410 | 99 | 82 |
| 680-27062-8 MSD | 041M480410 | 97 | 80 |
| LCS 640-32883/2-AA | | 81 | 80 |
| LCSD 640-32883/3-AA | | 86 | 90 |
| MB 640-32883/1-AA | | 116 | 107 |
| 680-27062-1 | 041M480110 | 72 | 99 |
| 680-27062-2 | 041N480110 | 66 | 83 |
| 680-27062-3 | 041M480910 | 0 J | 0 J |
| 680-27062-4 | 041M480810 | 0 J | 0 J |
| 680-27062-5 | 041M480210 | 0 | 0 |
| 680-27062-6 | 041M480310 | 0 J | 0 J |
| 680-27062-7 | 041M480510 | 78 | 72 |
| 680-27062-8 | 041M480410 | 80 | 80 |
| 680-27062-9 | 041M480610 | 60 | 86 |
| 680-27062-10 | 041M480710 | 81 | 79 |

| Surrogate | | Acceptance Limits |
|---|---|---|
| (NC39) | n-C39 | 60 - 118 |
| (OTPH) | o-Terphenyl | 62 - 109 |

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

**Method Blank - Batch: 680-77068**

**Method: 8270C**
**Preparation: 3550B**

Lab Sample ID: MB 680-77068/12-AA
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 06/07/2007 1549
Date Prepared: 06/07/2007 1000

Analysis Batch: 680-77352
Prep Batch: 680-77068
Units: ug/Kg

Instrument ID: GC/MS SemiVolatiles - E
Lab File ID: e61611.d
Initial Weight/Volume: 30.00 g
Final Weight/Volume: 1 mL
Injection Volume:

| Analyte | Result | Qual | MDL | RL |
|---|---|---|---|---|
| Benzo[g,h,i]perylene | 23 | U | 23 | 330 |
| Benzo[k]fluoranthene | 36 | U | 36 | 330 |
| Acenaphthene | 19 | U | 19 | 330 |
| Acenaphthylene | 17 | U | 17 | 330 |
| Benzo[a]anthracene | 31 | U | 31 | 330 |
| Benzo[a]pyrene | 19 | U | 19 | 330 |
| Benzo[b]fluoranthene | 26 | U | 26 | 330 |
| 1-Methylnaphthalene | 29 | U | 29 | 330 |
| 2-Methylnaphthalene | 24 | U | 24 | 330 |
| Chrysene | 25 | U | 25 | 330 |
| Dibenz(a,h)anthracene | 24 | U | 24 | 330 |
| Fluoranthene | 26 | U | 26 | 330 |
| Fluorene | 22 | U | 22 | 330 |
| Indeno[1,2,3-cd]pyrene | 26 | U | 26 | 330 |
| Naphthalene | 19 | U | 19 | 330 |
| Phenanthrene | 29 | U | 29 | 330 |
| Pyrene | 20 | U | 20 | 330 |
| Anthracene | 23 | U | 23 | 330 |

| Surrogate | % Rec | Acceptance Limits |
|---|---|---|
| 2-Fluorobiphenyl | 72 | 38 - 104 |
| Nitrobenzene-d5 | 55 | 33 - 94 |
| Terphenyl-d14 | 75 | 40 - 129 |

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

**Matrix Spike/**
**Matrix Spike Duplicate Recovery Report - Batch: 680-77068**

**Method: 8270C**
**Preparation: 3550B**

| | | | | | |
|---|---|---|---|---|---|
| MS Lab Sample ID: | 680-27062-10 | Analysis Batch: | 680-77352 | Instrument ID: | GC/MS SemiVolatiles - E |
| Client Matrix: | Solid | Prep Batch: | 680-77068 | Lab File ID: | e61623.d |
| Dilution: | 1.0 | | | Initial Weight/Volume: | 30.06 g |
| Date Analyzed: | 06/07/2007 2047 | | | Final Weight/Volume: | 1 mL |
| Date Prepared: | 06/07/2007 1000 | | | Injection Volume: | |

| | | | | | |
|---|---|---|---|---|---|
| MSD Lab Sample ID: | 680-27062-10 | Analysis Batch: | 680-77352 | Instrument ID: | GC/MS SemiVolatiles - E |
| Client Matrix: | Solid | Prep Batch: | 680-77068 | Lab File ID: | e61624.d |
| Dilution: | 1.0 | | | Initial Weight/Volume: | 30.08 g |
| Date Analyzed: | 06/07/2007 2111 | | | Final Weight/Volume: | 1 mL |
| Date Prepared: | 06/07/2007 1000 | | | Injection Volume: | |

| | % Rec. | | | | | | |
|---|---|---|---|---|---|---|---|
| Analyte | MS | MSD | Limit | RPD | RPD Limit | MS Qual | MSD Qual |
| Benzo[g,h,i]perylene | 38 | 40 | 41 - 122 | 6 | 50 | J | J |
| Benzo[k]fluoranthene | 43 | 51 | 36 - 124 | 17 | 50 | | |
| Acenaphthene | 44 | 48 | 36 - 108 | 8 | 50 | | |
| Acenaphthylene | 44 | 48 | 41 - 112 | 8 | 50 | | |
| Benzo[a]anthracene | 44 | 50 | 46 - 116 | 12 | 50 | J | |
| Benzo[a]pyrene | 44 | 50 | 37 - 120 | 11 | 50 | | |
| Benzo[b]fluoranthene | 48 | 49 | 35 - 122 | 4 | 50 | | |
| 1-Methylnaphthalene | 40 | 43 | 12 - 128 | 6 | 50 | | |
| 2-Methylnaphthalene | 43 | 45 | 39 - 104 | 4 | 50 | | |
| Chrysene | 46 | 50 | 46 - 118 | 9 | 50 | | |
| Dibenz(a,h)anthracene | 40 | 43 | 41 - 124 | 8 | 50 | J | |
| Fluoranthene | 50 | 54 | 41 - 124 | 8 | 50 | | |
| Fluorene | 46 | 50 | 37 - 113 | 9 | 50 | | |
| Indeno[1,2,3-cd]pyrene | 39 | 41 | 36 - 133 | 4 | 50 | | |
| Naphthalene | 39 | 40 | 34 - 97 | 2 | 50 | | |
| Phenanthrene | 46 | 50 | 47 - 114 | 9 | 50 | J | |
| Pyrene | 46 | 52 | 36 - 128 | 13 | 50 | | |
| Anthracene | 46 | 51 | 46 - 115 | 10 | 50 | | |

| Surrogate | MS % Rec | MSD % Rec | Acceptance Limits |
|---|---|---|---|
| 2-Fluorobiphenyl | 41 | 44 | 38 - 104 |
| Nitrobenzene-d5 | 40 | 42 | 33 - 94 |
| Terphenyl-d14 | 44 | 50 | 40 - 129 |

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

**Matrix Spike/**
**Matrix Spike Duplicate Data Report - Batch: 680-77068**

**Method: 8270C**
**Preparation: 3550B**

| | | | | | |
|---|---|---|---|---|---|
| MS Lab Sample ID: | 680-27062-10 | Units: ug/Kg | MSD Lab Sample ID: | 680-27062-10 |
| Client Matrix: | Solid | | Client Matrix: | Solid |
| Dilution: | 1.0 | | Dilution: | 1.0 |
| Date Analyzed: | 06/07/2007 2047 | | Date Analyzed: | 06/07/2007 2111 |
| Date Prepared: | 06/07/2007 1000 | | Date Prepared: | 06/07/2007 1000 |

| Analyte | Sample Result/Qual | | MS Spike Amount | MSD Spike Amount | MS Result/Qual | | MSD Result/Qual | |
|---|---|---|---|---|---|---|---|---|
| Benzo[g,h,i]perylene | 45 | U | 6460 | 6450 | 2430 | J | 2570 | J |
| Benzo[k]fluoranthene | 70 | U | 6460 | 6450 | 2760 | | 3270 | |
| Acenaphthene | 37 | U | 6460 | 6450 | 2840 | | 3090 | |
| Acenaphthylene | 33 | U | 6460 | 6450 | 2870 | | 3100 | |
| Benzo[a]anthracene | 60 | U | 6460 | 6450 | 2870 | J | 3220 | |
| Benzo[a]pyrene | 37 | U | 6460 | 6450 | 2870 | | 3200 | |
| Benzo[b]fluoranthene | 50 | U | 6460 | 6450 | 3070 | | 3190 | |
| 1-Methylnaphthalene | 56 | U | 6460 | 6450 | 2610 | | 2780 | |
| 2-Methylnaphthalene | 46 | U | 6460 | 6450 | 2770 | | 2900 | |
| Chrysene | 48 | U | 6460 | 6450 | 2950 | | 3240 | |
| Dibenz(a,h)anthracene | 46 | U | 6460 | 6450 | 2580 | J | 2780 | |
| Fluoranthene | 50 | U | 6460 | 6450 | 3240 | | 3490 | |
| Fluorene | 43 | U | 6460 | 6450 | 2970 | | 3250 | |
| Indeno[1,2,3-cd]pyrene | 50 | U | 6460 | 6450 | 2520 | | 2620 | |
| Naphthalene | 37 | U | 6460 | 6450 | 2540 | | 2600 | |
| Phenanthrene | 56 | U | 6460 | 6450 | 2950 | J | 3220 | |
| Pyrene | 39 | U | 6460 | 6450 | 2980 | | 3380 | |
| Anthracene | 45 | U | 6460 | 6450 | 2990 | | 3310 | |

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

**Method Blank - Batch: 680-77069**

**Method: 8081A_8082**
**Preparation: 3550B**

Lab Sample ID: MB 680-77069/11-AA
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 06/08/2007 1600
Date Prepared: 06/07/2007 1035

Analysis Batch: 680-77317
Prep Batch: 680-77069
Units: ug/Kg

Instrument ID: GC SemiVolatiles - M
Lab File ID: mf08011.d
Initial Weight/Volume: 30.00 g
Final Weight/Volume: 10 mL
Injection Volume:
Column ID: PRIMARY

| Analyte | Result | Qual | MDL | RL |
|---|---|---|---|---|
| 4,4'-DDD | 0.30 | U | 0.30 | 3.3 |
| 4,4'-DDE | 0.30 | U | 0.30 | 3.3 |
| gamma-BHC (Lindane) | 0.14 | U | 0.14 | 1.7 |
| 4,4'-DDT | 0.27 | U | 0.27 | 3.3 |
| Aldrin | 0.14 | U | 0.14 | 1.7 |
| alpha-BHC | 0.52 | U | 0.52 | 1.7 |
| beta-BHC | 0.47 | U | 0.47 | 1.7 |
| Chlordane (technical) | 3.0 | U | 3.0 | 17 |
| delta-BHC | 0.23 | U | 0.23 | 1.7 |
| alpha-Chlordane | 0.17 | U | 0.17 | 1.7 |
| Dieldrin | 0.35 | U | 0.35 | 3.3 |
| Endosulfan I | 0.16 | U | 0.16 | 1.7 |
| Endosulfan II | 0.27 | U | 0.27 | 3.3 |
| Endosulfan sulfate | 0.37 | U | 0.37 | 3.3 |
| Endrin | 0.32 | U | 0.32 | 3.3 |
| Endrin aldehyde | 0.65 | U | 0.65 | 3.3 |
| Endrin ketone | 0.32 | U | 0.32 | 3.3 |
| Heptachlor | 0.32 | U | 0.32 | 1.7 |
| Heptachlor epoxide | 0.21 | U | 0.21 | 1.7 |
| Methoxychlor | 0.47 | U | 0.47 | 17 |
| Toxaphene | 12 | U | 12 | 170 |
| gamma-Chlordane | 0.22 | U | 0.22 | 1.7 |

| Surrogate | % Rec | Acceptance Limits |
|---|---|---|
| DCB Decachlorobiphenyl | 109 | 30 - 150 |
| Tetrachloro-m-xylene | 107 | 30 - 150 |

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

**Laboratory Control Sample - Batch: 680-77069**

**Method: 8081A_8082**
**Preparation: 3550B**

Lab Sample ID: LCS 680-77069/12-AA
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 06/08/2007 1620
Date Prepared: 06/07/2007 1035

Analysis Batch: 680-77317
Prep Batch: 680-77069
Units: ug/Kg

Instrument ID: GC SemiVolatiles - M
Lab File ID: mf08012.d
Initial Weight/Volume: 30.00 g
Final Weight/Volume: 10 mL
Injection Volume:
Column ID: PRIMARY

| Analyte | Spike Amount | Result | % Rec. | Limit | Qual |
|---|---|---|---|---|---|
| 4,4'-DDD | 6.53 | 6.70 | 103 | 35 - 149 | |
| 4,4'-DDE | 6.80 | 6.71 | 99 | 35 - 122 | |
| gamma-BHC (Lindane) | 3.33 | 3.15 | 94 | 16 - 144 | |
| 4,4'-DDT | 6.67 | 5.39 | 81 | 24 - 171 | |
| Aldrin | 3.43 | 3.27 | 95 | 26 - 139 | |
| alpha-BHC | 3.57 | 3.17 | 89 | 23 - 127 | |
| beta-BHC | 3.63 | 3.38 | 93 | 22 - 134 | |
| delta-BHC | 3.50 | 3.07 | 88 | 43 - 123 | |
| Dieldrin | 6.67 | 6.73 | 101 | 29 - 146 | |
| Endosulfan I | 3.33 | 3.47 | 104 | 31 - 124 | |
| Endosulfan II | 6.67 | 6.60 | 99 | 31 - 127 | |
| Endosulfan sulfate | 6.77 | 6.40 | 95 | 55 - 136 | |
| Endrin | 6.77 | 7.14 | 105 | 45 - 148 | |
| Endrin aldehyde | 6.70 | 5.66 | 85 | 36 - 123 | |
| Endrin ketone | 6.70 | 7.15 | 107 | 47 - 156 | |
| Heptachlor | 3.33 | 3.50 | 105 | 19 - 150 | |
| Heptachlor epoxide | 3.33 | 3.23 | 97 | 43 - 132 | |
| Methoxychlor | 6.70 | 4.63 | 69 | 13 - 208 | I |

| Surrogate | % Rec | Acceptance Limits |
|---|---|---|
| DCB Decachlorobiphenyl | 110 | 30 - 150 |
| Tetrachloro-m-xylene | 107 | 30 - 150 |

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

**Matrix Spike/**
**Matrix Spike Duplicate Recovery Report - Batch: 680-77069**

**Method: 8081A_8082**
**Preparation: 3550B**

| | | | | | |
|---|---|---|---|---|---|
| MS Lab Sample ID: | 680-27062-10 | Analysis Batch: | 680-77317 | Instrument ID: | GC SemiVolatiles - M |
| Client Matrix: | Solid | Prep Batch: | 680-77069 | Lab File ID: | mf08028.d |
| Dilution: | 4.0 | | | Initial Weight/Volume: | 30.06 g |
| Date Analyzed: | 06/08/2007 2132 | | | Final Weight/Volume: | 10 mL |
| Date Prepared: | 06/07/2007 1035 | | | Injection Volume: | |
| | | | | Column ID: | PRIMARY |

| | | | | | |
|---|---|---|---|---|---|
| MSD Lab Sample ID: | 680-27062-10 | Analysis Batch: | 680-77317 | Instrument ID: | GC SemiVolatiles - M |
| Client Matrix: | Solid | Prep Batch: | 680-77069 | Lab File ID: | mf08029.d |
| Dilution: | 4.0 | | | Initial Weight/Volume: | 30.04 g |
| Date Analyzed: | 06/08/2007 2151 | | | Final Weight/Volume: | 10 mL |
| Date Prepared: | 06/07/2007 1035 | | | Injection Volume: | |
| | | | | Column ID: | PRIMARY |

| | % Rec. | | | | | | |
|---|---|---|---|---|---|---|---|
| Analyte | MS | MSD | Limit | RPD | RPD Limit | MS Qual | MSD Qual |
| 4,4'-DDD | 270 | 101 | 35 - 149 | 27 | 50 | | |
| 4,4'-DDE | -39 | 186 | 35 - 122 | 42 | 50 | | |
| gamma-BHC (Lindane) | 58 | 56 | 16 - 144 | 5 | 50 | I | I |
| 4,4'-DDT | 82 | 53 | 24 - 171 | 43 | 50 | I | I |
| Aldrin | 58 | 62 | 26 - 139 | 6 | 50 | I | I |
| alpha-BHC | 168 | 87 | 23 - 127 | 64 | 50 | I J | I J |
| beta-BHC | 25 | 36 | 22 - 134 | NC | 50 | U | U |
| delta-BHC | 113 | 59 | 43 - 123 | 63 | 50 | I | I J |
| Dieldrin | 107 | 144 | 29 - 146 | 29 | 50 | I | I |
| Endosulfan I | 69 | 83 | 31 - 124 | 19 | 50 | I | I |
| Endosulfan II | 64 | 48 | 31 - 127 | 29 | 50 | I | I |
| Endosulfan sulfate | 60 | 98 | 55 - 136 | 48 | 50 | I | I |
| Endrin | 66 | 77 | 45 - 148 | 16 | 50 | I | I |
| Endrin aldehyde | 41 | 59 | 36 - 123 | 34 | 50 | I | I |
| Endrin ketone | 336 | 547 | 47 - 156 | 48 | 50 | J | J |
| Heptachlor | 133 | 98 | 19 - 150 | 31 | 50 | I | I |
| Heptachlor epoxide | 83 | 94 | 43 - 132 | 12 | 50 | I | I |
| Methoxychlor | 0 | 0 | 13 - 208 | NC | 50 | U J | U J |

| Surrogate | MS % Rec | MSD % Rec | Acceptance Limits |
|---|---|---|---|
| DCB Decachlorobiphenyl | 75 | 92 | 30 - 150 |
| Tetrachloro-m-xylene | 37 | 105 | 30 - 150 |

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

**Matrix Spike/**
**Matrix Spike Duplicate Data Report - Batch: 680-77069**

**Method: 8081A_8082**
**Preparation: 3550B**

| | | | | | |
|---|---|---|---|---|---|
| MS Lab Sample ID: | 680-27062-10 | Units: ug/Kg | MSD Lab Sample ID: | 680-27062-10 |
| Client Matrix: | Solid | | Client Matrix: | Solid |
| Dilution: | 4.0 | | Dilution: | 4.0 |
| Date Analyzed: | 06/08/2007 2132 | | Date Analyzed: | 06/08/2007 2151 |
| Date Prepared: | 06/07/2007 1035 | | Date Prepared: | 06/07/2007 1035 |

| Analyte | Sample Result/Qual | | MS Spike Amount | MSD Spike Amount | MS Result/Qual | | MSD Result/Qual | |
|---|---|---|---|---|---|---|---|---|
| 4,4'-DDD | 54 | | 12.7 | 12.7 | 88.3 | | 66.9 | |
| 4,4'-DDE | 110 | | 13.2 | 13.2 | 105 | | 161 | |
| gamma-BHC (Lindane) | 1.1 | U | 6.46 | 6.46 | 3.76 | I | 3.59 | I |
| 4,4'-DDT | 2.1 | U | 12.9 | 12.9 | 10.6 | I | 6.85 | I |
| Aldrin | 1.1 | U | 6.65 | 6.65 | 3.84 | I | 4.10 | I |
| alpha-BHC | 4.0 | U | 6.91 | 6.91 | 11.6 | I J | 6.01 | I J |
| beta-BHC | 3.6 | U | 7.04 | 7.04 | 1.77 | U | 2.54 | U |
| delta-BHC | 1.8 | U | 6.78 | 6.78 | 7.63 | I | 4.00 | I J |
| Dieldrin | 2.7 | U | 12.9 | 12.9 | 13.9 | I | 18.6 | I |
| Endosulfan I | 1.2 | U | 6.46 | 6.46 | 4.44 | I | 5.35 | I |
| Endosulfan II | 2.1 | U | 12.9 | 12.9 | 8.28 | I | 6.19 | I |
| Endosulfan sulfate | 2.9 | U | 13.1 | 13.1 | 7.91 | I | 12.9 | I |
| Endrin | 2.5 | U | 13.1 | 13.1 | 8.59 | I | 10.1 | I |
| Endrin aldehyde | 5.0 | U | 13.0 | 13.0 | 5.37 | I | 7.60 | I |
| Endrin ketone | 2.5 | U | 13.0 | 13.0 | 43.6 | J | 71.0 | J |
| Heptachlor | 2.5 | U | 6.46 | 6.46 | 8.59 | I | 6.31 | I |
| Heptachlor epoxide | 1.6 | U | 6.46 | 6.46 | 5.38 | I | 6.09 | I |
| Methoxychlor | 3.6 | U | 13.0 | 13.0 | 0.0 | U J | 0.0 | U J |

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

**Method Blank - Batch: 640-32883**

**Method: FL-PRO**
**Preparation: 3550B**

Lab Sample ID: MB 640-32883/1-AA
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 06/04/2007 0821
Date Prepared: 05/31/2007 1300

Analysis Batch: 640-32999
Prep Batch: 640-32883
Units: mg/Kg

Instrument ID: SGJ Varian 3400
Lab File ID: 1F04G6.d
Initial Weight/Volume: 30.09 g
Final Weight/Volume: 2.0 mL
Injection Volume:

| Analyte | Result | Qual | MDL | RL |
|---|---|---|---|---|
| Total Petroleum Hydrocarbons (C8-C40) | 2.4 | I | 2.3 | 10 |

| Surrogate | % Rec | Acceptance Limits |
|---|---|---|
| o-Terphenyl | 107 | 62 - 109 |
| n-C39 | 116 | 60 - 118 |

**Laboratory Control/**
**Laboratory Control Duplicate Recovery Report - Batch: 640-32883**

**Method: FL-PRO**
**Preparation: 3550B**

LCS Lab Sample ID: LCS 640-32883/2-AA
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 06/04/2007 0851
Date Prepared: 05/31/2007 1300

Analysis Batch: 640-32999
Prep Batch: 640-32883
Units: mg/Kg

Instrument ID: SGJ Varian 3400
Lab File ID: 1F04G10.d
Initial Weight/Volume: 30.04 g
Final Weight/Volume: 2.0 mL
Injection Volume:

LCSD Lab Sample ID: LCSD 640-32883/3-AA
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 06/04/2007 0858
Date Prepared: 05/31/2007 1300

Analysis Batch: 640-32999
Prep Batch: 640-32883
Units: mg/Kg

Instrument ID: SGJ Varian 3400
Lab File ID: 1F04G11.d
Initial Weight/Volume: 30.09 g
Final Weight/Volume: 2.0 mL
Injection Volume:

| Analyte | % Rec. LCS | % Rec. LCSD | Limit | RPD | RPD Limit | LCS Qual | LCSD Qual |
|---|---|---|---|---|---|---|---|
| Total Petroleum Hydrocarbons (C8-C40) | 77 | 83 | 63 - 153 | 8 | 25 | | |

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

**Laboratory Control/**
**Laboratory Duplicate Data Report - Batch: 640-32883**

**Method: FL-PRO**
**Preparation: 3550B**

| | | | | | |
|---|---|---|---|---|---|
| LCS Lab Sample ID: | LCS 640-32883/2-AA | Units: | mg/Kg | LCSD Lab Sample ID: | LCSD |
| Client Matrix: | Solid | | | Client Matrix: | Solid |
| Dilution: | 1.0 | | | Dilution: | 1.0 |
| Date Analyzed: | 06/04/2007 0851 | | | Date Analyzed: | 06/04/2007 0858 |
| Date Prepared: | 05/31/2007 1300 | | | Date Prepared: | 05/31/2007 1300 |

| Analyte | LCS Spike Amount | LCSD Spike Amount | LCS Result/Qual | LCSD Result/Qual |
|---|---|---|---|---|
| Total Petroleum Hydrocarbons (C8-C40) | 90.5 | 90.4 | 69.5 | 75.0 |

**Matrix Spike/**
**Matrix Spike Duplicate Recovery Report - Batch: 640-32883**

**Method: FL-PRO**
**Preparation: 3550B**

| | | | | | |
|---|---|---|---|---|---|
| MS Lab Sample ID: | 680-27062-8 | Analysis Batch: | 640-32998 | Instrument ID: | SGH HP 5890 |
| Client Matrix: | Solid | Prep Batch: | 640-32883 | Lab File ID: | 1F04H17.d |
| Dilution: | 1.0 | | | Initial Weight/Volume: | 30.08 g |
| Date Analyzed: | 06/04/2007 1601 | | | Final Weight/Volume: | 2.0 mL |
| Date Prepared: | 05/31/2007 1300 | | | Injection Volume: | |

| | | | | | |
|---|---|---|---|---|---|
| MSD Lab Sample ID: | 680-27062-8 | Analysis Batch: | 640-32998 | Instrument ID: | SGH HP 5890 |
| Client Matrix: | Solid | Prep Batch: | 640-32883 | Lab File ID: | 1F04H18.d |
| Dilution: | 1.0 | | | Initial Weight/Volume: | 30.02 g |
| Date Analyzed: | 06/04/2007 1610 | | | Final Weight/Volume: | 2.0 mL |
| Date Prepared: | 05/31/2007 1300 | | | Injection Volume: | |

| | % Rec. | | | | | | |
|---|---|---|---|---|---|---|---|
| Analyte | MS | MSD | Limit | RPD | RPD Limit | MS Qual | MSD Qual |
| Total Petroleum Hydrocarbons (C8-C40) | 95 | 98 | 62 - 204 | 3 | 25 | | |

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

**Matrix Spike/**
**Matrix Spike Duplicate Data Report - Batch: 640-32883**

**Method: FL-PRO**
**Preparation: 3550B**

| | | | | |
|---|---|---|---|---|
| MS Lab Sample ID: | 680-27062-8 | Units: mg/Kg | MSD Lab Sample ID: | 680-27062-8 |
| Client Matrix: | Solid | | Client Matrix: | Solid |
| Dilution: | 1.0 | | Dilution: | 1.0 |
| Date Analyzed: | 06/04/2007 1601 | | Date Analyzed: | 06/04/2007 1610 |
| Date Prepared: | 05/31/2007 1300 | | Date Prepared: | 05/31/2007 1300 |

| Analyte | Sample Result/Qual | MS Spike Amount | MSD Spike Amount | MS Result/Qual | MSD Result/Qual |
|---|---|---|---|---|---|
| Total Petroleum Hydrocarbons (C8-C40) | 40 | 94.0 | 94.2 | 129 | 132 |

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

**Method Blank - Batch: 680-76337**

**Method: 6010B**
**Preparation: 3050B**

Lab Sample ID: MB 680-76337/7-AA
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 05/30/2007 2206
Date Prepared: 05/30/2007 1018

Analysis Batch: 680-76466
Prep Batch: 680-76337
Units: mg/Kg

Instrument ID: ICP/AES
Lab File ID: N/A
Initial Weight/Volume: 1.00 g
Final Weight/Volume: 100 mL

| Analyte | Result | Qual | MDL | RL |
|---|---|---|---|---|
| Silver | 0.099 | U | 0.099 | 1.0 |
| Aluminum | 4.5 | U | 4.5 | 20 |
| Manganese | 0.21 | U | 0.21 | 1.0 |
| Arsenic | 0.67 | U | 0.67 | 1.0 |
| Barium | 0.30 | U | 0.30 | 1.0 |
| Beryllium | 0.017 | U | 0.017 | 0.40 |
| Calcium | 2.4 | U | 2.4 | 50 |
| Cadmium | 0.22 | U | 0.22 | 0.50 |
| Cobalt | 0.17 | U | 0.17 | 1.0 |
| Chromium | 0.13 | U | 0.13 | 1.0 |
| Copper | 0.17 | U | 0.17 | 2.0 |
| Iron | 4.2 | U | 4.2 | 5.0 |
| Potassium | 1.3 | U | 1.3 | 100 |
| Magnesium | 1.2 | U | 1.2 | 50 |
| Sodium | 50 | U | 50 | 100 |
| Nickel | 0.26 | U | 0.26 | 4.0 |
| Lead | 0.21 | U | 0.21 | 0.50 |
| Antimony | 0.45 | U | 0.45 | 2.0 |
| Selenium | 0.90 | U | 0.90 | 2.5 |
| Thallium | 1.3 | U | 1.3 | 2.5 |
| Vanadium | 0.14 | U | 0.14 | 1.0 |
| Zinc | 0.75 | U | 0.75 | 2.0 |

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

**Laboratory Control Sample - Batch: 680-76337**

**Method: 6010B**
**Preparation: 3050B**

Lab Sample ID: LCS 680-76337/8-AA
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 05/30/2007 2211
Date Prepared: 05/30/2007 1018

Analysis Batch: 680-76466
Prep Batch: 680-76337
Units: mg/Kg

Instrument ID: ICP/AES
Lab File ID: N/A
Initial Weight/Volume: 1.00 g
Final Weight/Volume: 100 mL

| Analyte | Spike Amount | Result | % Rec. | Limit | Qual |
|---|---|---|---|---|---|
| Silver | 5.00 | 4.70 | 94 | 75 - 125 | |
| Aluminum | 200 | 196 | 98 | 75 - 125 | |
| Manganese | 50.0 | 50.7 | 101 | 75 - 125 | |
| Arsenic | 200 | 183 | 92 | 75 - 125 | |
| Barium | 200 | 195 | 98 | 75 - 125 | |
| Beryllium | 5.00 | 4.83 | 97 | 75 - 125 | |
| Calcium | 500 | 505 | 101 | 75 - 125 | |
| Cadmium | 5.00 | 4.68 | 94 | 75 - 125 | |
| Cobalt | 50.0 | 47.9 | 96 | 75 - 125 | |
| Chromium | 20.0 | 19.4 | 97 | 75 - 125 | |
| Copper | 25.0 | 24.7 | 99 | 75 - 125 | |
| Iron | 109 | 105 | 96 | 75 - 125 | |
| Potassium | 500 | 460 | 92 | 75 - 125 | |
| Magnesium | 500 | 478 | 96 | 75 - 125 | |
| Sodium | 500 | 469 | 94 | 75 - 125 | |
| Nickel | 50.0 | 47.3 | 95 | 75 - 125 | |
| Lead | 50.0 | 47.1 | 94 | 75 - 125 | |
| Antimony | 50.0 | 45.0 | 90 | 75 - 125 | |
| Selenium | 200 | 180 | 90 | 75 - 125 | |
| Thallium | 200 | 188 | 94 | 75 - 125 | |
| Vanadium | 50.0 | 48.3 | 97 | 75 - 125 | |
| Zinc | 50.0 | 48.8 | 98 | 75 - 125 | |

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

**Matrix Spike/**
**Matrix Spike Duplicate Recovery Report - Batch: 680-76337**

**Method: 6010B**
**Preparation: 3050B**

| | | | | | |
|---|---|---|---|---|---|
| MS Lab Sample ID: | 680-27062-13 | Analysis Batch: | 680-76466 | Instrument ID: | ICP/AES |
| Client Matrix: | Solid | Prep Batch: | 680-76337 | Lab File ID: | N/A |
| Dilution: | 1.0 | | | Initial Weight/Volume: | 1.09 g |
| Date Analyzed: | 05/30/2007 2240 | | | Final Weight/Volume: | 100 mL |
| Date Prepared: | 05/30/2007 1018 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| MSD Lab Sample ID: | 680-27062-13 | Analysis Batch: | 680-76466 | Instrument ID: | ICP/AES |
| Client Matrix: | Solid | Prep Batch: | 680-76337 | Lab File ID: | N/A |
| Dilution: | 1.0 | | | Initial Weight/Volume: | 1.09 g |
| Date Analyzed: | 05/30/2007 2245 | | | Final Weight/Volume: | 100 mL |
| Date Prepared: | 05/30/2007 1018 | | | | |

| | % Rec. | | | | | | |
|---|---|---|---|---|---|---|---|
| Analyte | MS | MSD | Limit | RPD | RPD Limit | MS Qual | MSD Qual |
| Silver | 95 | 97 | 75 - 125 | 2 | 20 | | |
| Aluminum | 93 | 110 | 75 - 125 | 8 | 20 | | |
| Manganese | 95 | 101 | 75 - 125 | 5 | 20 | | |
| Arsenic | 92 | 94 | 75 - 125 | 2 | 20 | | |
| Barium | 98 | 100 | 75 - 125 | 2 | 20 | | |
| Beryllium | 97 | 100 | 75 - 125 | 3 | 20 | | |
| Calcium | 51 | 631 | 75 - 125 | 121 | 20 | J | J |
| Cadmium | 93 | 94 | 75 - 125 | 1 | 20 | | |
| Cobalt | 96 | 98 | 75 - 125 | 2 | 20 | | |
| Chromium | 96 | 98 | 75 - 125 | 2 | 20 | | |
| Copper | 99 | 102 | 75 - 125 | 3 | 20 | | |
| Iron | 38 | 75 | 75 - 125 | 11 | 20 | J | |
| Potassium | 91 | 94 | 75 - 125 | 3 | 20 | | |
| Magnesium | 95 | 100 | 75 - 125 | 5 | 20 | | |
| Sodium | 88 | 95 | 75 - 125 | 7 | 20 | | |
| Nickel | 95 | 96 | 75 - 125 | 1 | 20 | | |
| Lead | 94 | 104 | 75 - 125 | 10 | 20 | | |
| Antimony | 90 | 94 | 75 - 125 | 4 | 20 | | |
| Selenium | 90 | 92 | 75 - 125 | 2 | 20 | | |
| Thallium | 95 | 97 | 75 - 125 | 2 | 20 | | |
| Vanadium | 97 | 100 | 75 - 125 | 2 | 20 | | |
| Zinc | 97 | 99 | 75 - 125 | 2 | 20 | | |

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

**Matrix Spike/**
**Matrix Spike Duplicate Data Report - Batch: 680-76337**

**Method: 6010B**
**Preparation: 3050B**

| | | | | | |
|---|---|---|---|---|---|
| MS Lab Sample ID: | 680-27062-13 | Units: mg/Kg | MSD Lab Sample ID: | 680-27062-13 |
| Client Matrix: | Solid | | Client Matrix: | Solid |
| Dilution: | 1.0 | | Dilution: | 1.0 |
| Date Analyzed: | 05/30/2007 2240 | | Date Analyzed: | 05/30/2007 2245 |
| Date Prepared: | 05/30/2007 1018 | | Date Prepared: | 05/30/2007 1018 |

| Analyte | Sample Result/Qual | | MS Spike Amount | MSD Spike Amount | MS Result/Qual | | MSD Result/Qual | |
|---|---|---|---|---|---|---|---|---|
| Silver | 0.10 | U | 5.14 | 5.14 | 4.87 | | 4.99 | |
| Aluminum | 210 | | 206 | 206 | 396 | | 431 | |
| Manganese | 12 | | 51.4 | 51.4 | 60.8 | | 63.8 | |
| Arsenic | 0.69 | U | 206 | 206 | 190 | | 194 | |
| Barium | 0.96 | I | 206 | 206 | 203 | | 207 | |
| Beryllium | 0.017 | U | 5.14 | 5.14 | 5.00 | | 5.13 | |
| Calcium | 700 | | 514 | 514 | 967 | J | 3950 | J |
| Cadmium | 0.23 | U | 5.14 | 5.14 | 4.76 | | 4.81 | |
| Cobalt | 0.17 | U | 51.4 | 51.4 | 49.6 | | 50.5 | |
| Chromium | 0.65 | I | 20.6 | 20.6 | 20.5 | | 20.8 | |
| Copper | 0.33 | I | 25.7 | 25.7 | 25.8 | | 26.7 | |
| Iron | 280 | | 103 | 103 | 322 | J | 360 | |
| Potassium | 12 | I | 514 | 514 | 480 | | 494 | |
| Magnesium | 40 | I | 514 | 514 | 527 | | 554 | |
| Sodium | 73 | I | 514 | 514 | 525 | | 561 | |
| Nickel | 0.27 | U | 51.4 | 51.4 | 48.9 | | 49.4 | |
| Lead | 1.1 | | 51.4 | 51.4 | 49.3 | | 54.6 | |
| Antimony | 0.46 | U | 51.4 | 51.4 | 46.2 | | 48.1 | |
| Selenium | 0.93 | U | 206 | 206 | 186 | | 190 | |
| Thallium | 1.3 | U | 206 | 206 | 195 | | 199 | |
| Vanadium | 0.60 | I | 51.4 | 51.4 | 50.6 | | 51.8 | |
| Zinc | 2.0 | I | 51.4 | 51.4 | 51.9 | | 53.1 | |

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

**Method Blank - Batch: 680-76739**

**Method: 7471A**
**Preparation: 7471A**

Lab Sample ID: MB 680-76739/17-AA
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 06/04/2007 1826
Date Prepared: 06/04/2007 1130

Analysis Batch: 680-77033
Prep Batch: 680-76739
Units: mg/Kg

Instrument ID: LEEMAN1
Lab File ID: N/A
Initial Weight/Volume: 1.00 g
Final Weight/Volume: 50 mL

| Analyte | Result | Qual | MDL | RL |
|---|---|---|---|---|
| Mercury | 0.0040 | U | 0.0040 | 0.020 |

**Laboratory Control Sample - Batch: 680-76739**

**Method: 7471A**
**Preparation: 7471A**

Lab Sample ID: LCS 680-76739/18-AA
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 06/04/2007 1829
Date Prepared: 06/04/2007 1130

Analysis Batch: 680-77033
Prep Batch: 680-76739
Units: mg/Kg

Instrument ID: LEEMAN1
Lab File ID: N/A
Initial Weight/Volume: 1.00 g
Final Weight/Volume: 50 mL

| Analyte | Spike Amount | Result | % Rec. | Limit | Qual |
|---|---|---|---|---|---|
| Mercury | 0.125 | 0.121 | 97 | 80 - 120 | |

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

**Method Blank - Batch: 680-77026**

**Method: 9060**
**Preparation: N/A**

Lab Sample ID: MB 680-77026/1
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 06/05/2007 1300
Date Prepared: N/A

Analysis Batch: 680-77026
Prep Batch: N/A
Units: mg/Kg

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume:
Final Weight/Volume:

| Analyte | Result | Qual | MDL | RL |
|---|---|---|---|---|
| Total Organic Carbon | 390 | U | 390 | 1000 |

**Laboratory Control/**
**Laboratory Control Duplicate Recovery Report - Batch: 680-77026**

**Method: 9060**
**Preparation: N/A**

LCS Lab Sample ID: LCS 680-77026/2
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 06/05/2007 1300
Date Prepared: N/A

Analysis Batch: 680-77026
Prep Batch: N/A
Units: mg/Kg

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: mL
Final Weight/Volume: mL

LCSD Lab Sample ID: LCSD 680-77026/3
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 06/05/2007 1300
Date Prepared: N/A

Analysis Batch: 680-77026
Prep Batch: N/A
Units: mg/Kg

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: mL
Final Weight/Volume: mL

| Analyte | % Rec. LCS | % Rec. LCSD | Limit | RPD | RPD Limit | LCS Qual | LCSD Qual |
|---|---|---|---|---|---|---|---|
| Total Organic Carbon | 89 | 88 | 60 - 140 | 1 | 40 | | |

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

**Laboratory Control/**
**Laboratory Duplicate Data Report - Batch: 680-77026**

**Method: 9060**
**Preparation: N/A**

LCS Lab Sample ID: LCS 680-77026/2
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 06/05/2007 1300
Date Prepared: N/A

Units: mg/Kg

LCSD Lab Sample ID: LCSD 680-77026/3
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 06/05/2007 1300
Date Prepared: N/A

| Analyte | LCS Spike Amount | LCSD Spike Amount | LCS Result/Qual | LCSD Result/Qual |
|---|---|---|---|---|
| Total Organic Carbon | 408000 | 408000 | 364000 | 361000 |

**Matrix Duplicate - Batch: 680-77026**

**Method: 9060**
**Preparation: N/A**

Lab Sample ID: 680-27062-7
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 06/05/2007 1300
Date Prepared: N/A

Analysis Batch: 680-77026
Prep Batch: N/A
Units: mg/Kg

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: mL
Final Weight/Volume: mL

| Analyte | Sample Result/Qual | Result | RPD | Limit | Qual |
|---|---|---|---|---|---|
| Total Organic Carbon | 30000 | 37900 | 22 | 40 | |

Calculations are performed before rounding to avoid round-off errors in calculated results.

# STL Burlington
# South Burlington, VT

## Sample Data Summary Package

## SDG: 68027062

SEVERN TRENT STL

# PARTICLE SIZE

SEVERN TRENT STL

**STL Burlington**
30 Community Drive, Suite 11
South Burlington, VT 05403

Tel: 802 660 1990 Fax: 802 660 1919
www.stl-inc.com

June 11, 2007

Ms. Linda Wolfe
STL Savannah
5102 LaRoche Avenue
Savannah, GA 31404-6019

Re: Laboratory Project No. 27005
Case: TERRAINE; SDG: 68027062

Dear Ms. Wolfe:

Enclosed are the analytical results for the samples that were received by STL Burlington on May 30th, 2007. Laboratory identification numbers were assigned, and designated as follows:

| Lab ID | Client Sample ID | Sample Date | Sample Matrix |
|---|---|---|---|
| | Received: 05/30/07 ETR No: 120187 | | |
| 711738 | 041M480110 | 05/24/07 | SOLID |
| 711739 | 041N480110 | 05/24/07 | SOLID |
| 711740 | 041M480910 | 05/24/07 | SOLID |
| 711741 | 041M480810 | 05/24/07 | SOLID |
| 711742 | 041M480210 | 05/24/07 | SOLID |
| 711743 | 041M480310 | 05/24/07 | SOLID |
| 711744 | 041M480510 | 05/24/07 | SOLID |
| 711745 | 041M480410 | 05/24/07 | SOLID |
| 711746 | 041M480610 | 05/24/07 | SOLID |
| 711747 | 041M480710 | 05/24/07 | SOLID |
| 711748 | 041M100710 | 05/24/07 | SOLID |
| 711749 | 041M100810 | 05/24/07 | SOLID |
| 711750 | 041M100910 | 05/24/07 | SOLID |
| 711751 | 041M101010 | 05/24/07 | SOLID |
| 711752 | 041N101010 | 05/24/07 | SOLID |

Documentation of the condition of the samples at the time of their receipt and any exception to the laboratory's Sample Acceptance Policy is documented in the Sample Handling section of this submittal.

Particle Size Analysis by ASTM D422
There were no exceptions to the method quality control criteria during the analyses of these samples.

The analytical results associated with the samples presented in this test report were generated under a quality system that adheres to requirements specified in the NELAC standard. Release of the data in this test report and any associated electronic deliverables is authorized by the Laboratory Director's designee as verified by the following signature.

If there are any questions regarding this submittal, please contact me at 802 660-1990.

Sincerely,

Kristine Dusablon

Kristine A. Dusablon
Project Manager

Enclosure

SEVERN TRENT STL

# Chain of Custody

# Chain of Custody Record

STL

| Client Information (Sub Contract Lab) | Sampler: | Lab PM: Wolfe, Linda | Carrier Tracking No(s): | COC No: 680-61813.1 |
|---|---|---|---|---|
| Client Contact: Shipping/Receiving | Phone: | E-Mail: lwolfe@stl-inc.com | | Page: Page 1 of 2 |
| Company: Severn Trent Laboratories, Inc. | | | | STL Job #: 680-27062-1 |
| Address: 30 Community Drive, Suite 11, | Due Date Requested: 6/11/2007 | | | |
| City: South Burlington | TAT Requested (days): | | | |
| State, Zip: VT, 05403 | | | | |
| Phone: 802-660-1990(Tel) | PO #: | | | |
| Email: | WO #: | | | |
| Project Name: Terraine - NAS Pensacola | Project #: 68003621 | | | |
| Site: | SSOW#: | | | |

**Analysis Requested**

**Preservation Codes:**

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - Di Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)

Other:

| Sample Identification Client ID (Lab ID) | Sample Date | Sample Time | Sample Type (C=comp, G=grab) | Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air) | Field Filtered Sample (Yes or No) | Perform MS/MSD (Yes or No) | SUBCONTRACT/ | Total Number of Containers | Special Instructions/Note: |
|---|---|---|---|---|---|---|---|---|---|
| | | | Preservation Code: | | | | | | |
| 041M480110 (680-27062-1) | 5/24/07 | 16:00 | | Solid | | | X | 1 | |
| 041N480110 (680-27062-2) | 5/24/07 | 16:00 | | Solid | | | X | 1 | |
| 041M480910 (680-27062-3) | 5/24/07 | 16:30 | | Solid | | | X | 1 | |
| 041M480810 (680-27062-4) | 5/24/07 | 16:50 | | Solid | | | X | 1 | |
| 041M480210 (680-27062-5) | 5/24/07 | 17:00 | | Solid | | | X | 1 | |
| 041M480310 (680-27062-6) | 5/24/07 | 17:15 | | Solid | | | X | 1 | |
| 041M480510 (680-27062-7) | 5/24/07 | 17:30 | | Solid | | | X | 1 | |
| 041M480410 (680-27062-8) | 5/24/07 | 17:50 | | Solid | | | X | 1 | |
| 041M480610 (680-27062-9) | 5/24/07 | 18:05 | | Solid | | | X | 1 | |
| 041M480710 (680-27062-10) | 5/24/07 | 18:15 | | Solid | | | X | 1 | |
| 041M100710 (680-27062-11) | 5/24/07 | 10:42 | | Solid | | | X | 1 | |

*Possible Hazard Identification*

☐ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* ☐ *Poison B* ☐ *Unknown* ☐ *Radiological*

*Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)*

☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

| Empty Kit Relinquished by: | Date: | Time: | Method of Shipment: |
|---|---|---|---|

| Relinquished by: | Date/Time: | Company | Received by: | Date/Time: | Company |
|---|---|---|---|---|---|
| Brian Hilliard | 5-29-07 1700 | | | 5-30-07 0420 | STL VT |
| Relinquished by: | Date/Time: | Company | Received by: | Date/Time: | Company |
| Relinquished by: | Date/Time: | Company | Received by: | Date/Time: | Company |

| Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks: |
|---|---|---|

# Chain of Custody Record

STL

| Client Information (Sub Contract Lab) | Sampler: | Lab PM: Wolfe, Linda | Carrier Tracking No(s): | COC No: 680-61813.2 |
|---|---|---|---|---|
| Client Contact: Shipping/Receiving | Phone: | E-Mail: lwolfe@stl-inc.com | | Page: Page 2 of 2 |
| Company: Severn Trent Laboratories, Inc. | | | | STL Job #: 680-27062-1 |
| Address: 30 Community Drive, Suite 11, | Due Date Requested: 6/11/2007 | | | |
| City: South Burlington | TAT Requested (days): | | | |
| State, Zip: VT, 05403 | | | | |
| Phone: 802-660-1990(Tel) | PO #: | | | |
| Email: | WO #: | | | |
| Project Name: Terraine - NAS Pensacola | Project #: 68003621 | | | |
| Site: | SSOW#: | | | |

**Analysis Requested**

**Preservation Codes:**

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)

Other:

| Sample Identification Client ID (Lab ID) | Sample Date | Sample Time | Sample Type (C=comp, G=grab) | Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air) | Field Filtered Sample (Yes or No) | Perform MS/MSD (Yes or No) | SUBCONTRACT/ | Total Number of containers | Special Instructions/Note: |
|---|---|---|---|---|---|---|---|---|---|
| | | | Preservation Code: | | | | | | |
| 041M100810 (680-27062-12) | 5/24/07 | 9:35 | | Solid | | | X | 1 | |
| 041M100910 (680-27062-13) | 5/24/07 | 12:12 | | Solid | | | X | 1 | |
| 041M101010 (680-27062-14) | 5/24/07 | 11:37 | | Solid | | | X | 1 | |
| 041N101010 (680-27062-15) | 5/24/07 | 11:37 | | Solid | | | X | 1 | |

*Possible Hazard Identification*
☐ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* ☐ *Poison B* ☐ *Unknown* ☐ *Radiological*

*Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)*
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

| Empty Kit Relinquished by: | Date: | Time: | Method of Shipment: |
|---|---|---|---|

| Relinquished by: | Date/Time: | Company | Received by: | Date/Time: | Company |
|---|---|---|---|---|---|
| Brian Hellard | 5-29-07 1700 | | | 5 30-07 0920 | STLVT |
| Relinquished by: | Date/Time: | Company | Received by: | Date/Time: | Company |
| Relinquished by: | Date/Time: | Company | Received by: | Date/Time: | Company |

| Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks: |
|---|---|---|

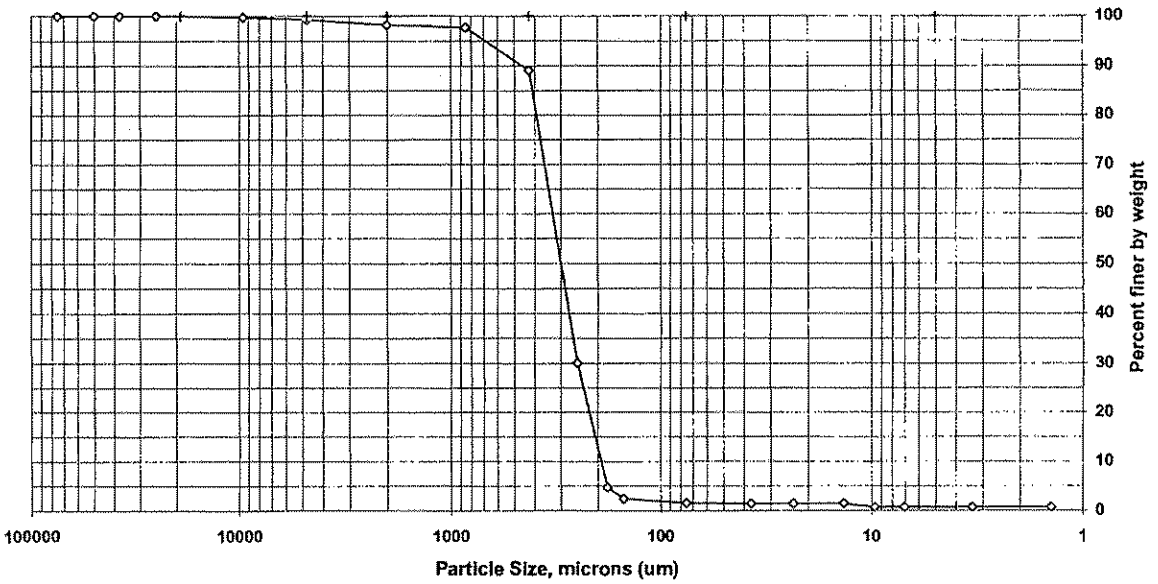
SEVERN TRENT STL

# Sample Data Summary Package - Geotechnical

# Particle Size of Soils by ASTM D422

| | | | | | |
|---|---|---|---|---|---|
| **Client Code:** | STLGAS | **SDG:** | 68027062 | **Date Received:** | 5/30/2007 |
| **Sample ID:** | 041M480110 | **ETR(s):** | 120187 | **Start Date:** | 5/30/2007 |
| **Lab ID:** | 711738 | | | **End Date:** | 6/4/2007 |

| | | | |
|---|---|---|---|
| **Percent Solids:** | 75.8% | **Non-soil material:** | plant |
| **Specific Gravity:** | 2.650 | **Shape (> #10):** | n/a |
| **Maximum Particle Size:** | 19 mm | **Hardness (> #10):** | n/a |




| Sieve size | Particle size, um | Percent finer | Incremental percent |
|---|---|---|---|
| 3 inch | 75000 | 100.0 | 0.0 |
| 2 inch | 50000 | 100.0 | 0.0 |
| 1.5 inch | 37500 | 100.0 | 0.0 |
| 1 inch | 25000 | 100.0 | 0.0 |
| 3/4 inch | 19000 | 100.0 | 0.0 |
| 3/8 inch | 9500 | 99.8 | 0.2 |
| #4 | 4750 | 99.3 | 0.5 |
| #10 | 2000 | 98.2 | 1.1 |
| #20 | 850 | 97.7 | 0.5 |
| #40 | 425 | 89.1 | 8.6 |
| #60 | 250 | 30.0 | 59.1 |
| #80 | 180 | 4.7 | 25.3 |
| #100 | 150 | 2.4 | 2.3 |
| #200 | 75 | 1.6 | 0.8 |
| Hydrometer | 37.1 | 1.4 | 0.1 |
| \| | 23.4 | 1.4 | 0.0 |
| \| | 13.5 | 1.4 | 0.0 |
| \| | 9.7 | 0.7 | 0.7 |
| \| | 7.0 | 0.7 | 0.0 |
| \| | 3.4 | 0.7 | 0.0 |
| V | 1.4 | 0.7 | 0.0 |

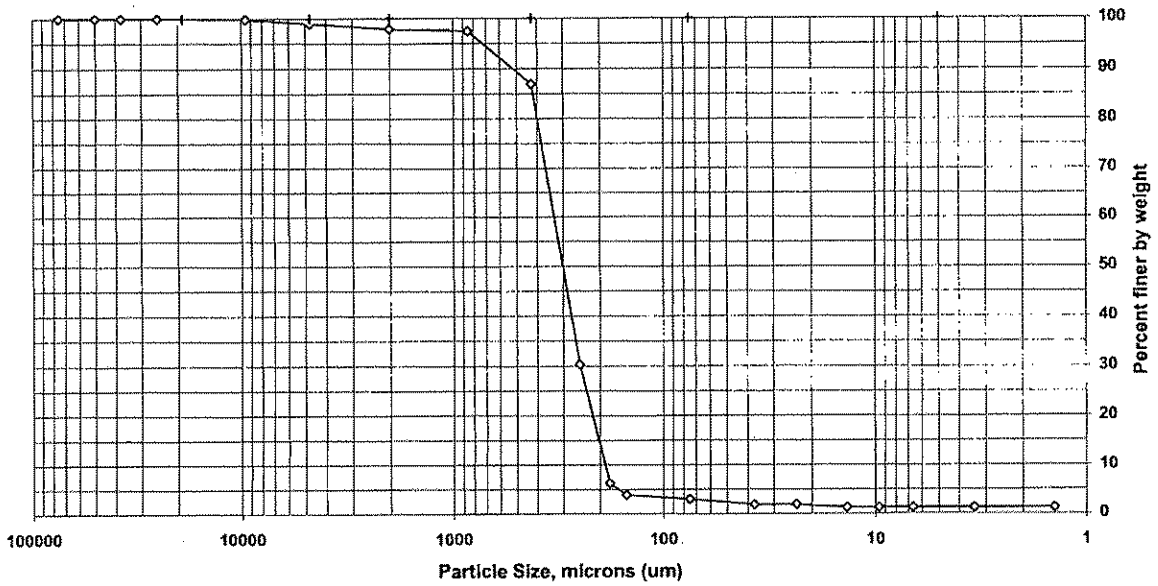
| Soil Classification | Percent of Total Sample |
|---|---|
| Gravel | 0.7 |
| Sand | 97.7 |
| Coarse Sand | 1.1 |
| Medium Sand | 9.1 |
| Fine Sand | 87.5 |
| Silt | 0.9 |
| Clay | 0.7 |

Preparation Method: **D2217**
Dispersion Device: Mechanical mixer with a metal paddle.
Dispersion Period: 1 minute

# Particle Size of Soils by ASTM D422

| | | | | | |
|---|---|---|---|---|---|
| **Client Code:** | STLGAS | **SDG:** | 68027062 | **Date Received:** | 5/30/2007 |
| **Sample ID:** | 041N480110 | **ETR(s):** | 120187 | **Start Date:** | 5/30/2007 |
| **Lab ID:** | 711739 | | | **End Date:** | 6/4/2007 |

| | | | |
|---|---|---|---|
| **Percent Solids:** | 72.0% | **Non-soil material:** | plant |
| **Specific Gravity:** | 2.650 | **Shape (> #10):** | n/a |
| **Maximum Particle Size:** | 19 mm | **Hardness (> #10):** | n/a |




| Sieve size | Particle size, um | Percent finer | Incremental percent |
|---|---|---|---|
| 3 inch | 75000 | 100.0 | 0.0 |
| 2 inch | 50000 | 100.0 | 0.0 |
| 1.5 inch | 37500 | 100.0 | 0.0 |
| 1 inch | 25000 | 100.0 | 0.0 |
| 3/4 inch | 19000 | 100.0 | 0.0 |
| 3/8 inch | 9500 | 99.8 | 0.2 |
| #4 | 4750 | 99.0 | 0.8 |
| #10 | 2000 | 98.0 | 1.0 |
| #20 | 850 | 97.5 | 0.5 |
| #40 | 425 | 86.9 | 10.5 |
| #60 | 250 | 30.3 | 56.6 |
| #80 | 180 | 6.3 | 24.1 |
| #100 | 150 | 3.8 | 2.4 |
| #200 | 75 | 2.9 | 0.9 |
| Hydrometer | 37.1 | 1.9 | 1.0 |
| I | 23.5 | 1.9 | 0.0 |
| I | 13.6 | 1.3 | 0.6 |
| I | 9.6 | 1.3 | 0.0 |
| I | 6.6 | 1.3 | 0.0 |
| I | 3.4 | 1.3 | 0.0 |
| V | 1.4 | 1.3 | 0.0 |

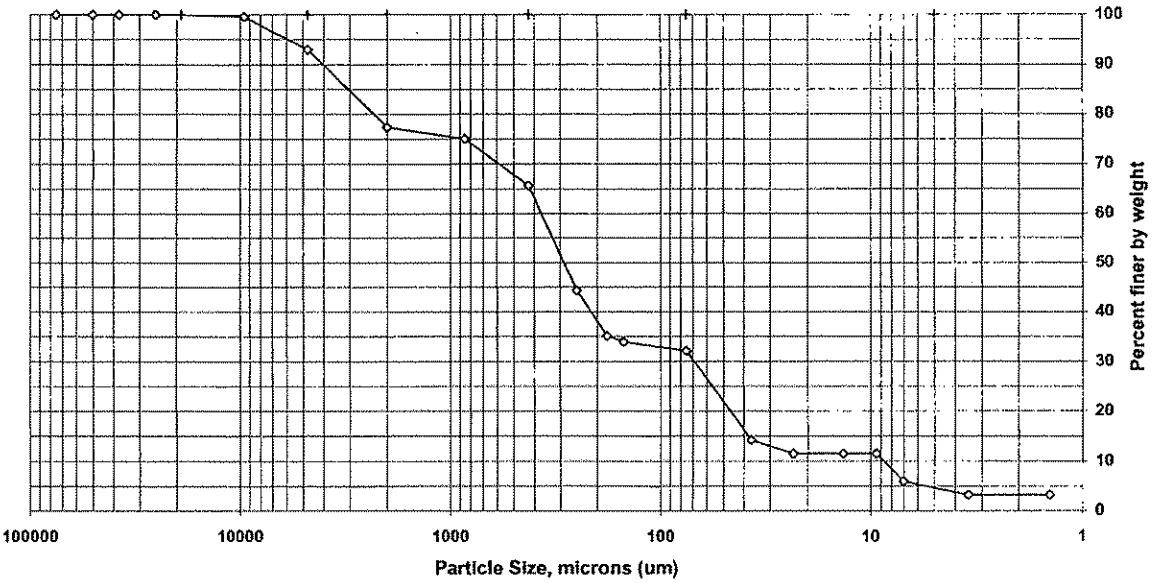
| Soil Classification | Percent of Total Sample |
|---|---|
| Gravel | 1.0 |
| Sand | 96.1 |
| Coarse Sand | 1.0 |
| Medium Sand | 11.0 |
| Fine Sand | 84.0 |
| Silt | 1.6 |
| Clay | 1.3 |

Preparation Method: **D2217**
Dispersion Device: Mechanical mixer with a metal paddle.
Dispersion Period: 1 minute

# Particle Size of Soils by ASTM D422

| | | | | | |
|---|---|---|---|---|---|
| **Client Code:** | STLGAS | **SDG:** | 68027062 | **Date Received:** | 5/30/2007 |
| **Sample ID:** | 041M480910 | **ETR(s):** | 120187 | **Start Date:** | 5/30/2007 |
| **Lab ID:** | 711740 | | | **End Date:** | 6/4/2007 |

| | | | |
|---|---|---|---|
| **Percent Solids:** | 35.1% | **Non-soil material:** | plant |
| **Specific Gravity:** | 2.650 | **Shape (> #10):** | subrounded |
| **Maximum Particle Size:** | 19 mm | **Hardness (> #10):** | hard |




| Sieve size | Particle size, um | Percent finer | Incremental percent |
|---|---|---|---|
| 3 inch | 75000 | 100.0 | 0.0 |
| 2 inch | 50000 | 100.0 | 0.0 |
| 1.5 inch | 37500 | 100.0 | 0.0 |
| 1 inch | 25000 | 100.0 | 0.0 |
| 3/4 inch | 19000 | 100.0 | 0.0 |
| 3/8 inch | 9500 | 99.6 | 0.4 |
| #4 | 4750 | 93.0 | 6.6 |
| #10 | 2000 | 77.4 | 15.6 |
| #20 | 850 | 75.0 | 2.3 |
| #40 | 425 | 65.7 | 9.4 |
| #60 | 250 | 44.3 | 21.3 |
| #80 | 180 | 35.1 | 9.2 |
| #100 | 150 | 33.9 | 1.2 |
| #200 | 75 | 32.2 | 1.8 |
| Hydrometer | 36.8 | 14.2 | 17.9 |
| I | 23.4 | 11.5 | 2.8 |
| I | 13.5 | 11.5 | 0.0 |
| I | 9.4 | 11.5 | 0.0 |
| I | 7.0 | 6.0 | 5.5 |
| I | 3.5 | 3.2 | 2.8 |
| V | 1.4 | 3.2 | 0.0 |

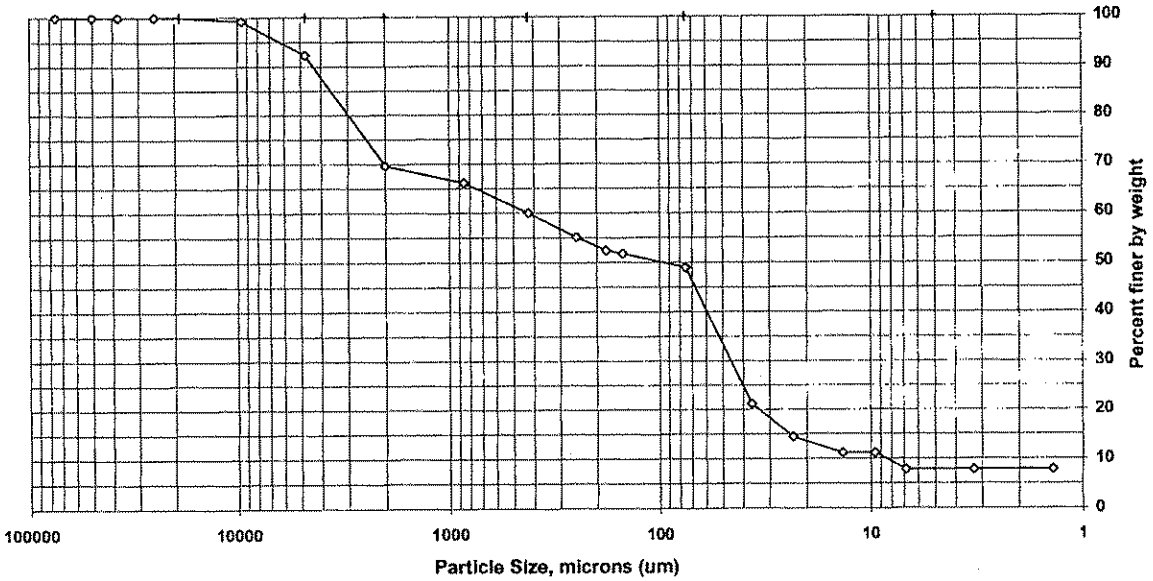
| Soil Classification | Percent of Total Sample |
|---|---|
| Gravel | 7.0 |
| Sand | 60.8 |
| Coarse Sand | 15.6 |
| Medium Sand | 11.7 |
| Fine Sand | 33.5 |
| Silt | 26.2 |
| Clay | 6.0 |

Preparation Method: **D2217**
Dispersion Device: Mechanical mixer with a metal paddle.
Dispersion Period: 1 minute

# Particle Size of Soils by ASTM D422

| | | | | | |
|---|---|---|---|---|---|
| **Client Code:** | STLGAS | **SDG:** | 68027062 | **Date Received:** | 5/30/2007 |
| **Sample ID:** | 041M480810 | **ETR(s):** | 120187 | **Start Date:** | 5/30/2007 |
| **Lab ID:** | 711741 | | | **End Date:** | 6/9/2007 |

| | | | | |
|---|---|---|---|---|
| **Percent Solids:** | 19.8% | | **Non-soil material:** | plant |
| **Specific Gravity:** | 2.650 | (assumed) | **Shape (> #10):** | n/a |
| **Maximum Particle Size:** | 19 mm | | **Hardness (> #10):** | n/a |




| Sieve size | Particle size, um | Percent finer | Incremental percent |
|---|---|---|---|
| 3 inch | 75000 | 100.0 | 0.0 |
| 2 inch | 50000 | 100.0 | 0.0 |
| 1.5 inch | 37500 | 100.0 | 0.0 |
| 1 inch | 25000 | 100.0 | 0.0 |
| 3/4 inch | 19000 | 100.0 | 0.0 |
| 3/8 inch | 9500 | 99.2 | 0.8 |
| #4 | 4750 | 92.3 | 6.9 |
| #10 | 2000 | 69.6 | 22.7 |
| #20 | 850 | 66.1 | 3.5 |
| #40 | 425 | 60.0 | 6.1 |
| #60 | 250 | 55.1 | 4.9 |
| #80 | 180 | 52.4 | 2.7 |
| #100 | 150 | 51.8 | 0.7 |
| #200 | 75 | 49.0 | 2.8 |
| Hydrometer | 36.4 | 21.2 | 27.8 |
| I | 23.2 | 14.5 | 6.7 |
| I | 13.5 | 11.2 | 3.3 |
| I | 9.5 | 11.2 | 0.0 |
| I | 6.8 | 7.8 | 3.3 |
| I | 3.3 | 7.8 | 0.0 |
| V | 1.4 | 7.8 | 0.0 |

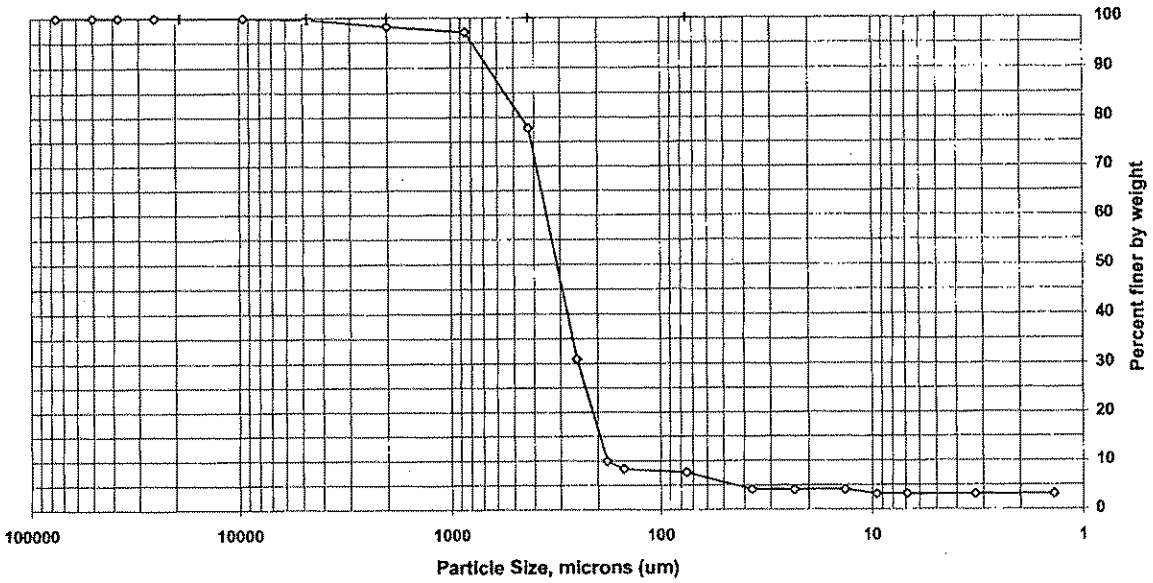
| Soil Classification | Percent of Total Sample |
|---|---|
| Gravel | 7.7 |
| Sand | 43.4 |
| Coarse Sand | 22.7 |
| Medium Sand | 9.6 |
| Fine Sand | 11.0 |
| Silt | 41.2 |
| Clay | 7.8 |

Preparation Method: **D2217**
Dispersion Device: Mechanical mixer with a metal paddle.
Dispersion Period: 1 minute

# Particle Size of Soils by ASTM D422

| | | | | | |
|---|---|---|---|---|---|
| **Client Code:** | STLGAS | **SDG:** | 68027062 | **Date Received:** | 5/30/2007 |
| **Sample ID:** | 041M480210 | **ETR(s):** | 120187 | **Start Date:** | 5/30/2007 |
| **Lab ID:** | 711742 | | | **End Date:** | 6/9/2007 |

| | | | | |
|---|---|---|---|---|
| **Percent Solids:** | 68.3% | | **Non-soil material:** | plant |
| **Specific Gravity:** | 2.650 | (assumed) | **Shape (> #10):** | n/a |
| **Maximum Particle Size:** | 25 mm | | **Hardness (> #10):** | n/a |




| Sieve size | Particle size, um | Percent finer | Incremental percent |
|---|---|---|---|
| 3 inch | 75000 | 100.0 | 0.0 |
| 2 inch | 50000 | 100.0 | 0.0 |
| 1.5 inch | 37500 | 100.0 | 0.0 |
| 1 inch | 25000 | 100.0 | 0.0 |
| 3/4 inch | 19000 | 100.0 | 0.0 |
| 3/8 inch | 9500 | 99.9 | 0.0 |
| #4 | 4750 | 99.7 | 0.3 |
| #10 | 2000 | 98.3 | 1.4 |
| #20 | 850 | 97.1 | 1.1 |
| #40 | 425 | 77.9 | 19.3 |
| #60 | 250 | 30.9 | 47.0 |
| #80 | 180 | 9.9 | 20.9 |
| #100 | 150 | 8.3 | 1.6 |
| #200 | 75 | 7.6 | 0.7 |
| Hydrometer | 36.7 | 4.1 | 3.6 |
| \| | 23.2 | 4.1 | 0.0 |
| \| | 13.4 | 4.1 | 0.0 |
| \| | 9.5 | 3.1 | 0.9 |
| \| | 6.9 | 3.1 | 0.0 |
| \| | 3.3 | 3.1 | 0.0 |
| V | 1.4 | 3.1 | 0.0 |

| Soil Classification | Percent of Total Sample |
|---|---|
| Gravel | 0.3 |
| Sand | 92.0 |
| Coarse Sand | 1.4 |
| Medium Sand | 20.4 |
| Fine Sand | 70.2 |
| Silt | 4.5 |
| Clay | 3.1 |

Preparation Method: **D2217**
Dispersion Device: Mechanical mixer with a metal paddle.
Dispersion Period: 1 minute

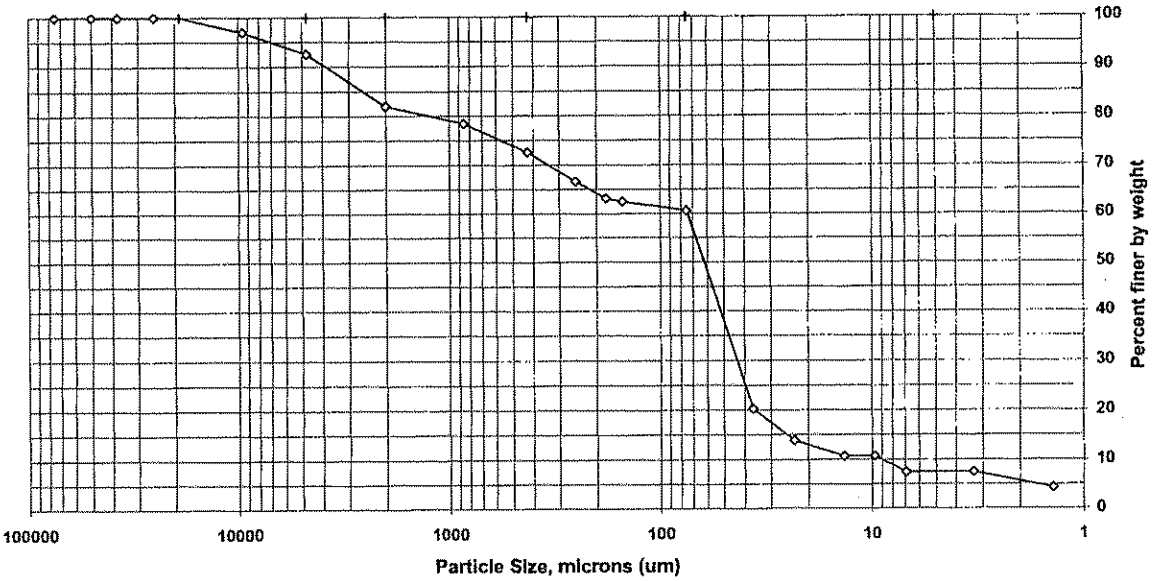
FSL024:07.29.05:0
STL Burlington

680-27062BPS 6/11/2007

# Particle Size of Soils by ASTM D422

| | | | | | |
|---|---|---|---|---|---|
| **Client Code:** | STLGAS | **SDG:** | 68027062 | **Date Received:** | 5/30/2007 |
| **Sample ID:** | 041M480310 | **ETR(s):** | 120187 | **Start Date:** | 5/30/2007 |
| **Lab ID:** | 711743 | | | **End Date:** | 6/9/2007 |

| | | | | |
|---|---|---|---|---|
| **Percent Solids:** | 16.0% | | **Non-soil material:** | plant |
| **Specific Gravity:** | 2.650 | (assumed) | **Shape (> #10):** | n/a |
| **Maximum Particle Size:** | 19 mm | | **Hardness (> #10):** | n/a |




| Sieve size | Particle size, um | Percent finer | Incremental percent |
|---|---|---|---|
| 3 inch | 75000 | 100.0 | 0.0 |
| 2 inch | 50000 | 100.0 | 0.0 |
| 1.5 inch | 37500 | 100.0 | 0.0 |
| 1 inch | 25000 | 100.0 | 0.0 |
| 3/4 inch | 19000 | 100.0 | 0.0 |
| 3/8 inch | 9500 | 97.0 | 3.0 |
| #4 | 4750 | 92.6 | 4.5 |
| #10 | 2000 | 82.0 | 10.6 |
| #20 | 850 | 78.4 | 3.5 |
| #40 | 425 | 72.6 | 5.8 |
| #60 | 250 | 66.6 | 6.0 |
| #80 | 180 | 63.1 | 3.5 |
| #100 | 150 | 62.5 | 0.6 |
| #200 | 75 | 60.6 | 1.9 |
| Hydrometer | 36.4 | 20.3 | 40.3 |
| I | 23.2 | 13.9 | 6.4 |
| I | 13.5 | 10.7 | 3.2 |
| I | 9.7 | 10.7 | 0.0 |
| I | 6.9 | 7.5 | 3.2 |
| I | 3.3 | 7.5 | 0.0 |
| V | 1.4 | 4.3 | 3.2 |

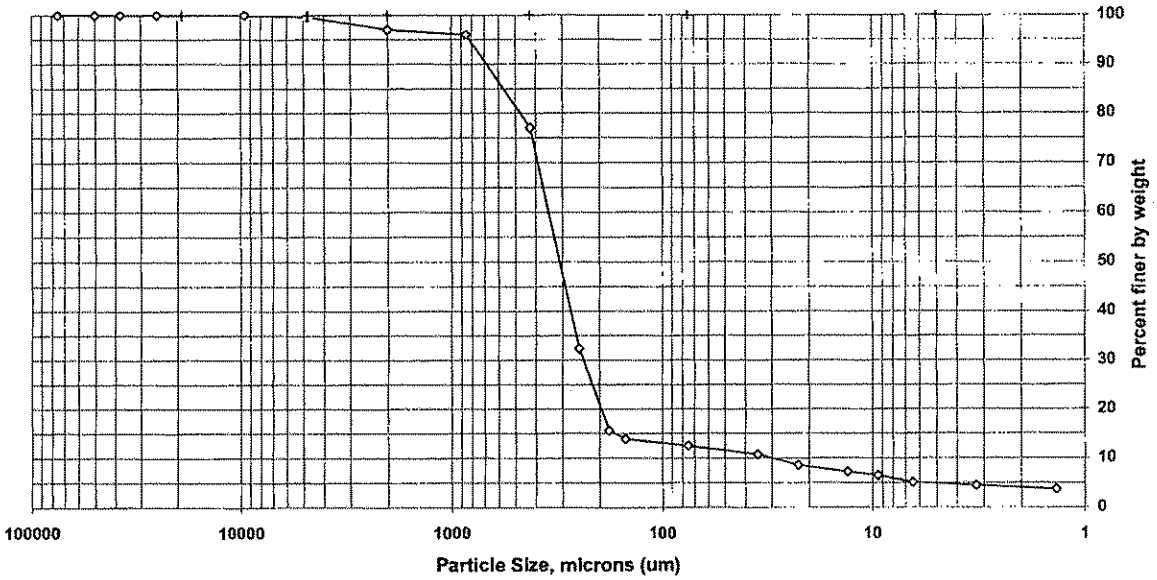
| Soil Classification | Percent of Total Sample |
|---|---|
| Gravel | 7.4 |
| Sand | 32.0 |
| Coarse Sand | 10.6 |
| Medium Sand | 9.4 |
| Fine Sand | 12.0 |
| Silt | 53.1 |
| Clay | 7.5 |

Preparation Method: **D2217**
Dispersion Device: Mechanical mixer with a metal paddle.
Dispersion Period: 1 minute

# Particle Size of Soils by ASTM D422

| | | | | | |
|---|---|---|---|---|---|
| **Client Code:** | STLGAS | **SDG:** | 68027062 | **Date Received:** | 5/30/2007 |
| **Sample ID:** | 041M480510 | **ETR(s):** | 120187 | **Start Date:** | 5/30/2007 |
| **Lab ID:** | 711744 | | | **End Date:** | 6/9/2007 |

| | | | | |
|---|---|---|---|---|
| **Percent Solids:** | 73.4% | | **Non-soil material:** | plant |
| **Specific Gravity:** | 2.650 | (assumed) | **Shape (> #10):** | subangular |
| **Maximum Particle Size:** | 19 mm | | **Hardness (> #10):** | hard |




| Sieve size | Particle size, um | Percent finer | Incremental percent |
|---|---|---|---|
| 3 inch | 75000 | 100.0 | 0.0 |
| 2 inch | 50000 | 100.0 | 0.0 |
| 1.5 inch | 37500 | 100.0 | 0.0 |
| 1 inch | 25000 | 100.0 | 0.0 |
| 3/4 inch | 19000 | 100.0 | 0.0 |
| 3/8 inch | 9500 | 100.0 | 0.0 |
| #4 | 4750 | 99.6 | 0.4 |
| #10 | 2000 | 97.1 | 2.6 |
| #20 | 850 | 96.0 | 1.1 |
| #40 | 425 | 77.0 | 19.0 |
| #60 | 250 | 32.4 | 44.7 |
| #80 | 180 | 15.6 | 16.8 |
| #100 | 150 | 13.9 | 1.7 |
| #200 | 75 | 12.5 | 1.4 |
| Hydrometer | 34.9 | 10.7 | 1.8 |
| \| | 22.4 | 8.6 | 2.1 |
| \| | 13.1 | 7.2 | 1.4 |
| \| | 9.4 | 6.5 | 0.7 |
| \| | 6.5 | 5.1 | 1.4 |
| \| | 3.3 | 4.4 | 0.7 |
| V | 1.4 | 3.7 | 0.7 |

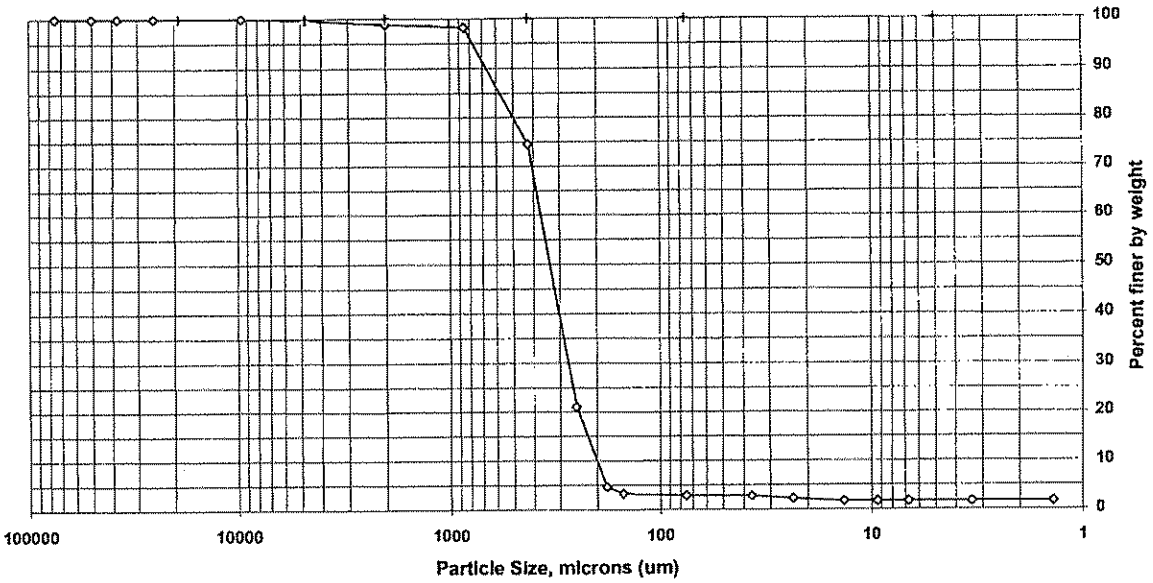
| Soil Classification | Percent of Total Sample |
|---|---|
| Gravel | 0.4 |
| Sand | 87.1 |
| Coarse Sand | 2.6 |
| Medium Sand | 20.0 |
| Fine Sand | 64.6 |
| Silt | 7.4 |
| Clay | 5.1 |

Preparation Method: **D2217**
Dispersion Device: Mechanical mixer with a metal paddle.
Dispersion Period: 1 minute

# Particle Size of Soils by ASTM D422

| | | | | | |
|---|---|---|---|---|---|
| **Client Code:** | STLGAS | **SDG:** | 68027062 | **Date Received:** | 5/30/2007 |
| **Sample ID:** | 041M480410 | **ETR(s):** | 120187 | **Start Date:** | 5/30/2007 |
| **Lab ID:** | 711745 | | | **End Date:** | 6/9/2007 |

| | | | | |
|---|---|---|---|---|
| **Percent Solids:** | 96.9% | | **Non-soil material:** | plant |
| **Specific Gravity:** | 2.650 | (assumed) | **Shape (> #10):** | subangular |
| **Maximum Particle Size:** | 9.5 mm | | **Hardness (> #10):** | hard |




| Sieve size | Particle size, um | Percent finer | Incremental percent |
|---|---|---|---|
| 3 inch | 75000 | 100.0 | 0.0 |
| 2 inch | 50000 | 100.0 | 0.0 |
| 1.5 inch | 37500 | 100.0 | 0.0 |
| 1 inch | 25000 | 100.0 | 0.0 |
| 3/4 inch | 19000 | 100.0 | 0.0 |
| 3/8 inch | 9500 | 100.0 | 0.0 |
| #4 | 4750 | 99.7 | 0.3 |
| #10 | 2000 | 98.8 | 0.9 |
| #20 | 850 | 98.2 | 0.6 |
| #40 | 425 | 74.5 | 23.7 |
| #60 | 250 | 21.0 | 53.5 |
| #80 | 180 | 4.6 | 16.4 |
| #100 | 150 | 3.3 | 1.4 |
| #200 | 75 | 2.9 | 0.4 |
| Hydrometer | 36.6 | 2.7 | 0.1 |
| I | 23.2 | 2.2 | 0.5 |
| I | 13.5 | 1.7 | 0.5 |
| I | 9.4 | 1.7 | 0.0 |
| I | 6.7 | 1.7 | 0.0 |
| I | 3.4 | 1.7 | 0.0 |
| V | 1.4 | 1.7 | 0.0 |

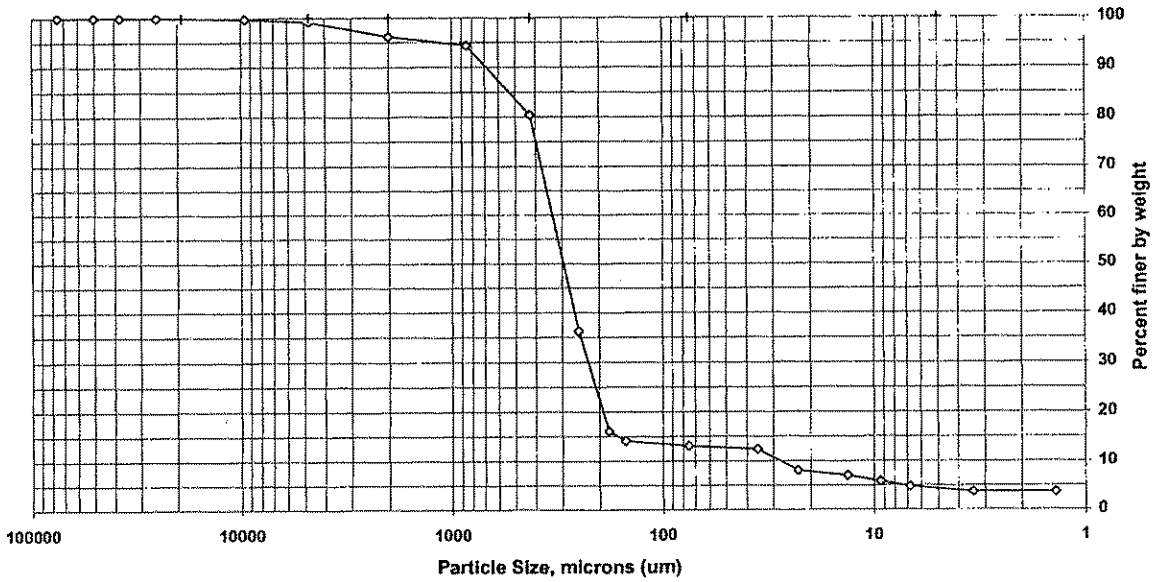
| Soil Classification | Percent of Total Sample |
|---|---|
| Gravel | 0.3 |
| Sand | 96.9 |
| Coarse Sand | 0.9 |
| Medium Sand | 24.3 |
| Fine Sand | 71.7 |
| Silt | 1.2 |
| Clay | 1.7 |

Preparation Method: **D2217**
Dispersion Device: Mechanical mixer with a metal paddle.
Dispersion Period: 1 minute

# Particle Size of Soils by ASTM D422

| | | | | | |
|---|---|---|---|---|---|
| **Client Code:** | STLGAS | **SDG:** | 68027062 | **Date Received:** | 5/30/2007 |
| **Sample ID:** | 041M480610 | **ETR(s):** | 120187 | **Start Date:** | 5/30/2007 |
| **Lab ID:** | 711746 | | | **End Date:** | 6/9/2007 |

| | | | | |
|---|---|---|---|---|
| **Percent Solids:** | 55.1% | | **Non-soil material:** | plant |
| **Specific Gravity:** | 2.650 | (assumed) | **Shape (> #10):** | subangular |
| **Maximum Particle Size:** | 19 mm | | **Hardness (> #10):** | hard |




| Sieve size | Particle size, um | Percent finer | Incremental percent |
|---|---|---|---|
| 3 inch | 75000 | 100.0 | 0.0 |
| 2 inch | 50000 | 100.0 | 0.0 |
| 1.5 inch | 37500 | 100.0 | 0.0 |
| 1 inch | 25000 | 100.0 | 0.0 |
| 3/4 inch | 19000 | 100.0 | 0.0 |
| 3/8 inch | 9500 | 99.7 | 0.3 |
| #4 | 4750 | 99.2 | 0.6 |
| #10 | 2000 | 96.2 | 2.9 |
| #20 | 850 | 94.3 | 1.9 |
| #40 | 425 | 80.4 | 14.0 |
| #60 | 250 | 36.2 | 44.2 |
| #80 | 180 | 16.1 | 20.1 |
| #100 | 150 | 14.1 | 2.0 |
| #200 | 75 | 13.1 | 1.0 |
| Hydrometer | 35.6 | 12.4 | 0.7 |
| I | 22.9 | 8.0 | 4.4 |
| I | 13.3 | 6.9 | 1.1 |
| I | 9.3 | 5.9 | 1.1 |
| I | 6.8 | 4.8 | 1.1 |
| I | 3.4 | 3.7 | 1.1 |
| V | 1.4 | 3.7 | 0.0 |

| Soil Classification | Percent of Total Sample |
|---|---|
| Gravel | 0.8 |
| Sand | 86.1 |
| Coarse Sand | 2.9 |
| Medium Sand | 15.9 |
| Fine Sand | 67.3 |
| Silt | 8.4 |
| Clay | 4.8 |

Preparation Method: **D2217**
Dispersion Device: Mechanical mixer with a metal paddle.
Dispersion Period: 1 minute

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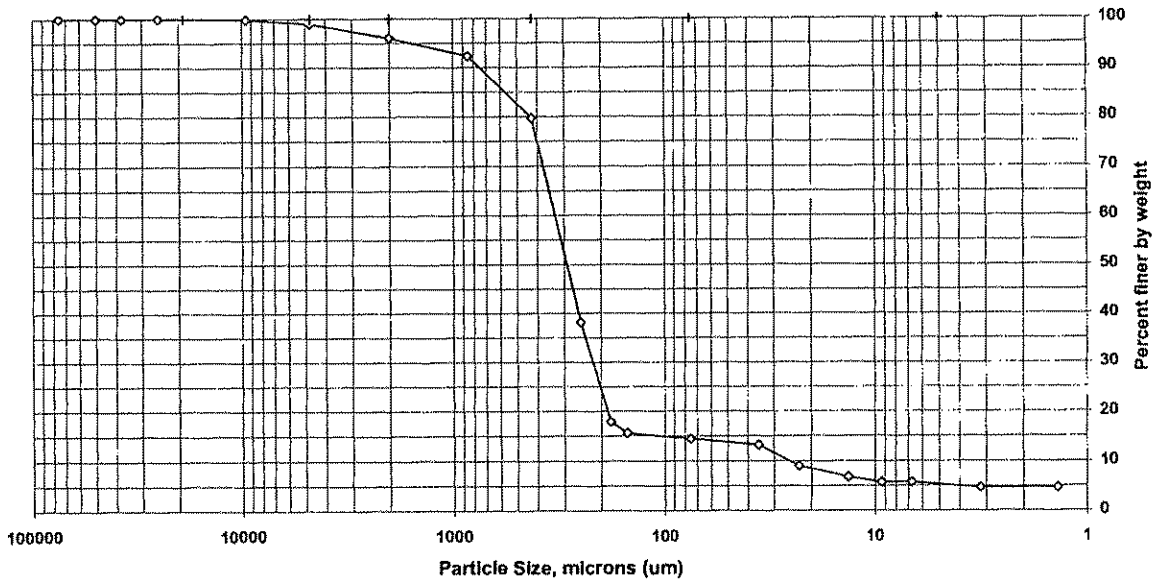
STL Burlington

680-27062BPS 6/11/2007

# Particle Size of Soils by ASTM D422

| | | | | | |
|---|---|---|---|---|---|
| **Client Code:** | STLGAS | **SDG:** | 68027062 | **Date Received:** | 5/30/2007 |
| **Sample ID:** | 041M480710 | **ETR(s):** | 120187 | **Start Date:** | 5/30/2007 |
| **Lab ID:** | 711747 | | | **End Date:** | 6/9/2007 |

| | | | | |
|---|---|---|---|---|
| **Percent Solids:** | 55.5% | | **Non-soil material:** | plant |
| **Specific Gravity:** | 2.650 | (assumed) | **Shape (> #10):** | n/a |
| **Maximum Particle Size:** | 19 mm | | **Hardness (> #10):** | n/a |




| Sieve size | Particle size, um | Percent finer | Incremental percent |
|---|---|---|---|
| 3 inch | 75000 | 100.0 | 0.0 |
| 2 inch | 50000 | 100.0 | 0.0 |
| 1.5 inch | 37500 | 100.0 | 0.0 |
| 1 inch | 25000 | 100.0 | 0.0 |
| 3/4 inch | 19000 | 100.0 | 0.0 |
| 3/8 inch | 9500 | 99.8 | 0.2 |
| #4 | 4750 | 99.0 | 0.8 |
| #10 | 2000 | 96.1 | 2.9 |
| #20 | 850 | 92.3 | 3.7 |
| #40 | 425 | 79.7 | 12.6 |
| #60 | 250 | 38.1 | 41.6 |
| #80 | 180 | 17.9 | 20.3 |
| #100 | 150 | 15.6 | 2.2 |
| #200 | 75 | 14.4 | 1.2 |
| Hydrometer | 35.4 | 13.2 | 1.2 |
| I | 22.8 | 8.9 | 4.3 |
| I | 13.3 | 6.8 | 2.1 |
| I | 9.3 | 5.7 | 1.1 |
| I | 6.7 | 5.7 | 0.0 |
| I | 3.2 | 4.6 | 1.1 |
| V | 1.4 | 4.6 | 0.0 |

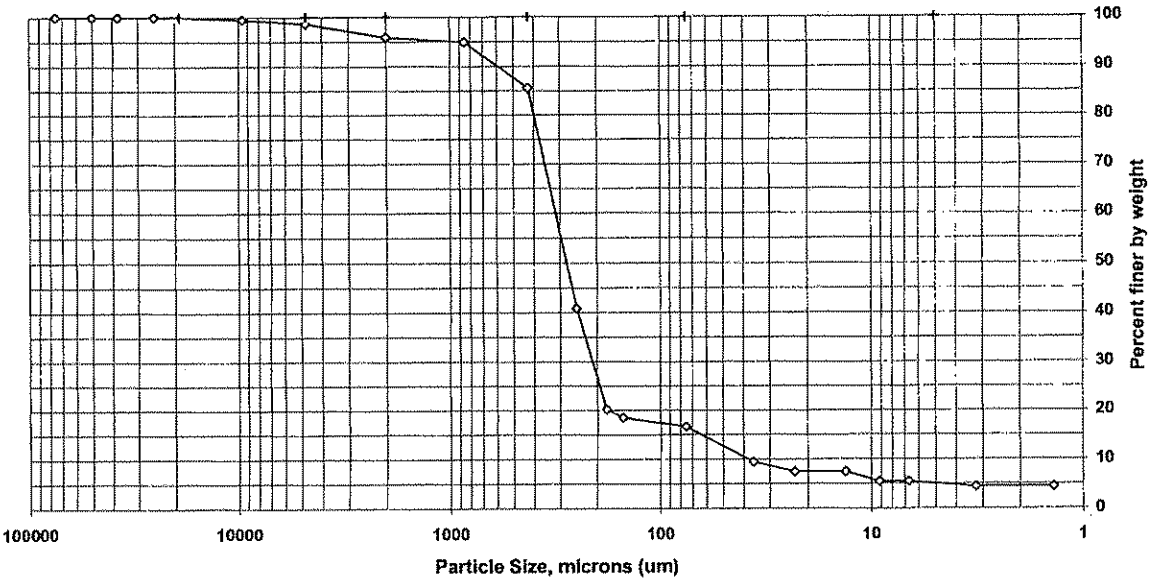
| Soil Classification | Percent of Total Sample |
|---|---|
| Gravel | 1.0 |
| Sand | 84.5 |
| Coarse Sand | 2.9 |
| Medium Sand | 16.4 |
| Fine Sand | 65.3 |
| Silt | 8.7 |
| Clay | 5.7 |

Preparation Method: **D2217**
Dispersion Device: Mechanical mixer with a metal paddle.
Dispersion Period: 1 minute

# Particle Size of Soils by ASTM D422

| | | | | | |
|---|---|---|---|---|---|
| **Client Code:** | STLGAS | **SDG:** | 68027062 | **Date Received:** | 5/30/2007 |
| **Sample ID:** | 041M100710 | **ETR(s):** | 120187 | **Start Date:** | 5/30/2007 |
| **Lab ID:** | 711748 | | | **End Date:** | 6/9/2007 |

| | | | | |
|---|---|---|---|---|
| **Percent Solids:** | 42.4% | | **Non-soil material:** | plant |
| **Specific Gravity:** | 2.650 | (assumed) | **Shape (> #10):** | n/a |
| **Maximum Particle Size:** | 19 mm | | **Hardness (> #10):** | n/a |




| Sieve size | Particle size, um | Percent finer | Incremental percent |
|---|---|---|---|
| 3 inch | 75000 | 100.0 | 0.0 |
| 2 inch | 50000 | 100.0 | 0.0 |
| 1.5 inch | 37500 | 100.0 | 0.0 |
| 1 inch | 25000 | 100.0 | 0.0 |
| 3/4 inch | 19000 | 100.0 | 0.0 |
| 3/8 inch | 9500 | 99.5 | 0.5 |
| #4 | 4750 | 98.6 | 0.9 |
| #10 | 2000 | 95.9 | 2.7 |
| #20 | 850 | 94.9 | 1.0 |
| #40 | 425 | 85.6 | 9.3 |
| #60 | 250 | 40.8 | 44.8 |
| #80 | 180 | 20.2 | 20.6 |
| #100 | 150 | 18.5 | 1.7 |
| #200 | 75 | 16.6 | 1.8 |
| Hydrometer | 35.9 | 9.5 | 7.2 |
| I | 22.9 | 7.4 | 2.0 |
| I | 13.2 | 7.4 | 0.0 |
| I | 9.1 | 5.4 | 2.0 |
| I | 6.7 | 5.4 | 0.0 |
| I | 3.2 | 4.4 | 1.0 |
| V | 1.4 | 4.4 | 0.0 |

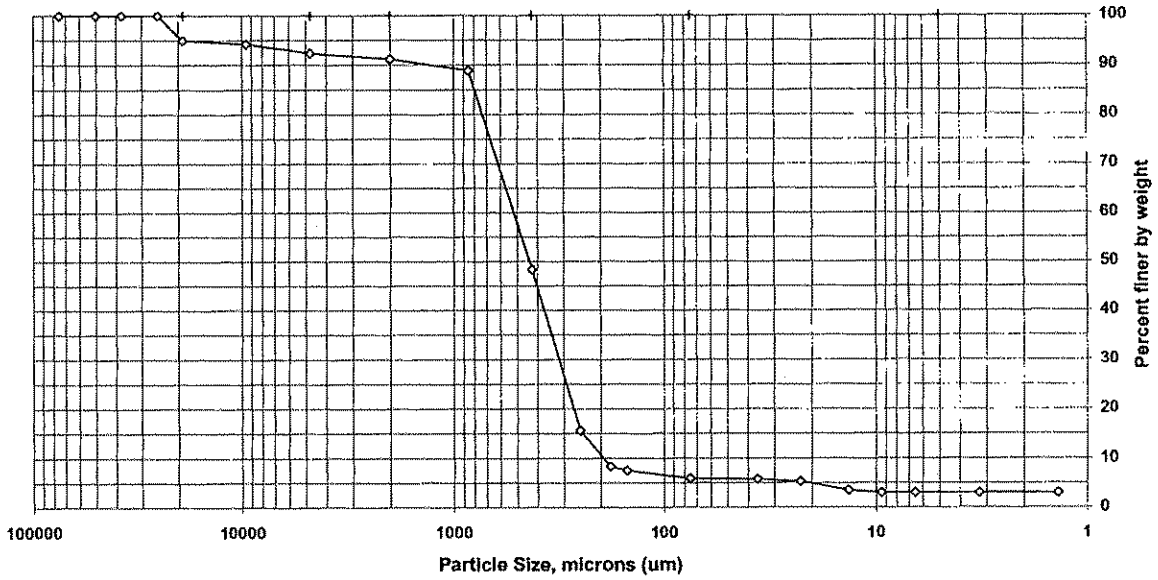
| Soil Classification | Percent of Total Sample |
|---|---|
| Gravel | 1.4 |
| Sand | 82.0 |
| Coarse Sand | 2.7 |
| Medium Sand | 10.3 |
| Fine Sand | 69.0 |
| Silt | 11.2 |
| Clay | 5.4 |

Preparation Method: **D2217**
Dispersion Device: Mechanical mixer with a metal paddle.
Dispersion Period: 1 minute

# Particle Size of Soils by ASTM D422

| | | | | | |
|---|---|---|---|---|---|
| **Client Code:** | STLGAS | **SDG:** | 68027062 | **Date Received:** | 5/30/2007 |
| **Sample ID:** | 041M100810 | **ETR(s):** | 120187 | **Start Date:** | 5/30/2007 |
| **Lab ID:** | 711749 | | | **End Date:** | 6/9/2007 |

| | | | | |
|---|---|---|---|---|
| **Percent Solids:** | 76.4% | | **Non-soil material:** | plant, shell |
| **Specific Gravity:** | 2.650 | (assumed) | **Shape (> #10):** | subrounded |
| **Maximum Particle Size:** | 25 mm | | **Hardness (> #10):** | hard |




| Sieve size | Particle size, um | Percent finer | Incremental percent |
|---|---|---|---|
| 3 inch | 75000 | 100.0 | 0.0 |
| 2 inch | 50000 | 100.0 | 0.0 |
| 1.5 inch | 37500 | 100.0 | 0.0 |
| 1 inch | 25000 | 100.0 | 0.0 |
| 3/4 inch | 19000 | 95.0 | 5.0 |
| 3/8 inch | 9500 | 94.2 | 0.7 |
| #4 | 4750 | 92.4 | 1.8 |
| #10 | 2000 | 91.2 | 1.2 |
| #20 | 850 | 88.8 | 2.3 |
| #40 | 425 | 48.4 | 40.5 |
| #60 | 250 | 15.6 | 32.8 |
| #80 | 180 | 8.4 | 7.2 |
| #100 | 150 | 7.5 | 0.9 |
| #200 | 75 | 5.9 | 1.6 |
| Hydrometer | 36.0 | 5.8 | 0.1 |
| I | 22.7 | 5.3 | 0.5 |
| I | 13.4 | 3.5 | 1.8 |
| I | 9.4 | 3.0 | 0.5 |
| I | 6.5 | 3.0 | 0.0 |
| I | 3.3 | 3.0 | 0.0 |
| V | 1.4 | 3.0 | 0.0 |

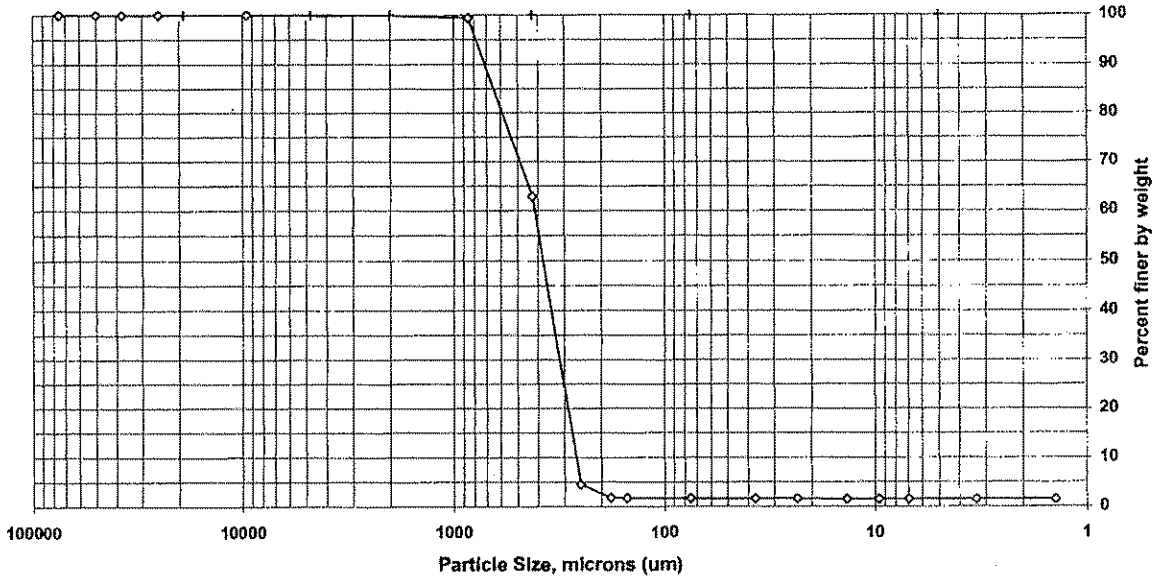
| Soil Classification | Percent of Total Sample |
|---|---|
| Gravel | 7.6 |
| Sand | 86.5 |
| Coarse Sand | 1.2 |
| Medium Sand | 42.8 |
| Fine Sand | 42.4 |
| Silt | 2.9 |
| Clay | 3.0 |

Preparation Method: **D2217**
Dispersion Device: Mechanical mixer with a metal paddle.
Dispersion Period: 1 minute

# Particle Size of Soils by ASTM D422

| | | | | | |
|---|---|---|---|---|---|
| **Client Code:** | STLGAS | **SDG:** | 68027062 | **Date Received:** | 5/30/2007 |
| **Sample ID:** | 041M00910 | **ETR(s):** | 120187 | **Start Date:** | 5/30/2007 |
| **Lab ID:** | 711750 | | | **End Date:** | 6/9/2007 |

| | | | | |
|---|---|---|---|---|
| **Percent Solids:** | 91.6% | | **Non-soil material:** | plant, shell |
| **Specific Gravity:** | 2.650 | (assumed) | **Shape (> #10):** | n/a |
| **Maximum Particle Size:** | 9.5 mm | | **Hardness (> #10):** | n/a |




| Sieve size | Particle size, um | Percent finer | Incremental percent |
|---|---|---|---|
| 3 inch | 75000 | 100.0 | 0.0 |
| 2 inch | 50000 | 100.0 | 0.0 |
| 1.5 inch | 37500 | 100.0 | 0.0 |
| 1 inch | 25000 | 100.0 | 0.0 |
| 3/4 inch | 19000 | 100.0 | 0.0 |
| 3/8 inch | 9500 | 100.0 | 0.0 |
| #4 | 4750 | 99.9 | 0.1 |
| #10 | 2000 | 99.9 | 0.1 |
| #20 | 850 | 99.4 | 0.5 |
| #40 | 425 | 62.9 | 36.5 |
| #60 | 250 | 4.5 | 58.4 |
| #80 | 180 | 1.8 | 2.7 |
| #100 | 150 | 1.7 | 0.1 |
| #200 | 75 | 1.7 | 0.0 |
| Hydrometer | 36.9 | 1.6 | 0.1 |
| I | 23.3 | 1.6 | 0.0 |
| I | 13.6 | 1.5 | 0.1 |
| I | 9.6 | 1.5 | 0.0 |
| I | 7.0 | 1.5 | 0.0 |
| I | 3.3 | 1.5 | 0.0 |
| V | 1.4 | 1.5 | 0.0 |

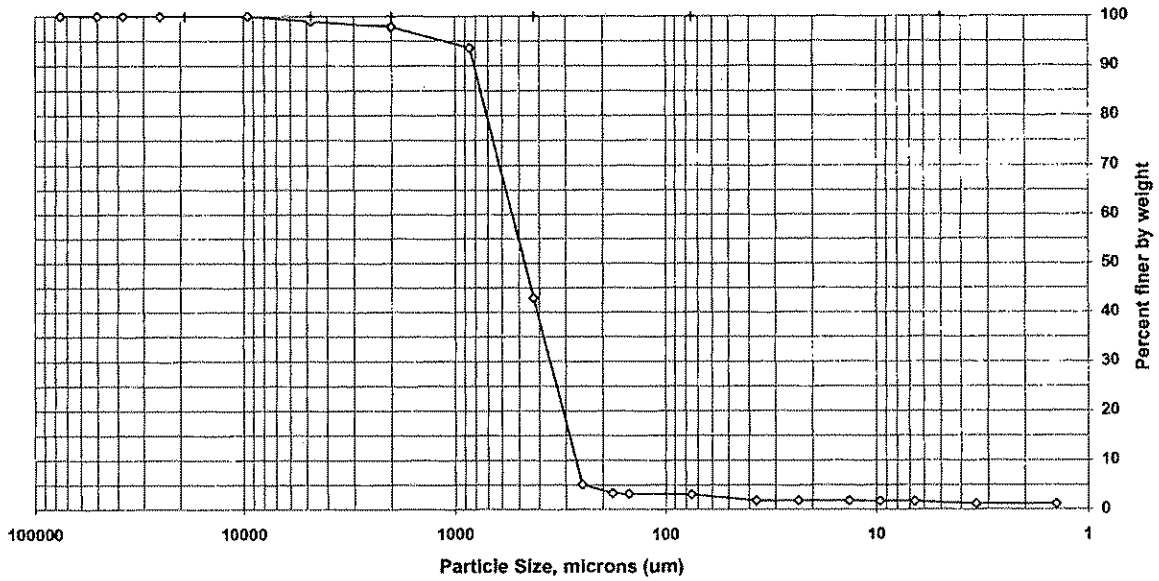
| Soil Classification | Percent of Total Sample |
|---|---|
| Gravel | 0.1 |
| Sand | 98.2 |
| Coarse Sand | 0.1 |
| Medium Sand | 37.0 |
| Fine Sand | 61.2 |
| Silt | 0.2 |
| Clay | 1.5 |

Preparation Method: **D2217**
Dispersion Device: Mechanical mixer with a metal paddle.
Dispersion Period: 1 minute

# Particle Size of Soils by ASTM D422

| | | | | | |
|---|---|---|---|---|---|
| **Client Code:** | STLGAS | **SDG:** | 68027062 | **Date Received:** | 5/30/2007 |
| **Sample ID:** | 041M101010 | **ETR(s):** | 120187 | **Start Date:** | 5/30/2007 |
| **Lab ID:** | 711751 | | | **End Date:** | 6/9/2007 |

| | | | | |
|---|---|---|---|---|
| **Percent Solids:** | 78.5% | | **Non-soil material:** | shell, plant |
| **Specific Gravity:** | 2.650 | (assumed) | **Shape (> #10):** | n/a |
| **Maximum Particle Size:** | 9.5 mm | | **Hardness (> #10):** | n/a |




| Sieve size | Particle size, um | Percent finer | Incremental percent |
|---|---|---|---|
| 3 inch | 75000 | 100.0 | 0.0 |
| 2 inch | 50000 | 100.0 | 0.0 |
| 1.5 inch | 37500 | 100.0 | 0.0 |
| 1 inch | 25000 | 100.0 | 0.0 |
| 3/4 inch | 19000 | 100.0 | 0.0 |
| 3/8 inch | 9500 | 100.0 | 0.0 |
| #4 | 4750 | 99.0 | 1.0 |
| #10 | 2000 | 97.9 | 1.1 |
| #20 | 850 | 93.6 | 4.3 |
| #40 | 425 | 42.9 | 50.7 |
| #60 | 250 | 5.1 | 37.8 |
| #80 | 180 | 3.3 | 1.8 |
| #100 | 150 | 3.2 | 0.1 |
| #200 | 75 | 3.1 | 0.1 |
| Hydrometer | 36.9 | 1.8 | 1.3 |
| I | 23.3 | 1.8 | 0.0 |
| I | 13.5 | 1.8 | 0.0 |
| I | 9.6 | 1.7 | 0.1 |
| I | 6.6 | 1.7 | 0.0 |
| I | 3.4 | 1.2 | 0.5 |
| V | 1.4 | 1.2 | 0.0 |

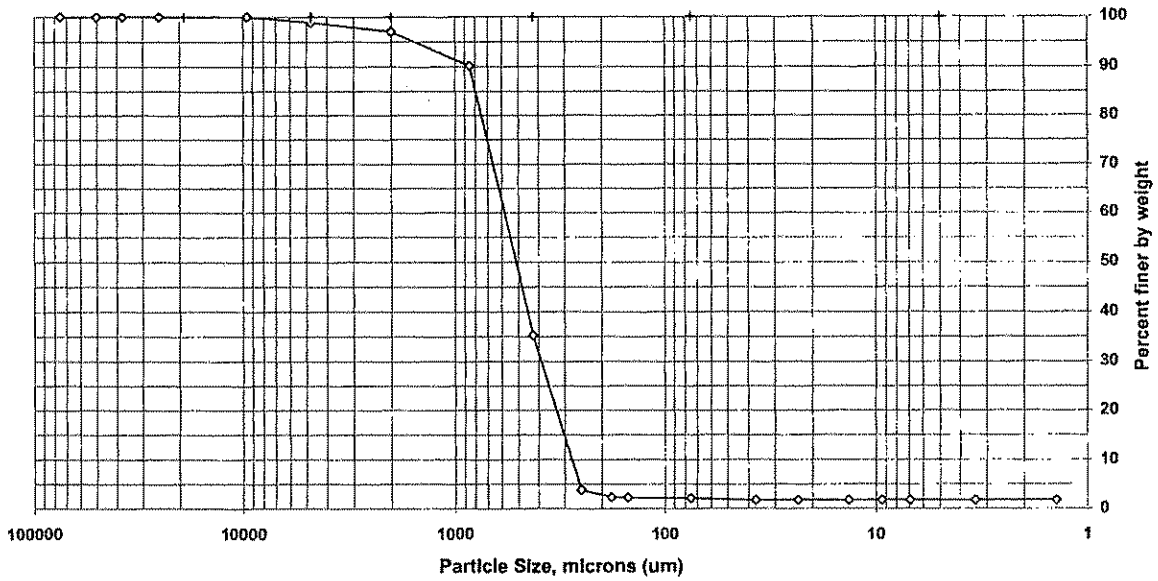
| Soil Classification | Percent of Total Sample |
|---|---|
| Gravel | 1.0 |
| Sand | 95.9 |
| Coarse Sand | 1.1 |
| Medium Sand | 55.0 |
| Fine Sand | 39.8 |
| Silt | 1.4 |
| Clay | 1.7 |

Preparation Method: D2217
Dispersion Device: Mechanical mixer with a metal paddle.
Dispersion Period: 1 minute

# Particle Size of Soils by ASTM D422

| | | | | | |
|---|---|---|---|---|---|
| **Client Code:** | STLGAS | **SDG:** | 68027062 | **Date Received:** | 5/30/2007 |
| **Sample ID:** | 041N01010 | **ETR(s):** | 120187 | **Start Date:** | 5/30/2007 |
| **Lab ID:** | 711752 | | | **End Date:** | 6/9/2007 |

| | | | | |
|---|---|---|---|---|
| **Percent Solids:** | 84.4% | | **Non-soil material:** | shell, plant |
| **Specific Gravity:** | 2.650 | (assumed) | **Shape (> #10):** | n/a |
| **Maximum Particle Size:** | 9.5 mm | | **Hardness (> #10):** | n/a |




| Sieve size | Particle size, um | Percent finer | Incremental percent |
|---|---|---|---|
| 3 inch | 75000 | 100.0 | 0.0 |
| 2 inch | 50000 | 100.0 | 0.0 |
| 1.5 inch | 37500 | 100.0 | 0.0 |
| 1 inch | 25000 | 100.0 | 0.0 |
| 3/4 inch | 19000 | 100.0 | 0.0 |
| 3/8 inch | 9500 | 100.0 | 0.0 |
| #4 | 4750 | 98.9 | 1.1 |
| #10 | 2000 | 97.0 | 1.8 |
| #20 | 850 | 90.1 | 6.9 |
| #40 | 425 | 35.3 | 54.8 |
| #60 | 250 | 3.8 | 31.5 |
| #80 | 180 | 2.3 | 1.5 |
| #100 | 150 | 2.2 | 0.1 |
| #200 | 75 | 2.1 | 0.1 |
| Hydrometer | 36.9 | 1.7 | 0.4 |
| \| | 23.3 | 1.7 | 0.0 |
| \| | 13.5 | 1.7 | 0.0 |
| \| | 9.4 | 1.7 | 0.0 |
| \| | 6.9 | 1.7 | 0.0 |
| \| | 3.4 | 1.7 | 0.0 |
| V | 1.4 | 1.7 | 0.0 |

| Soil Classification | Percent of Total Sample |
|---|---|
| Gravel | 1.1 |
| Sand | 96.8 |
| Coarse Sand | 1.8 |
| Medium Sand | 61.7 |
| Fine Sand | 33.2 |
| Silt | 0.4 |
| Clay | 1.7 |

Preparation Method: **D2217**
Dispersion Device: Mechanical mixer with a metal paddle.
Dispersion Period: 1 minute

**Particle Size Analysis of Soils**
**By ASTM D422**
**Hydrometer Data**

Set Number: 68027062

**Client Code:** STLGAS
**SDG:** 68027062
**ETR(s):** 120187

**Date Received:** 30-May-07
**Start Date:** 30-May-07
**End Date:** 4-Jun-07

**Date and Analyst**

| Percent Solids | Weighed | Mixed | Hydrometer | Large sieves | Small sieves |
|---|---|---|---|---|---|
| MAP 05/829/07 | MAP 05/29/07 | MAP 05/30/07 | MAP 05/31/07 | MAP 05/30/07 | MAP 6/1/07 |
| DJP 05/30/07 | | | DPS 6/1/07 | DPS 05/31/07 | DJP 6/4/07 |

| Test number | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lab number | | | | | | | | | | **711738** | **711739** | **711740** |
| Time, min. (2) | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Reading | | | | | | | | | | 1.0045 | 1.0050 | 1.0060 |
| Temperature, C | | | | | | | | | | 21.0 | 20.5 | 20.5 |
| Time, min. (5) | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Reading | | | | | | | | | | 1.0045 | 1.0050 | 1.0055 |
| Temperature, C | | | | | | | | | | 21.0 | 20.5 | 20.5 |
| Time, min. (15) | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 |
| Reading | | | | | | | | | | 1.0045 | 1.0045 | 1.0055 |
| Temperature, C | | | | | | | | | | 21.0 | 20.5 | 20.5 |
| Time, min. (30) | 30 | 30 | 29 | 29 | 31 | 31 | 31 | 32 | 30 | 30 | 30 | 31 |
| Reading | | | | | | | | | | 1.0040 | 1.0045 | 1.0055 |
| Temperature, C | | | | | | | | | | 20.5 | 20.5 | 20.5 |
| Time, min. (60) | 59 | 58 | 58 | 63 | 60 | 59 | 59 | 60 | 63 | 57 | 63 | 57 |
| Reading | | | | | | | | | | 1.0040 | 1.0045 | 1.0045 |
| Temperature, C | | | | | | | | | | 20.5 | 20.5 | 20.5 |
| Time, min. (250) | 256 | 256 | 250 | 250 | 240 | 234 | 265 | 259 | 253 | 247 | 241 | 235 |
| Reading | | | | | | | | | | 1.0040 | 1.0045 | 1.0040 |
| Temperature, C | | | | | | | | | | 20.5 | 20.5 | 20.5 |
| Time, min. (1440) | 1440 | 1440 | 1434 | 1434 | 1424 | 1418 | 1412 | 1406 | 1400 | 1394 | 1388 | 1382 |
| Reading | | | | | | | | | | 1.0040 | 1.0045 | 1.0040 |
| Temperature, C | | | | | | | | | | 20.5 | 20.5 | 20.5 |

**Hydrometer used:** 192933 **Model #:** ASTM 151H **Manufacturer:** HB Instrument **Hydrometer start time:** 10:21

**Calibrations:**

| L temp, C | L read | H Temp, C | H read |
|---|---|---|---|
| 17.0 | 1.0040 | 23.0 | 1.0030 |

**Cal. Date:** 10/19/06 **Hydrometer data entered:** DJP 6/1/07



FSL024:07.29.05:0
STL Burlington

680-27062PS 6/11/2007

**Particle Size Analysis of Soils**
**By ASTM D422**
**Hydrometer Data**

Set Number: **68027062B**

**Client Code:** STLGAS
**SDG:** 68027062
**ETR(s):** 120187

**Date Received:** 30-May-07
**Start Date:** 30-May-07
**End Date:** 9-Jun-07

**Date and Analyst**

| Percent Solids | Weighed | Mixed | Hydrometer | Large sieves | Small sieves |
|---|---|---|---|---|---|
| MAP 06/01/07 | MAP 06/01/07 | MAP 06/04/07 | MAP 06/06/07 | MAP 06/04/07 | DPS 06/07/07 |
| DJP 06/04/07 | | | DPS 06/07/07 | DPS 06/05/07 | DPS 06/09/07 |

| Test number | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lab number | **711741** | **711742** | **711743** | **711744** | **711745** | **711746** | **711747** | **711748** | **711749** | **711750** | **711751** | **711752** |
| Time, min. (2) | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Reading | 1.0065 | 1.0055 | 1.0065 | 1.0110 | 1.0060 | 1.0090 | 1.0095 | 1.0080 | 1.0085 | 1.0050 | 1.0050 | 1.0050 |
| Temperature, C | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 20.5 | 21.0 | 21.0 | 21.0 |
| Time, min. (5) | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Reading | 1.0055 | 1.0055 | 1.0055 | 1.0095 | 1.0055 | 1.0070 | 1.0075 | 1.0070 | 1.0080 | 1.0050 | 1.0050 | 1.0050 |
| Temperature, C | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 |
| Time, min. (15) | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 |
| Reading | 1.0050 | 1.0055 | 1.0050 | 1.0085 | 1.0050 | 1.0065 | 1.0065 | 1.0070 | 1.0065 | 1.0050 | 1.0050 | 1.0050 |
| Temperature, C | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 20.5 | 20.5 | 21.0 | 21.0 |
| Time, min. (30) | 30 | 30 | 29 | 29 | 31 | 31 | 31 | 32 | 30 | 30 | 30 | 31 |
| Reading | 1.0050 | 1.0050 | 1.0050 | 1.0080 | 1.0050 | 1.0060 | 1.0060 | 1.0060 | 1.0060 | 1.0050 | 1.0050 | 1.0050 |
| Temperature, C | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 20.5 | 20.5 | 21.0 |
| Time, min. (60) | 59 | 58 | 58 | 63 | 60 | 59 | 59 | 60 | 63 | 57 | 63 | 57 |
| Reading | 1.0045 | 1.0050 | 1.0045 | 1.0070 | 1.0050 | 1.0055 | 1.0060 | 1.0060 | 1.0060 | 1.0050 | 1.0050 | 1.0050 |
| Temperature, C | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 20.5 | 20.5 | 21.0 |
| Time, min. (250) | 256 | 256 | 250 | 250 | 240 | 234 | 265 | 259 | 253 | 247 | 241 | 235 |
| Reading | 1.0045 | 1.0050 | 1.0045 | 1.0065 | 1.0050 | 1.0050 | 1.0055 | 1.0055 | 1.0060 | 1.0050 | 1.0045 | 1.0050 |
| Temperature, C | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 20.5 | 20.5 | 21.0 |
| Time, min. (1440) | 1440 | 1440 | 1434 | 1434 | 1424 | 1418 | 1412 | 1406 | 1400 | 1394 | 1388 | 1382 |
| Reading | 1.0045 | 1.0050 | 1.0040 | 1.0060 | 1.0050 | 1.0050 | 1.0055 | 1.0055 | 1.0060 | 1.0050 | 1.0045 | 1.0050 |
| Temperature, C | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 20.5 | 20.5 | 21.0 |

**Hydrometer used:** 192933 **Model #:** ASTM 151H **Manufacturer:** HB Instrument **Hydrometer start time:** 14:39

**Calibrations:**

| L temp, C | L read | H Temp, C | H read |
|---|---|---|---|
| 17.0 | 1.0040 | 23.0 | 1.0030 |

**Cal. Date:** 10/19/06 **Hydrometer data entered:** DPS 06/07/07



FSL024:07.29.05:0
STL Burlington

680-27062BPS 6/11/2007

**Particle Size Analysis of Soils**
**By ASTM D422**
**Hydrometer Data**

Set Number: 68027062

**Client Code:** STLGAS
**SDG:** 68027062
**ETR(s):** 120187

**Date Received:** 30-May-07
**Start Date:** 30-May-07
**End Date:** 6-4-07

**Date and Analyst**

| Percent Solids | Weighed | Mixed | Hydrometer | Large sieves | Small sieves |
|---|---|---|---|---|---|
| MAP 5-30-07 | MAP 5-30-07 | MAP 5-30-07 | MAP 5-31-07 | MAP 5-30-07 | MAP 6-1-07 |
| DJP 5-31-07 | | | DPJ 6-1-07 | DJS 5/31/07 | DJP 6-4-07 |

| Test number | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lab number | | | | | | | | | | 711738 | 711739 | 711740 |
| Time, min. (2) | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Reading | | | | | | | | | | 1.0045 | 1.0050 | 1.0060 |
| Temperature, C | | | | | | | | | | 21.0 | 20.5 | 20.5 |
| Time, min. (5) | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Reading | | | | | | | | | | 1.0045 | 1.0050 | 1.0055 |
| Temperature, C | | | | | | | | | | 21.0 | 20.5 | 20.5 |
| Time, min. (15) | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 |
| Reading | | | | | | | | | | 1.0045 | 1.0045 | 1.0055 |
| Temperature, C | | | | | | | | | | 21.0 | 20.5 | 20.5 |
| Time, min. (30) | 30 | 30 | 29 | 29 | 31 | 31 | 31 | 32 | 30 | 30 | 30 | 31 |
| Reading | | | | | | | | | | 1.0040 | 1.0045 | 1.0055 |
| Temperature, C | | | | | | | | | | 20.5 | 20.5 | 20.5 |
| Time, min. (60) | 59 | 58 | 58 | 63 | 60 | 59 | 59 | 60 | 63 | 57 | 63 | 57 |
| Reading | | | | | | | | | | 1.0040 | 1.0045 | 1.0045 |
| Temperature, C | | | | | | | | | | 20.5 | 20.5 | 20.5 |
| Time, min. (250) | 256 | 256 | 250 | 250 | 240 | 234 | 265 | 259 | 253 | 247 | 241 | 235 |
| Reading | | | | | | | | | | 1.0040 | 1.0045 | 1.0040 |
| Temperature, C | | | | | | | | | | 20.5 | 20.5 | 20.5 |
| Time, min. (1440) | 1440 | 1440 | 1434 | 1434 | 1424 | 1418 | 1412 | 1406 | 1400 | 1394 | 1388 | 1382 |
| Reading | | | | | | | | | | 1.0040 | 1.0045 | 1.0040 |
| Temperature, C | | | | | | | | | | ~~20.0~~ 20.5 | 20.5 | 20.5 |

**Hydrometer used:** 192933 **Model #:** ASTM 151H **Manufacturer:** **Hydrometer start time:** 1021

**Calibrations:**

| L temp, C | L read | H Temp, C | H read |
|---|---|---|---|
| 17.0 | | 23.0 | |

**Cal. Date:** **Hydrometer data entered:** DJP 6-1-07

FSL024:07.29.05:0
STL Burlington

680-27062PS 05/30/07

**Particle Size Analysis of Soils**
**By ASTM D422**
**Hydrometer Data**

Set Number: 68027062B

**Client Code:** STLGAS
**SDG:** 68027062
**ETR(s):** 120187

**Date Received:** 30-May-07
**Start Date:** 30-May-07
**End Date:** 06/09/07

**Date and Analyst**

| Percent Solids | Weighed | Mixed | Hydrometer | Large sieves | Small sieves |
|---|---|---|---|---|---|
| MP 6-1-07 DJP 6-4-07 | MP 6-1-07 | MP 6-4-07 | MP 6-6-07 DPS 06/07/07 | MP 6-5-07 DPS 06/05/07 | DPS 06/07/07 DPS 06/09/07 |

| Test number | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lab number | 711741 | 711742 | 711743 | 711744 | 711745 | 711746 | 711747 | 711748 | 711749 | 711750 | 711751 | 711752 |
| Time, min. (2) | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Reading | 1.0065 | 1.0055 | 1.0065 | 1.0110 | 1.0060 | 1.0090 | 1.0095 | 1.0080 | 1.0085 | 1.0050 | 1.0050 | 1.0050 |
| Temperature, C | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 20.5 | 21.0 | 21.0 | 21.0 |
| Time, min. (5) | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Reading | 1.0055 | 1.0055 | 1.0055 | 1.0095 | 1.0055 | 1.0070 | 1.0075 | 1.0070 | 1.0080 | 1.0050 | 1.0050 | 1.0050 |
| Temperature, C | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 |
| Time, min. (15) | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 |
| Reading | 1.0050 | 1.0055 | 1.0050 | 1.0085 | 1.0050 | 1.0065 | 1.0065 | 1.0070 | 1.0065 | 1.0050 | 1.0050 | 1.0050 |
| Temperature, C | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 20.5 | 20.5 | 21.0 | 21.0 |
| Time, min. (30) | 30 | 30 | 29 | 29 | 31 | 31 | 31 | 32 | 30 | 30 | 30 | 31 |
| Reading | 1.0050 | 1.0050 | 1.0050 | 1.0080 | 1.0050 | 1.0060 | 1.0060 | 1.0060 | 1.0060 | 1.0050 | 1.0050 | 1.0050 |
| Temperature, C | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 20.5 | 20.5 | 21.0 |
| Time, min. (60) | 59 | 58 | 58 | 63 | 60 | 59 | 59 | 60 | 63 | 57 | 63 | 57 |
| Reading | 1.0045 | 1.0050 | 1.0045 | 1.0070 | 1.0050 | 1.0055 | 1.0060 | 1.0060 | 1.0060 | 1.0050 | 1.0050 | 1.0050 |
| Temperature, C | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 20.5 | 20.5 | 21.0 |
| Time, min. (250) | 256 | 256 | 250 | 250 | 240 | 234 | 265 | 259 | 253 | 247 | 241 | 235 |
| Reading | 1.0045 | 1.0050 | 1.0045 | 1.0065 | 1.0050 | 1.0050 | 1.0055 | 1.0055 | 1.0060 | 1.0050 | 1.0045 | 1.0050 |
| Temperature, C | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 20.5 | 20.5 | 21.0 |
| Time, min. (1440) | 1440 | 1440 | 1434 | 1434 | 1424 | 1418 | 1412 | 1406 | 1400 | 1394 | 1388 | 1382 |
| Reading | 1.0045 | 1.0050 | 1.0040 | 1.0060 | 1.0050 | 1.0050 | 1.0055 | 1.0055 | 1.0060 | 1.0050 | 1.0045 | 1.0050 |
| Temperature, C | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 20.5 | 20.5 | 20.5 |

**Hydrometer used:** 192933 **Model #:** ASTM 151H **Manufacturer:** **Hydrometer start time:** 1439

**Calibrations:**

| L temp, C | L read | H Temp, C | H read |
|---|---|---|---|
| 17.0 | | 23.0 | |

**Cal. Date:** **Hydrometer data entered:**

FSL024:07.29.05:0
STL Burlington

680-27062BPS 05/30/07

## Particle Size Analysis of Soils By ASTM D422

**Sieve Data**

Client Code: STLGAS ETR(s): 120187 SDG: 68027062 Date Rec: 30-May-07 Start Date: 30-May-07 End Date: 4-Jun-07

SET: 68027062

| Test | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Laboratory No | | | | | | | | | | 711738 | 711739 | 711740 |
| Sample ID | | | | | | | | | | 041M480110 | 041N480110 | 041M480910 |
| **Sample Prep** | | | | | | | | | | D2217 | D2217 | D2217 |
| Pan, g | | | | | | | | | | | | |
| Pan/sample, g | | | | | | | | | | 170.78 | 188.00 | 83.16 |
| Pan/dry sample, g | | | | | | | | | | | | |
| **Hygroscopic Moisture correction factor (HMCF) for dry prep / Percent Solids for dry and wet prep** | | | | | | | | | | | | |
| Pan, g | | | | | | | | | | 1.01 | 1.03 | 1.04 |
| Pan/sample, g | | | | | | | | | | 23.34 | 30.61 | 26.80 |
| Pan/dry sample, g | | | | | | | | | | 17.93 | 22.32 | 10.08 |
| HMCF | | | | | | | | | | 100.0% | 100.0% | 100.0% |
| **Description of >#10 particles** | | | | | | | | | | | | |
| Non-soil material | | | | | | | | | | plant | plant | plant |
| Shape | | | | | | | | | | n/a | n/a | subrounded |
| Hardness | | | | | | | | | | n/a | n/a | hard |
| **Sample % Solids** | | | | | | | | | | 75.8% | 72.0% | 35.1% |
| **Dry sample wt, g** | | | | | | | | | | 129.41 | 135.31 | 29.18 |
| **Sieve + Sample Weights** | | | | | | | | | | | | |
| Size | Mass, g | Mass, g | Mass, g | Mass, g | Mass, g | Mass, g | Mass, g | Mass, g | Mass, g | Mass, g | Mass, g | Mass, g |
| 3 inch | | | | | | | | | | | | |
| 2 inch | | | | | | | | | | | | |
| 1.5 inch | | | | | | | | | | | | |
| 1 inch | | | | | | | | | | | | |
| 3/4 inch | | | | | | | | | | | | |
| 3/8 inch | | | | | | | | | | 448.02 | 447.95 | 447.87 |
| #4 | | | | | | | | | | 443.47 | 443.97 | 444.75 |
| #10 | | | | | | | | | | 460.52 | 460.66 | 463.81 |
| #20 | | | | | | | | | | 383.96 | 384.02 | 384.01 |
| #40 | | | | | | | | | | 366.35 | 369.38 | 357.89 |
| #60 | | | | | | | | | | 415.01 | 415.18 | 344.82 |
| #80 | | | | | | | | | | 358.95 | 358.74 | 328.85 |
| #100 | | | | | | | | | | 337.34 | 337.61 | 334.68 |
| #200 | | | | | | | | | | 324.68 | 324.89 | 324.17 |
| **Maximum Particle size** | | | | | | | | | | 19 mm | 19 mm | 19 mm |
| **Specific gravity** | | | | | | | | | | 2.650 | 2.650 | 2.650 |
| **Sample Mass Parameters** | | | | | | | | | | | | |
| Sample Mass >#10, g | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.29 | 2.76 | 6.61 |
| Sample mass <#10, g | #VALUE! | #VALUE! | #VALUE! | #VALUE! | #VALUE! | #VALUE! | #VALUE! | #VALUE! | #VALUE! | 127.12 | 132.55 | 22.57 |

Dry prep = D421
Wet prep = D2217

Standard Values

| Sieve | Opening, um |
|---|---|
| 3 inch | 75000 |
| 2 inch | 50000 |
| 1.5 inch | 37500 |
| 1 inch | 25000 |
| 3/4 inch | 19000 |
| 3/8 inch | 9500 |
| #4 | 4750 |
| #10 | 2000 |
| #20 | 850 |
| #40 | 425 |
| #60 | 250 |
| #80 | 180 |
| #100 | 150 |
| #200 | 75 |

Sieve (tares)

| Size | Mass, g | | Size |
|---|---|---|---|
| 3 inch | | | 3 inch |
| 2 inch | | | 2 inch |
| 1.5 inch | | | 1.5 inch |
| 1 inch | | | 1 inch |
| 3/4 inch | | | 3/4 inch |
| 3/8 inch | 447.74 | | 3/8 inch |
| #4 | 442.83 | | #4 |
| #10 | 459.25 | | #10 |
| #20 | 383.33 | A | #20 |
| #40 | 355.16 | A | #40 |
| #60 | 338.59 | A | #60 |
| #80 | 326.17 | A | #80 |
| #100 | 334.33 | A | #100 |
| #200 | 323.65 | A | #200 |

Default SG 2.65

## Particle Size Analysis of Soils By ASTM D422

**Sieve Data**

Client Code: STLGAS | ETR(s): 120187 | SDG: 68027062 | Date Rec: 30-May-07 | Start Date: 30-May-07 | End Date: 9-Jun-07

**SET:** 68027062B

Dry prep = D421
Wet prep = D2217

| Test | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Laboratory No | 711741 | 711742 | 711743 | 711744 | 711745 | 711746 | 711747 | 711748 | 711749 | 711750 | 711751 | 711752 |
| Sample ID | 041M480810 | 041M480210 | 041M480310 | 041M480510 | 041M480410 | 041M480610 | 041M480710 | 041M100710 | 041M100810 | 041M00910 | 041M101010 | 041N01010 |
| **Sample Prep** | D2217 | D2217 | D2217 | D2217 | D2217 | D2217 | D2217 | D2217 | D2217 | D2217 | D2217 | D2217 |
| Pan, g | | | | | | | | | | | | |
| Pan/sample, g | 121.52 | 124.99 | 156.47 | 158.64 | 164.66 | 132.91 | 134.85 | 187.06 | 184.92 | 181.88 | 189.28 | 182.31 |
| Pan/dry sample, g | | | | | | | | | | | | |
| **Hygroscopic Moisture correction factor (HMCF) for dry prep / Percent Solids for dry and wet prep** | | | | | | | | | | | | |
| Pan, g | 1.01 | 1.01 | 1.01 | 4.12 | 4.14 | 1.02 | 4.14 | 4.11 | 4.08 | 4.16 | 4.11 | 4.14 |
| Pan/sample, g | 16.45 | 22.84 | 19.96 | 120.05 | 128.28 | 32.53 | 97.06 | 180.57 | 265.65 | 138.80 | 212.79 | 198.06 |
| Pan/dry sample, g | 4.06 | 15.99 | 4.05 | 89.21 | 124.46 | 18.37 | 65.72 | 76.88 | 203.98 | 127.54 | 168.00 | 167.83 |
| HMCF | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |
| **Description of >#10 particles** | | | | | | | | | | | | |
| Non-soil material | plant | plant | plant | plant | plant | plant | plant | plant | plant, shell | plant, shell | shell, plant | shell, plant |
| Shape | n/a | n/a | n/a | subangular | subangular | subangular | n/a | n/a | subrounded | n/a | n/a | n/a |
| Hardness | n/a | n/a | n/a | hard | hard | hard | n/a | n/a | hard | n/a | n/a | n/a |
| **Sample % Solids** | 19.8% | 68.3% | 16.0% | 73.4% | 96.9% | 55.1% | 55.5% | 42.4% | 76.4% | 91.6% | 78.5% | 84.4% |
| **Dry sample wt, g** | 24.00 | 85.38 | 25.10 | 115.12 | 156.69 | 73.18 | 74.86 | 79.26 | 141.21 | 166.67 | 148.63 | 153.89 |

Standard Values

| Sieve | Opening, um |
|---|---|
| 3 inch | 75000 |
| 2 inch | 50000 |
| 1.5 inch | 37500 |
| 1 inch | 25000 |
| 3/4 inch | 19000 |
| 3/8 inch | 9500 |
| #4 | 4750 |
| #10 | 2000 |
| #20 | 850 |
| #40 | 425 |
| #60 | 250 |
| #80 | 180 |
| #100 | 150 |
| #200 | 75 |

Sieve (tares)

| Size | Mass, g | |
|---|---|---|
| 3 inch | | |
| 2 inch | | |
| 1.5 inch | | |
| 1 inch | | |
| 3/4 inch | 458.02 | |
| 3/8 inch | 447.74 | |
| #4 | 442.82 | |
| #10 | 459.24 | |
| #20 | 384.89 | C |
| #40 | 346.15 | C |
| #60 | 339.67 | C |
| #80 | 305.42 | C |
| #100 | 334.36 | C |
| #200 | 328.35 | C |

**Sieve + Sample Weights**

| Size | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3 inch | | | | | | | | | | | | |
| 2 inch | | | | | | | | | | | | |
| 1.5 inch | | | | | | | | | | | | |
| 1 inch | | | | | | | | | | | | |
| 3/4 inch | | 458.04 | | | | | | | 465.15 | | | |
| 3/8 inch | 447.93 | 447.77 | 448.49 | 447.76 | | 447.93 | 447.89 | 448.15 | 448.75 | | | |
| #4 | 444.47 | 443.06 | 443.94 | 443.23 | 443.25 | 443.24 | 443.45 | 443.52 | 445.43 | 442.93 | 444.31 | 444.64 |
| #10 | 464.70 | 460.43 | 461.89 | 462.19 | 460.68 | 461.38 | 461.41 | 461.39 | 460.95 | 459.34 | 460.88 | 462.06 |
| #20 | 385.52 | 385.65 | 385.58 | 385.92 | 385.67 | 386.08 | 387.48 | 385.48 | 387.99 | 388.48 | 391.10 | 395.33 |
| #40 | 347.62 | 352.62 | 347.61 | 367.97 | 383.23 | 356.36 | 355.60 | 353.52 | 403.31 | 407.02 | 421.52 | 430.50 |
| #60 | 340.84 | 379.78 | 341.18 | 391.09 | 423.47 | 372.01 | 370.79 | 375.15 | 395.94 | 436.94 | 395.83 | 388.19 |
| #80 | 306.07 | 323.30 | 306.30 | 324.77 | 331.10 | 320.15 | 320.59 | 321.78 | 315.64 | 309.98 | 308.10 | 307.67 |
| #100 | 334.52 | 335.73 | 334.52 | 336.33 | 336.54 | 335.81 | 336.03 | 335.72 | 335.59 | 334.46 | 334.53 | 334.49 |
| #200 | 327.02 | 326.93 | 326.82 | 327.92 | 326.96 | 327.07 | 327.26 | 327.81 | 328.57 | 328.40 | 328.50 | 328.64 |
| **Maximum Particle size** | 19 mm | 25 mm | 19 mm | 19 mm | 9.5 mm | 19 mm | 19 mm | 19 mm | 25 mm | 9.5 mm | 9.5 mm | 9.5 mm |
| **Specific gravity** | 2.650 | 2.650 | 2.650 | 2.650 | 2.650 | 2.650 | 2.650 | 2.650 | 2.650 | 2.650 | 2.650 | 2.650 |

Default SG 2.65

**Sample Mass Parameters**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Mass >#10, g | 7.30 | 1.48 | 4.52 | 3.38 | 1.87 | 2.75 | 2.95 | 3.26 | 12.46 | 0.21 | 3.13 | 4.54 |
| Sample mass <#10, g | 16.70 | 83.90 | 20.58 | 111.74 | 154.82 | 70.43 | 71.91 | 76.00 | 128.75 | 166.46 | 145.50 | 149.35 |

SEVERN TRENT STL

# Sample Handling

ORIGIN ID: SAVA (912) 354-7858
CUSTODY DEPARTMENT
SEVERN TRENT SERVICES
5102 LAROCHE AVE.

SAVANNAH,, GA 31404
UNITED STATES US

Ship Date: 29MAY07
ActWgt: 60.0 LB MAN
System#: 0051708/CAFE2308
Account: S 142091895
Dimmed: 24x15x15 IN

TO CUSTODY
STL BURLINGTON
208 SOUTH PARK DRIVE SUITE 1

COLCHESTER, VT 05446

(802) 655-1203

FedEx
Express

CLS#56187/22/23

Ref:
INV:
PO:
Dept:

Delivery Address
Barcode

BILL RECIPIEN

PRIORITY OVERNIGHT

TRK# 6212 4622 5560

Form
0201

WED
Deliver B
30MAY07

BTV
AA

..05446 -VT-US

XH BTVA

WT 5-05

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22

# STL BURLINGTON
## SAMPLE RECEIPT & LOG IN CHECKLIST

| | | | | | |
|---|---|---|---|---|---|
| Client: | STLGAS | Date Received: | 5-30-07 | Log In Date: | 5-30-07 |
| ETR: | 120187 | Time Received: | 0920 | By: | TPL |
| SDG: | 680-27062 | Received By: | AOT | Signature: | |
| Project: | 27005 | # Coolers Received: | 1 | PM Signature: | Kristin Fiscalo |
| Samples Delivered By: X Shipping Service ☐ Courier ☐ Hand ☐ Other (specify) | | | | Date: | 6/4/07 |

List Air bill Number(s) or Attach a photocopy of the Air Bill:

| COOLER SCREEN | YES | NO | NA | COMMENTS |
|---|---|---|---|---|
| There is *no* evidence to indicate tampering | X | | | |
| Custody seals are present and intact | | X | | |
| Custody seal numbers are present | | | X | |

If yes, list custody seal numbers:

Thermal Preservation Type: ☐ Wet Ice ☐ Blue Ice ☐ None ☐ Other (specify)

IR Gun ID: 62 | Correction Factor (CF) = Ø °C

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Cooler 1: | 15.5 °C | Cooler 6 | °C | Cooler 11 | °C | Cooler 16 | °C |
| Cooler 2: | °C | Cooler 7 | °C | Cooler 12 | °C | Cooler 17 | °C |
| Cooler 3: | °C | Cooler 8 | °C | Cooler 13 | °C | Cooler 18 | °C |
| Cooler 4: | °C | Cooler 9 | °C | Cooler 14 | °C | Cooler 19 | °C |
| Cooler 5 | °C | Cooler 10 | °C | Cooler 15 | °C | Cooler 20 | °C |

*Unless otherwise documented, the recorded temperature readings are adjusted readings to account for the CF of the IR Gun*

*EPA Criteria: 0-6°C, except for air and geo samples which should be at ambient temperature and tissue samples, which may be frozen.*

*Some clients require thermal preservation criteria of 2-4°C or other such criteria. The PM must notify SM when alternate criteria is specified.*

| SAMPLE CONDITION | YES | NO | NA | COMMENTS |
|---|---|---|---|---|
| Sample containers were received intact | X | | | |
| Legible sample labels are affixed to each container | X | | | |

| CHAIN OF CUSTODY (COC) | YES | NO | NA | COMMENTS |
|---|---|---|---|---|
| COC is present and includes the following information for each container: | | | | |
| • Sample ID / Sample Description | X | | | |
| • Date of Sample Collection | X | | | |
| • Time of Sample Collection | X | | | |
| • Identification of the Sampler | | X | | |
| • Preservation Type | | X | | |
| • Requested Tests Method(s) | X | X | | See Below |
| • Necessary Signatures | X | | | |
| Internal Chain of Custody (ICOC) Required | | X | | |
| If yes to above, ICOC Record initiated for every Worksheet | | | | |

| SAMPLE INTEGRITY / USABILITY | YES | NO | NA | COMMENTS |
|---|---|---|---|---|
| The sample container matches the COC | X | | | |
| Appropriate sample containers were received for the tests requested | X | | | |
| Samples were received within holding time | X | | | |
| Sufficient amount of sample is provided for requested analyses | X | | | |
| VOA vials do not have headspace or a bubble >6mm (1/4" diameter) | | | X | |
| Appropriate preservatives were used for the tests requested | | | X | |
| pH of inorganic samples checked and is within method specification | | | X | |
| If no, attach Inorganic Sample pH Adjustment Form | | | | |

ANOMALY / NCR SUMMARY

* Analysis column on COC only has 'Silicon' - Nothing for Grain Size - Logged in for Grain Size per QUOTE/RAD.

FSM002:10.26.05:2
STL Burlington

SEVERN TRENT STL

# Last Page of this Document

# CHAIN OF CUSTODY AND ANALYTICAL REQUEST RECORD

**ENSAFE**

EnSafe Inc. 800-588-7962

COC No. 2

Page 1 of 1

PO No. 5501

Project No. 08888[illegible] Phase D404 Task T501

Lab Name STL

Project Name: Terraine

Site Location: NASP Site 41

Sampler/Site Phone# Allison Harris

Sampler: Allison Harris / Derrick McNeal

Send Results To: Allison Harris Email: aharris@ensafe.com

Data Shipping Address: 5724 Summer Trees Dr Memphis TN 38134

**Sample Analysis Requested** (Fill in the number of containers for each test)

| Sample ID (sys_samp_code) | Location ID (sys_loc_code) | Date (mm/dd/yy) | Time (Military) (hhmm) | Matrix Code (1) | Sample Type (2) | Field Filtered (Y/N) | Total No. of Containers | TOC | Grain Size | Pesticides | | | | | | | | | | <--Preservative Type (3) Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 041M480110 | 041M4801 | 5/24/07 | 1600 | SE | N | N | 3 | 1 | 1 | 1 | * | * | | | | | | | | all soils on COC #2 |
| 041N480110 | 041N4801 | 5/24/07 | 1600 | SE | N | N | 3 | 1 | 1 | 1 | * | * | | | | | | | | |
| 041M480910 | 041M4809 | 5/24/07 | 1630 | SE | N | N | 3 | 1 | 1 | 1 | * | * | | ADD FL PRO and 8270 PAHs per Allison Harris K. Wolf 5/29/07 | | | | | | Strong odor |
| 041M480810 | 041M4808 | 5/24/07 | 1650 | SE | N | N | 3 | 1 | 1 | 1 | * | * | | | | | | | | strong odor |
| 041M480210 | 041M4802 | 5/24/07 | 1700 | SE | N | N | 3 | 1 | 1 | 1 | * | * | | | | | | | | Strong odor |
| 041M480310 | 041M4803 | 5/24/07 | 1715 | SE | N | N | 3 | 1 | 1 | 1 | * | * | | | | | | | | strong odor |
| 041M480510 | 041M4805 | 5/24/07 | 1730 | SE | N | N | 3 | 1 | 1 | 1 | * | * | | | | | | | | |
| 041M480410 | 041M4804 | 5/24/07 | 1750 | SE | N | N | 3 | 1 | 1 | 1 | * | * | | | | | | | | |
| 041M480610 | 041M4806 | 5/24/07 | 1805 | SE | N | N | 3 | 1 | 1 | 1 | * | * | | | | | | | | |
| * 041M480710 | 041M4807 | 5/24/07 | 1815 | SE | N | N | 3* | 1 | 1 | 1 | * | * | | | | | | | | |

Turnaround Time(specify): **Final** _____ days **Email** (if applicable) _____ days

Email Results(check): Yes____ No____

Deliverable (check): Level 2____ Level 3____ Level 4____ TX TRRP-13____

***Field* Comments:**

***Lab* Comments:** *5/29/07 confirmed lab analyses w/ Allison Harris A. Robinson 680-2 7062

**Sample Shipment and Delivery Details**

Number of coolers in shipment: 3

Samples Iced?(check) Yes ✓ No____

Method of Shipment: Fedex

Airbill No:

Date Shipped: 5/25/07

| Relinquished by (signature) | Date | Time | Received by (signature) | Date | Time |
|---|---|---|---|---|---|
| 1 Allison Harris | 5/25/07 | 0930 | 1 [illegible] | 052607 | 0945 |
| 2 | | | 2 | | |
| 3 | | | 3 | | |

**(1) Matrix Code:** **AA**=Air, **AQ**=Air Quality Control Matrix, **DC**=Drill Cuttings, **GS**=Soil Gas, **LD**=Drilling Fluid, **LF**=Free Product, **LH**=Liquid Waste, **Oil**=Oil, **SB**=Bentonite, **SC**=Cement, **SE**=Sediment, **SF**=Filter Sandpack, **SL**=Sludge, **SN**=Miscellaneous Solid/Building Materials, **SO**=Soil, **SQ**=Soil/Solid Quality Control Matrix, **ST**=Solid Waste, **SW**=Swab/Wipe, **TA**=Animal Tissue, **TP**=Plant Tissue, **TQ**=Tissue Quality Control Matrix, **U**=Unknown, **WA**=Aqueous Drill Cuttings, **WE**=Estuary, **WG**=Ground Water, **WL**=Leachate, **WO**=Ocean Water, **WP**=Drinking Water, **WQ**=Water Quality Control Matrix, **WS**=Surface Water, **WW**=Waste Water

**(2) Sample Type:** **AB**=Ambient Blank, **EB**=Equipment Blank, **FB**=Field Blank, **FD**=Field Duplicate Sample, **FR**=Field Replicate, **MB**=Material Blank, **N**=Normal Environmental Sample, **RB**=Material Rinse Blank, **TB**=Trip Blank

**(3) Preservative added:** **HA**=Hydrochloric Acid, **NI**=Nitric Acid, **SH**=Sodium Hydroxide, **SA**=Sulfuric Acid, **AA**=Ascorbic Acid, **HX**=Hexane, **ME**=Methanol, **SB**=sodium bisulfate, **ST**=Sodium Thiosulfate, If **NO preservative** added leave blank

Rev. 06/05

# CHAIN OF CUSTODY AND ANALYTICAL REQUEST RECORD

COC No.

Page 1 of 1

**ENSAFE**

EnSafe Inc. 800-588-7962

Project Name: Terraine

Site Location: NASP Site 41

Sampler/Site Phone# Allison Harris 901-372-7962

PO No. 5501

Project No 0888802584 Phase P1404 Task T501

Lab Name STL

**Sample Analysis Requested** (Fill in the number of containers for each test)

Sampler: Allison Harris / Derrick McNeal

Send Results To: Allison Harris Email: aharris@ensafe.com

Data Shipping Address: 5724 Summer Trus Dr Memphis TN 38134

| Sample ID (sys_samp_code) | Location ID (sys_loc_code) | Date (mm/dd/yy) | Time (Military) (hhmm) | Matrix Code (1) | Sample Type (2) | Field Filtered (Y/N) | Total No. of Containers | Metals | TOC | Grain Size | | | | | | | | | <--Preservative Type (3) Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 041M100710 | 041M1007 | 5/24/07 | 1042 | SE | N | N | 3 | 1 | 1 | 1 | | | | | | | | | |
| 041M100810 | 041M1008 | 5/24/07 | 0935 | SE | N | N | 3 | 1 | 1 | 1 | | | | | | | | | |
| 041M100910 | 041M1009 | 5/24/07 | 1212 | SE | N | N | 3 | 1 | 1 | 1 | | | | | | | | | |
| 041M101010 | 041M1010 | 5/24/07 | 1137 | SE | N | N | 3 | 1 | 1 | 1 | | | | | | | | | |
| 041N101010 | 041N1010 | 5/24/07 | 1137 | SE | N | N | 3 | 1 | 1 | 1 | | | | | | | | | |

TEMP. 2.6 / 1.0 / 1.1

Turnaround Time(specify): **Final** 21 days **Email** (if applicable) 21 days

Email Results(check): Yes ✓ No____

Deliverable (check): Level 2 ✓ Level 3____ Level 4____ TX TRRP-13____

***Field* Comments:**

***Lab* Comments:** 680-27062

**Sample Shipment and Delivery Details**

Number of coolers in shipment: 3

Samples Iced?(check) Yes ✓ No____

Method of Shipment: FedEx

Airbill No:

Date Shipped: 5/25/07

| Relinquished by (signature) | Date | Time | Received by (signature) | Date | Time |
|---|---|---|---|---|---|
| 1 Allison Harris | 5/25/07 ~~5/24/07~~ | 0930 | 1 | 052607 | 0945 |
| 2 | | | 2 | | |
| 3 | | | 3 | | |

**(1) Matrix Code:** **AA**=Air, **AQ**=Air Quality Control Matrix, **DC**=Drill Cuttings, **GS**=Soil Gas, **LD**=Drilling Fluid, **LF**=Free Product, **LH**=Liquid Waste, **Oil**=Oil, **SB**=Bentonite, **SC**=Cement, **SE**=Sediment, **SF**=Filter Sandpack, **SL**=Sludge, **SN**=Miscellaneous Solid/Building Materials, **SO**=Soil, **SQ**=Soil/Solid Quality Control Matrix, **ST**=Solid Waste, **SW**=Swab/Wipe, **TA**=Animal Tissue, **TP**=Plant Tissue, **TQ**=Tissue Quality Control Matrix, **U**=Unknown, **WA**=Aqueous Drill Cuttings, **WE**=Estuary, **WG**=Ground Water, **WL**=Leachate, **WO**=Ocean Water, **WP**=Drinking Water, **WQ**=Water Quality Control Matrix, **WS**=Surface Water, **WW**=Waste Water

**(2) Sample Type:** **AB**=Ambient Blank, **EB**=Equipment Blank, **FB**=Field Blank, **FD**=Field Duplicate Sample, **FR**=Field Replicate, **MB**=Material Blank, **N**=Normal Environmental Sample, **RB**=Material Rinse Blank, **TB**=Trip Blank

**(3) Preservative added:** **HA**=Hydrochloric Acid, **NI**=Nitric Acid, **SH**=Sodium Hydroxide, **SA**=Sulfuric Acid, **AA**=Ascorbic Acid, **HX**=Hexane, **ME**=Methanol, **SB**=sodium bisulfate, **ST**=Sodium Thiosulfate, If **NO preservative** added leave blank

Rev. 06/05

# LOGIN SAMPLE RECEIPT CHECK LIST

Client: EnSafe, Inc.

Job Number: 680-27062-1
Sdg Number: TERR01

**Login Number:** **27062**

| Question | T/F/NA | Comment |
|---|---|---|
| Radioactivity either was not measured or, if measured, is at or below background | NA | |
| The cooler's custody seal, if present, is intact. | True | |
| The cooler or samples do not appear to have been compromised or tampered with. | True | |
| Samples were received on ice. | True | |
| Cooler Temperature is acceptable. | True | |
| Cooler Temperature is recorded. | True | |
| COC is present. | True | |
| COC is filled out in ink and legible. | True | |
| COC is filled out with all pertinent information. | True | |
| There are no discrepancies between the sample IDs on the containers and the COC. | True | |
| Samples are received within Holding Time. | True | |
| Sample containers have legible labels. | True | |
| Containers are not broken or leaking. | True | |
| Sample collection date/times are provided. | True | |
| Appropriate sample containers are used. | True | |
| Sample bottles are completely filled. | True | |
| There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs | True | |
| VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter. | False | |
| If necessary, staff have been informed of any short hold time or quick TAT needs | True | |
| Multiphasic samples are not present. | NA | |
| Samples do not require splitting or compositing. | NA | |

**Attachment C**
**Toxicity Analytical Report**

TRAC
*Environmental/Biomedical*
*Chemistry and Toxicology*

23 July 2007

Allison Harris
Ensafe
5724 Summer Trees Drive
Memphis, Tennessee 38134

Dear Ms. Harris:

Enclosed, please find report and all data related to Project 0888802584, 10-day survival and growth tests of *Hyalella azteca* exposed to whole, field collected sediments and a control sediment. No statistically significant reductions in survival or growth were detected in any of the test sediments when compared to control sediment.

If you have any other questions concerning these tests, please do not hesitate to contact me at 456-5836.

Sincerely,

Daniel E. Johnson
Laboratory Director

14 S. 2nd Street • Pensacola, Florida 32507 • (850) 456-5836 • Fax (850) 456-5838
113 Cedar Street • Denton, Texas 76201 • (940) 566-3359 • Fax (940) 566-2698
www.traclaboratories.com

# 10-Day Whole Sediment Toxicity Screening Tests Exposing *Hyalella azteca* to Five Whole Sediments from Ensafe

Submitted to:

**Allison Harris**
**Ensafe**
**5724 Summer Trees Drive**
**Memphis, Tennessee 38134**
**(901) 277-3398**

Submitted by:

**TRAC Laboratories, Inc.**
**14 South 2nd Street**
**Pensacola, Florida 32507**
**(850) 456-5836**

Florida Department of Health and Rehabilitative Services
Certification Number E81181

**Ensafe Project Number:** 0888802584
**TRAC Project Number:** 119-4548-4552
**Report Number:** 119-4548

**Project Date:** May 2007

**Statement of Quality Assurance**

*This Study was reviewed by the Laboratory Director to ensure that procedures outlined in TRAC's QA plan, approved through Florida's Department of Environmental Protection, were followed. The final report is an accurate reflection of the raw data and meets NELAP standards.*

**Beth Fugate, Technician**

**Natalia Hofmann, Technician**

**Final Raw Data Audit:**

**Final Report Audit:**

**Dan Johnson, Laboratory Director**

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2. Characteristics of overlying water samples from selected replicates of each sediment exposure.

3. Survival of *Hyalella azteca*, exposed to 5 sediment samples from Ensafe in 10-day whole sediment static renewal tests.

4. Growth of *Hyalella azteca*, exposed to 5 sediment samples from Ensafe in 10-day whole sediment static renewal tests.

## Toxicity Test Summary Sheet

| | |
|---|---|
| **Client:** | Ensafe; project number 0888802584 |
| **Project Number:** | 119-4548-4552 |
| **Study Director:** | Dan Johnson |
| **Test Material:** | Field collected whole sediment samples |
| **Date Materials Received:** | 25 May 2007 |
| **Date of Tests:** | 1 through 11 June 2007 |
| **Test Conditions:** | Static, 10-day duration. |
| **Test Procedures:** | EPA/600/R-99/064. Methods for Measuring the Toxicity and Bioaccumulation of Sediment-associated Contaminants with Freshwater Invertebrates. Second Edition. Method 100.1 |
| **Test Organisms:** | The freshwater amphipod *Hyalella azteca*, 13-14 days in age |
| **Source:** | *H. azteca* were supplied by Chesapeake Cultures. |
| **Test Water:** | Moderately hard reconstituted freshwater |
| **Exposure Concentration:** | 100% sediment. |
| **Effect Criteria:** | Survival and growth |
| **Results:** | No statistically significant mortality occurred in any of the 5 sediment exposures. No statistically significant reductions in growth were observed in any of the 5 sediment exposures. |

## INTRODUCTION

Five sediment samples were collected by Ensafe personnel, and tested at TRAC Laboratories Inc., Pensacola, Florida, to determine acute and sub-lethal effects relative to *Hyalella azteca*. The criteria for effects were survival and growth. Tests were conducted from 1 through 11 June 2007. All raw data related to this study are stored at TRAC; however, copies are provided as Appendix A. This report consists of a total of 40 pages.

## MATERIALS AND METHODS

Test Material

Five sediment samples were obtained from Ensafe personnel on 25 May 2007. The samples were contained in large mouth, high density polyethylene (HDPE) 3.75 L jars. A chain of custody form accompanied the samples. The samples arrived intact surrounded by wet ice. Sample label information was recorded in the test sediment log as was arrival temperature and the date received at TRAC Laboratories in Florida. Arrival temperature of the samples was 10.2 $^{o}$C.

Sample volume, sieve size, date of receipt and processing data were recorded in the sample log prior to test initiation and are presented in Table 1.

Overlying Water

Control and overlying water was reconstituted freshwater (RCF) with a hardness of 92 mg/L $CaCO_3$ (EPA, 2002).

Negative Control Sediment

Negative control sediment was a mixture of 90% 20 mesh silica sand and 10% C17 collected from Perdido Bay. The negative control sediment was obtained by TRAC personnel from New England Silica (sand) and Perdido Bay (C-17) at position $30^0$ 19.753' N, $087^0$ 27.869' W.

Test Organisms

*Hyalella azteca* (lot # HA-07-02) were obtained from a commercial supplier and were approximately 13-14 days old upon test initiation.

An acute toxicity test with a reference toxicant and *H. azteca* from the same population as used in the sediment test, indicated the *H. azteca* were in an acceptable range of chemical sensitivity to the reference toxicant (Appendix B).

A new lot of Sodium Dodecyl Sulfate (SDS) was purchased and put into use April 2004. Significantly higher LC50 values were obtained with the new lot of SDS. Two additional lots of

*H. azteca* were purchased and tested to confirm the reliability of the initial LC50 value obtained with the batch of *H. azteca* used for the sediment exposures. The results of the two tests were statistically similar (LC50 values of 73.8, 67.3 and 80.0 mg/L). In addition, other organisms tested at TRAC exhibited an increase in LC50 values as well. Therefore, the *H. azteca* exposed to test sediments are considered to be in a normal range of sensitivity.

Test Conditions

The sediment tests were conducted in a temperature-controlled (23 ± 1°C) environmental chamber under a 16 hour light, 8 hour dark photo period. Sediment tests were conducted in 0.5 liter glass jars containing 100 ml of sediment and 175 ml of overlying water. Each exposure consisted of eight replicates of 10 organisms each, resulting in a total of 80 organisms per sediment exposure. Approximately 90% of the overlying water was carefully decanted off at approximately 12 hour intervals and replaced with an equivalent volume of fresh RCF.

Sediment Preparation

Sediment samples were press sieved through a 1mm or 2mm stainless steel sieve to remove large debris and predators which might interfere with the testing process. The complete contents of each sample, including the sediment porewater, were captured and used to aid the sample in passing through the sieve.

Following the press sieving step and prior to test initiation, sediments were homogenized by blending the sediment 3 - 5 minutes using a stainless steel spoon.

Once homogenized, the sediments were measured out in 100 ml aliquots and transferred to 0.5L glass jars. Eight replicates were measured out for each sediment sample and negative control.

Test Initiation

The jars containing test sediments were placed in the environmental chamber in numerical order. Replicate numbers were assigned randomly from a master list. One hundred mL of each sediment, followed by 175 mL of RCF, carefully poured over a turbidity reducer, was added to the appropriate test vessel. The exposure vessels were then allowed to settle 14 - 16

hours, followed by an overlying water exchange, before animals were introduced.

Once the amphipods were acclimated to laboratory conditions (temperature, lighting), the *H. azteca* were removed from the culture sediment and prepared for test size sorting. *H. azteca*, approximately 1.5 mm (curled), were selected individually with a small bore pipette and transferred to a 10 ml beaker. Ten *H. azteca* were collected in each beaker and observed for good color, full gut, and size. One beaker of *H. azteca* was added in random sequence to each exposure vessel, releasing 10 amphipods into each sediment exposure. An additional beaker of 10 *H. azteca* was collected for initial (baseline) weight measurements.

Prior to introduction of amphipods, water quality parameters (pH, DO, temperature, alkalinity, hardness and conductivity) were monitored and recorded on the physical data sheets.

Ammonia Analysis

Before addition of *H. azteca*, 15 to 20 mL of overlying water were removed from each exposure replicate (Day 0). Temperature and pH measurements were recorded prior to the total ammonia analysis. The Orion 250A pH/ISE meter and 95-12 gas-sensing ammonia electrode measures the aqueous ammonia ($NH_{3(aq)}$) after conversion from dissolved ammonia ($NH_{3(aq)}$ and $NH_4^+$). Sample color and turbidity do not affect the measurement. Other ionic species do not interfere with this probe. The ammonia-selective electrode method (4500-$NH_3$, ASTM 13th Edition, 1992) was followed by raising each sample pH to above 11 with 10 N NaOH, and measuring ammonia across the probe's membrane as it was converted from dissolved $NH_3$ and $NH_4^+$. Potentiometric measurements were recorded for each sample in millivolts (mV), and extrapolated to mg/L of total ammonia from the standard curve constructed with each test series.

A standard ammonia curve was constructed for each test series using 4 standards (0.1, 1.0, 10, and 100 mg/L) diluted from a 1000 mg/L stock of ammonia. The log transformed standard concentrations were entered into a linear regression formula with their potentiometric responses (mV) yielding correlations of 98 to 100%. All sample measurements were then entered into this same formula to retrieve a total ammonia measurement in mg/L.

In each test series, DI blanks were measured to calibrate a zero-ammonia point for the probe. When enough sample was available, a sample was duplicated to measure variation. A quality control sample was ordered through a private vendor (Hach, Lot A4103) and was

included in the analyses. Results were satisfactory. Total ammonia concentrations for each sample ID are presented in Table 2. Ammonia analyses were performed on day 0 and day 10 of testing.

Test Termination

Test duration was 10 days; at the end of which, sediments from each replicate were placed in a 250μm mesh sieve and the *H. azteca* collected live. Contents of the sieve from each replicate, where all *H. azteca* were not accounted for, were rinsed into collection jars and preserved with 90% isopropanol containing rose bengal stain for future examination. Collected *H. azteca* were loaded into tared weigh boats, dried in an oven at $60^0$C for 24 hours, cooled in a dessicator and weighed.

Physical Parameters

Temperature and dissolved oxygen (DO) were measured initially and daily thereafter in at least one replicate of each sediment exposure. Aeration must be applied if DO levels fall below 2.5 mg/L; therefore, it was necessary to measure DO daily. However, no aeration was required in any sediment exposure during these tests. Total ammonia, hardness, alkalinity, pH and conductivity of overlying water were measured in one replicate of each sediment on days 0 and 10 (Table 2). DO, pH and temperature were measured daily in the RCF used for renewal of overlying water.

Feeding

Each exposure vessel was fed 1.0 ml YCT initially and daily after overlying water renewal.

Statistical Analysis

Statistical analyses are accomplished using the computer program TOXSTAT, developed at the University of Wyoming. *H. azteca* survival proportions and weights are tested for normality and homogeneity of variance. If assumptions of normality and homogeneity are not met, analysis is conducted using the Wilcoxon Rank Sum Test. If assumptions of normality and

homogeneity of variance are met, a t-test is performed.

Results

After 10 days of exposure, no statistically significant reductions in survival or growth were observed in any test sediment when compared to the negative control sediment. Survival after the 10-day exposure period ranged from 78.75% in test sediment 041M100710 to 97.5% in test sediment 041N101010. Negative control survival was 87.5% (Table 3). Control survival was acceptable (≥80%).

Weights (growth) were measured but not analyzed, as all test sediment weights were greater than control weights (Table 4).

Deviations in Protocol

No deviations form prescribed methods occurred during this testing event.

**Table 1.** Sediment sample receipt and processing information.

| **Ensafe Sample ID**[1] | **041M100710** | **041M100810** | **041M100910** | **041M101010** | **041N101010** |
|---|---|---|---|---|---|
| TRAC Sample ID | 4548 | 4549 | 4550 | 4551 | 4552 |
| Sample Volume (L) | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 |
| Sieve Size (mm) | 1 | 1 | 1 | 1 | 1 |
| Sample Date | 24 May 07 | 24 May 07 | 24 May 07 | 24 May 07 | 24 May 07 |
| Sample Time | 1042 | 0940 | 1212 | 1137 | 1137 |
| Arrival Date | 25 May 07 | 25 May 07 | 25 May 07 | 25 May 07 | 25 May 07 |
| Arrival Time | 0812 | 0812 | 0812 | 0812 | 0812 |
| Arrival Temperature ($^0$C) | 10.2 | 10.2 | 10.2 | 10.2 | 10.2 |

1. In the tables that follow, only Earth Tech sample identifications are used.

**Table 2.** Characteristics of overlying water samples from selected replicates of each sediment exposure.

| Sample ID | pH | | Conductivity (µs) | | Hardness (mg/L $CaCO_3$) | | Alkalinity (mg/L $CaCO_3$) | | Ammonia (mg/L $NH_3$-N) | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Day 0 | Day 10 | Day 0 | Day 10 | Day 0 | Day 10 | Day 0 | Day 10 | Day 0 | Day 10 |
| **Negative control** | 8.0 | 6.9 | 1662 | 347 | 208 | 92 | 61 | 68 | 1.0 | 1.0 |
| **041M100710** | 7.5 | 6.7 | 419 | 309 | 113 | 84 | 69 | 60 | 0.8 | 0.7 |
| **041M100810** | 7.6 | 7.2 | 486 | 349 | 140 | 88 | 75 | 94 | 0.6 | 0.5 |
| **041M100910** | 7.7 | 7.1 | 398 | 304 | 116 | 92 | 78 | 78 | 0.5 | 0.4 |
| **041M101010** | 7.7 | 7.1 | 422 | 308 | 112 | 84 | 79 | 77 | 0.4 | 0.3 |
| **041N101010** | 7.8 | 7.5 | 437 | 320 | 116 | 80 | 86 | 85 | 0.5 | 0.3 |

**Table 3.** Survival of *Hyalella azteca*, exposed to 5 sediment samples from Ensafe in 10-day whole sediment static renewal tests.

| Test Sediment (TRAC ID) | Replicate Number | Number Surviving | Percent Surviving | Mean Survival (%) |
|---|---|---|---|---|
| Negative control | 7 | 10 | 100 | 87.5 |
| | 10 | 10 | 100 | |
| | 17 | 8 | 80 | |
| | 20 | 9 | 90 | |
| | 25 | 10 | 100 | |
| | 36 | 7 | 70 | |
| | 42 | 8 | 80 | |
| | 45 | 8 | 80 | |
| 041M100710 (4548) | 5 | 8 | 80 | 78.75 |
| | 9 | 10 | 100 | |
| | 15 | 10 | 100 | |
| | 23 | 8 | 80 | |
| | 28 | 5 | 50 | |
| | 31 | 8 | 80 | |
| | 37 | 5 | 50 | |
| | 41 | 9 | 90 | |
| 041M100810 (4549) | 1 | 10 | 100 | 86.25 |
| | 3 | 10 | 100 | |
| | 12 | 10 | 100 | |
| | 18 | 9 | 90 | |
| | 22 | 10 | 100 | |
| | 29 | 2 | 20 | |
| | 35 | 10 | 100 | |
| | 43 | 8 | 80 | |
| 041M100910 (4550) | 2 | 10 | 100 | 96.25 |
| | 6 | 10 | 100 | |
| | 14 | 9 | 90 | |
| | 24 | 10 | 100 | |
| | 33 | 10 | 100 | |
| | 38 | 10 | 100 | |
| | 39 | 9 | 90 | |
| | 46 | 9 | 90 | |

**Table 3.** continued.

| Test Sediment (TRAC ID) | Replicate Number | Number Surviving | Percent Surviving | Mean Survival (%) |
|---|---|---|---|---|
| 041M101010 (4551) | 4 | 10 | 100 | 96.25 |
| | 11 | 7 | 70 | |
| | 19 | 10 | 100 | |
| | 26 | 10 | 100 | |
| | 30 | 10 | 100 | |
| | 34 | 10 | 100 | |
| | 47 | 10 | 100 | |
| | 48 | 10 | 100 | |
| 041N101010 (4552) | 8 | 10 | 100 | 97.5 |
| | 13 | 10 | 100 | |
| | 16 | 10 | 100 | |
| | 21 | 10 | 100 | |
| | 27 | 10 | 100 | |
| | 32 | 8 | 80 | |
| | 40 | 10 | 100 | |
| | 44 | 10 | 100 | |

**Table 4.** Growth of *Hyalella azteca*, exposed to 5 sediment samples from Ensafe in 10-day whole sediment static renewal tests.

| **Test Sediment** (TRAC ID) | **Replicate Number** | **Number Surviving** | **Mean Weight per Replicate (mg)** | **Mean Weight Per Treatment (mg)** |
|---|---|---|---|---|
| Negative control | 7 | 10 | 0.080 | 0.086 |
| | 10 | 10 | 0.082 | CV = 16.0% |
| | 17 | 8 | 0.081 | |
| | 20 | 9 | 0.091 | |
| | 25 | 10 | 0.057 | |
| | 36 | 7 | 0.096 | |
| | 42 | 8 | 0.098 | |
| | 45 | 8 | 0.105 | |
| 041M100710 (4548) | 5 | 8 | 0.068 | 0.102 |
| | 9 | 10 | 0.081 | |
| | 15 | 10 | 0.081 | |
| | 23 | 8 | 0.075 | |
| | 28 | 5 | 0.138 | |
| | 31 | 8 | 0.090 | |
| | 37 | 5 | 0.206 | |
| | 41 | 9 | 0.076 | |
| 041M100810 (4549) | 1 | 10 | 0.116 | 0.114 |
| | 3 | 10 | 0.111 | |
| | 12 | 10 | 0.220 | |
| | 18 | 9 | 0.113 | |
| | 22 | 10 | 0.112 | |
| | 29 | 2 | 0.170 | |
| | 35 | 10 | 0.112 | |
| | 43 | 8 | 0.130 | |
| 041M100910 (4550) | 2 | 10 | 0.197 | 0.193 |
| | 6 | 10 | 0.174 | |
| | 14 | 9 | 0.186 | |
| | 24 | 10 | 0.189 | |
| | 33 | 10 | 0.197 | |
| | 38 | 10 | 0.172 | |
| | 39 | 9 | 0.173 | |
| | 46 | 9 | 0.209 | |

**Table 4.** continued.

| Test Sediment (TRAC ID) | Replicate Number | Number Surviving | Mean Weight per Replicate (mg) | Mean Weight Per Treatment (mg) |
|---|---|---|---|---|
| 041M101010 (4551) | 4 | 10 | 0.193 | 0.187 |
| | 11 | 7 | 0.129 | |
| | 19 | 10 | 0.231 | |
| | 26 | 10 | 0.227 | |
| | 30 | 10 | 0.221 | |
| | 34 | 10 | 0.205 | |
| | 47 | 10 | 0.160 | |
| | 48 | 10 | 0.179 | |
| 041N101010 (4552) | 8 | 10 | 0.210 | 0.197 |
| | 13 | 10 | 0.178 | |
| | 16 | 10 | 0.223 | |
| | 21 | 10 | 0.192 | |
| | 27 | 10 | 0.211 | |
| | 32 | 8 | 0.190 | |
| | 40 | 10 | 0.183 | |
| | 44 | 10 | 0.225 | |

# APPENDIX A

# CHAIN OF CUSTODY AND ANALYTICAL REQUEST RECORD

COC No. 1 | Page 1 of 1 (1 of 20)

**ENSAFE**

EnSafe Inc. 800-588-7962

Project Name: Terraine | PO No. 5479 | Project No. 08888025 Phase PH04 Task TS01

Site Location: NASP Site 41 | Lab Name TRAC

Sampler/Site Phone# Allison Harris 901-277-3398

Sampler: Allison Harris / Derrick McNeal

Send Results To: Allison Harris Email: aharris@ensafe.com

Data Shipping Address: ~~524~~ 5724 Summer Trees Dr Memphis TN 38134

**Sample Analysis Requested** (Fill in the number of containers for each test)

| Sample ID (sys_samp_code) | Location ID (sys_loc_code) | Date (mm/dd/yy) | Time (Military) (hhmm) | Matrix Code (1) | Sample Type (2) | Field Filtered (Y/N) | Total No. of Containers | TOXICITY | <--Preservative Type (3) | Remarks TRAC ID |
|---|---|---|---|---|---|---|---|---|---|---|
| 041M100710 | 041M1007 | 5/24/07 | 1042 | SE | N | N | 1 | X | | 119-4548 |
| 041M100810 | 041M1008 | 5/24/07 | 0940 | SE | N | N | 1 | X | | 119-4549 |
| 041M100910 | 041M1009 | 5/24/07 | 1212 | SE | N | N | 1 | X | | 119-4550 |
| 041M101010 | 041M1010 | 5/24/07 | 1137 | SE | N | N | 1 | X | | 119-4551 |
| 041N101010 | 041M1010 | 5/24/07 | 1137 | SE | N | N | 1 | X | | 119-4552 |

Turnaround Time(specify): **Final** 21 days **Email** (if applicable) 21 days

Email Results(check): Yes ✓ No____

Deliverable (check): Level 2 ✓ Level 3____ Level 4____ TX TRRP-13____

***Field* Comments:**

***Lab* Comments:** Arrived @ 10.2°C

**Sample Shipment and Delivery Details**

Number of coolers in shipment:

Samples Iced?(check) Yes____ No____

Method of Shipment:

Airbill No:

Date Shipped:

| Relinquished by (signature) | Date | Time | Received by (signature) | Date | Time |
|---|---|---|---|---|---|
| 1 Allison R Harris | 5/25/07 | 812 | 1 Beth Fugate | 5/25/07 | 0812 |
| 2 | | | 2 | | |
| 3 | | | 3 | | |

**(1) Matrix Code:** **AA**=Air, **AQ**=Air Quality Control Matrix, **DC**=Drill Cuttings, **GS**=Soil Gas, **LD**=Drilling Fluid, **LF**=Free Product, **LH**=Liquid Waste, **Oil**=Oil, **SB**=Bentonite, **SC**=Cement, **SE**=Sediment, **SF**=Filter Sandpack, **SL**=Sludge, **SN**=Miscellaneous Solid/Building Materials, **SO**=Soil, **SQ**=Soil/Solid Quality Control Matrix, **ST**=Solid Waste, **SW**=Swab/Wipe, **TA**=Animal Tissue, **TP**=Plant Tissue, **TQ**=Tissue Quality Control Matrix, **U**=Unknown, **WA**=Aqueous Drill Cuttings, **WE**=Estuary, **WG**=Ground Water, **WL**=Leachate, **WO**=Ocean Water, **WP**=Drinking Water, **WQ**=Water Quality Control Matrix, **WS**=Surface Water, **WW**=Waste Water

**(2) Sample Type:** **AB**=Ambient Blank, **EB**=Equipment Blank, **FB**=Field Blank, **FD**=Field Duplicate Sample, **FR**=Field Replicate, **MB**=Material Blank, **N**=Normal Environmental Sample, **RB**=Material Rinse Blank, **TB**=Trip Blank

**(3) Preservative added:** **HA**=Hydrochloric Acid, **NI**=Nitric Acid, **SH**=Sodium Hydroxide, **SA**=Sulfuric Acid, **AA**=Ascorbic Acid, **HX**=Hexane, **ME**=Methanol, **SB**=sodium bisulfate, **ST**=Sodium Thiosulfate, If **NO preservative** added leave blank

Rev. 06/05

# Sediment Press Sieve Data

| # | Sample ID | Collection Date | Date Sample Received @ TRAC | Receipt Temp. (°C) | Date Sample Sieved | Sieve Size (mm) | Sediment Color | Sediment Odor | Sediment Matrix | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| 4548 | 041M100710 | 24 May 07 | 25 May 07 | 10.2 | 29 May 07 BF | 1 | Dk Brown | — | sand, silt & grass & roots | |
| 4549 | 041M100810 | | | | 29 May 07 NIP | 1 | Dk Brown | — | silt & sand some rocks | |
| 4551 | 041M101010 | | | | 29 May 07 BF | 1 | Grey | — | sand & shell hash | |
| 4550 | 041M100910 | | | | 29 May 07 NIP | 1 | Tan | — | sand | |
| 4552 | 041N101010 | 24 May 07 | 25 May 07 | 10.2 | 29 May 07 BF | 1 | Grey | — | sand & shell hash | |

*Hyalella azteca*
**Randomization Identification Sheet**

| **Trac ID:** 119-4548-~~4553~~ 4552 / 11 Jun 07 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Sample ID** | **Replicate Numbers** | | | | | | | |
| CONTROL | 7 | 10 | 17 | 20 | 25 | 36 | 42 | 45 |
| 041M100710 | 5 | 9 | 15 | 23 | 28 | 31 | 37 | 41 |
| 041M100810 | 1 | 3 | 12 | 18 | 22 | 29 | 35 | 43 |
| 041M101010 | 4 | 11 | 19 | 26 | 30 | 34 | 47 | 48 |
| 041M100910 | 2 | 6 | 14 | 24 | 33 | 38 | 39 | 46 |
| 041N101010 | 8 | 13 | 16 | 21 | 27 | 32 | 40 | 44 |
| | | | | | | | | |
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| | | | | | | | | |

*Hyalella azteca*

**Randomization Sheet**

Trac ID 119-4548-~~4553~~ 4552 6-11-07

Sponsor EnSafe Inc.

Start Date 1 Jun 07

Culture ID HA-07-02

| Jar # | Survival |
|---|---|
| 7 | 10 |
| 10 | 10 |
| 17 | 8 |
| 20 | 9 |
| 25 | 10 |
| 36 | 7 |
| 42 | 8 |
| 45 | 8 |

% Survival: 87.5

Sample ID # CONTROL

Initials BF

| Jar # | Survival |
|---|---|
| 4 | 10 |
| 11 | 7 |
| 19 | 10 |
| 26 | 10 |
| 30 | 10 |
| 34 | 10 |
| 47 | 10 |
| 48 | 10 |

% Survival: (96.25) 96.3

Sample ID # 041M101010

Initials NP

| Jar # | Survival |
|---|---|
| 5 | 8 |
| 9 | 10 |
| 15 | 10 |
| 23 | 8 |
| 28 | 5 |
| 31 | 8 |
| 37 | 5 |
| 41 | 9 |

% Survival: (78.75) 78.8

Sample ID # 041M100710

Initials NP

| Jar # | Survival |
|---|---|
| 2 | 10 |
| 6 | 10 |
| 14 | 9 |
| 24 | 10 |
| 33 | 10 |
| 38 | 10 |
| 39 | 9 |
| 46 | 9 |

% Survival: (96.25) 96.3

Sample ID # 041M100910

Initials BF

| Jar # | Survival |
|---|---|
| 1 | 10 |
| 3 | 10 |
| 12 | 10 |
| 18 | 9 |
| 22 | 10 |
| 29 | 2 |
| 35 | 10 |
| 43 | 8 |

% Survival: (86.25) 86.3

Sample ID # 041M100810

Initials BF

| Jar # | Survival |
|---|---|
| 8 | 10 |
| 13 | 10 |
| 16 | 10 |
| 21 | 10 |
| 27 | 10 |
| 32 | 8 |
| 40 | 10 |
| 44 | 10 |

% Survival: 97.5

Sample ID # 041N101010

Initials BF

119-4548-4552
File: HA.SURV Transform: ARC SINE(SQUARE ROOT(Y))

Shapiro - Wilk's test for normality

D = 0.613

W = 0.940

Critical W (P = 0.05) (n = 16) = 0.887
Critical W (P = 0.01) (n = 16) = 0.844

Data PASS normality test at P=0.01 level. Continue analysis.

119-4548-4552
File: HA.SURV Transform: ARC SINE(SQUARE ROOT(Y))

F-Test for equality of two variances

| GROUP | IDENTIFICATION | VARIANCE | F |
|---|---|---|---|
| 1 | Control | 0.029 | |
| 2 | 041M100710 | 0.059 | 2.039 |

Critical F = 8.89 (P=0.01, 7, 7)

Since F <= Critical F, FAIL TO REJECT Ho: Equal Variances.

119-4548-4552
File: HA.SURV Transform: ARC SINE(SQUARE ROOT(Y))

ANOVA TABLE

| SOURCE | DF | SS | MS | F |
|---|---|---|---|---|
| Between | 1 | 0.043 | 0.043 | 0.988 |
| Within (Error) | 14 | 0.613 | 0.044 | |
| Total | 15 | 0.657 | | |

Critical F value = 4.60 (0.05,1,14)
Since F < Critical F FAIL TO REJECT Ho: All equal

119-4548-4552
File: HA.SURV Transform: ARC SINE(SQUARE ROOT(Y))

EQUAL VARIANCE t-TEST - TABLE 1 OF 2 Ho:Control<Treatment

| GROUP | IDENTIFICATION | TRANSFORMED MEAN | MEAN CALCULATED IN ORIGINAL UNITS | T STAT | SIG |
|---|---|---|---|---|---|
| 1 | Control | 1.225 | 0.875 | | |
| 2 | 041M100710 | 1.121 | 0.788 | 0.994 | |

2 Sample t table value = 1.76 (1 Tailed Value, P=0.05, df=14,1)

UNEQUAL VARIANCE t-TEST Ho:Control<Treatment

| GROUP | IDENTIFICATION | TRANSFORMED MEAN | MEAN CALCULATED IN ORIGINAL UNITS | T STAT | SIG |
|---|---|---|---|---|---|
| 1 | Control | 1.225 | 0.875 | | |
| 2 | 041M100710 | 1.121 | 0.788 | 0.994 | |

2 Sample t table value = 1.78 (1 Tailed Value, P=0.05, df=12,1)

119-4548-4552
File: HA.SURV Transform: ARC SINE(SQUARE ROOT(Y))

EQUAL VARIANCE t-TEST - TABLE 2 OF 2 Ho:Control<Treatment

| GROUP | IDENTIFICATION | NUM OF REPS | Minimum Sig Diff (IN ORIG. UNITS) | % of CONTROL | DIFFERENCE FROM CONTROL |
|---|---|---|---|---|---|
| 1 | Control | 8 | | | |
| 2 | 041M100710 | 8 | 0.141 | 16.1 | 0.087 |

UNEQUAL VARIANCE t-TEST Ho:Control<Treatment

| GROUP | IDENTIFICATION | NUM OF REPS | Minimum Sig Diff (IN ORIG. UNITS) | % of CONTROL | DIFFERENCE FROM CONTROL |
|---|---|---|---|---|---|
| 1 | Control | 8 | | | |
| 2 | 041M100710 | 8 | 0.143 | 16.3 | 0.087 |

119-4548-4552
File: HA.SURV Transform: ARC SINE(SQUARE ROOT(Y))

Shapiro - Wilk's test for normality

D = 0.970

W = 0.735

Critical W (P = 0.05) (n = 16) = 0.887
Critical W (P = 0.01) (n = 16) = 0.844

Data FAIL normality test. Try another transformation.

Warning - The F-test of homogeneity is sensitive to non-normal data and should not be performed.

119-4548-4552
File: HA.SURV Transform: ARC SINE(SQUARE ROOT(Y))

F-Test for equality of two variances

| GROUP | IDENTIFICATION | VARIANCE | F |
|---|---|---|---|
| 1 | Control | 0.029 | |
| 2 | 041M100810 | 0.110 | 3.806 |

Critical F = 8.89 (P=0.01, 7, 7)

Since F <= Critical F, FAIL TO REJECT Ho: Equal Variances.

119-4548-4552
File: HA.SURV Transform: ARC SINE(SQUARE ROOT(Y))

ANOVA TABLE

| SOURCE | DF | SS | MS | F |
|---|---|---|---|---|
| Between | 1 | 0.000 | 0.000 | 0.006 |
| Within (Error) | 14 | 0.970 | 0.069 | |
| Total | 15 | 0.970 | | |

Critical F value = 4.60 (0.05,1,14)
Since F < Critical F FAIL TO REJECT Ho: All equal

119-4548-4552

File: HA.SURV Transform: ARC SINE(SQUARE ROOT(Y))

EQUAL VARIANCE t-TEST - TABLE 1 OF 2 Ho:Control<Treatment

| GROUP | IDENTIFICATION | TRANSFORMED MEAN | MEAN CALCULATED IN ORIGINAL UNITS | T STAT | SIG |
|---|---|---|---|---|---|
| 1 | Control | 1.225 | 0.875 | | |
| 2 | 041M100810 | 1.235 | 0.863 | -0.078 | |

2 Sample t table value = 1.76 (1 Tailed Value, P=0.05, df=14,1)

UNEQUAL VARIANCE t-TEST Ho:Control<Treatment

| GROUP | IDENTIFICATION | TRANSFORMED MEAN | MEAN CALCULATED IN ORIGINAL UNITS | T STAT | SIG |
|---|---|---|---|---|---|
| 1 | Control | 1.225 | 0.875 | | |
| 2 | 041M100810 | 1.235 | 0.863 | -0.078 | |

2 Sample t table value = 1.81 (1 Tailed Value, P=0.05, df=10,1)

119-4548-4552
File: HA.SURV Transform: ARC SINE(SQUARE ROOT(Y))

EQUAL VARIANCE t-TEST - TABLE 2 OF 2 Ho:Control<Treatment

| GROUP | IDENTIFICATION | NUM OF REPS | Minimum Sig Diff (IN ORIG. UNITS) | % of CONTROL | DIFFERENCE FROM CONTROL |
|---|---|---|---|---|---|
| 1 | Control | 8 | | | |
| 2 | 041M100810 | 8 | 0.183 | 21.0 | 0.013 |

UNEQUAL VARIANCE t-TEST Ho:Control<Treatment

| GROUP | IDENTIFICATION | NUM OF REPS | Minimum Sig Diff (IN ORIG. UNITS) | % of CONTROL | DIFFERENCE FROM CONTROL |
|---|---|---|---|---|---|
| 1 | Control | 8 | | | |
| 2 | 041M100810 | 8 | 0.190 | 21.7 | 0.013 |

## *Hyalella azteca* Weight Data

Trac ID 119-4548-~~4553~~ 4552 J 6-11-07

| Replicate # | Tare Weight (g) | Final Weight (g) | Survival # | Difference(g) |
|---|---|---|---|---|
| 1 | 0.03771 | 0.03887 | 10 | 0.00116 |
| 2 | 0.03762 | 0.03959 | 10 | 0.00197 |
| 3 | 0.03816 | 0.03927 | 10 | 0.00111 |
| 4 | 0.03870 | 0.04063 | 10 | 0.00193 |
| 5 | 0.03764 | 0.03818 | 8 | 0.00059 |
| 6 | 0.03789 | 0.03963 | 10 | 0.00174 |
| 7 | 0.03718 | 0.03798 | 10 | 0.00080 |
| 8 | 0.03780 | 0.03990 | 10 | ~~0.008~~ 0.00210 |
| 9 | 0.03779 | 0.03860 | 10 | 0.00081 |
| 10 | 0.03743 | 0.03825 ~~0.03859~~ ① | 10 | 0.00082 |
| 11 | 0.03838 | 0.03918 ~~0.03825~~ ① | 7 | 0.00090 |
| 12 | 0.03807 | 0.04027 | 10 | 0.00220 |
| 13 | 0.03849 | 0.04027 | 10 | 0.00178 |
| 14 | 0.03753 | 0.03920 | 9 | 0.00167 |
| 15 | 0.03764 | 0.03845 | 10 | 0.00081 |
| 16 | 0.03788 | 0.04011 | 10 | 0.00223 |
| 17 | 0.03731 | 0.03796 | 8 | 0.00065 |
| 18 | 0.03687 | 0.03789 | 9 | 0.00102 |
| 19 | 0.03706 | 0.03937 | 10 | 0.00231 |
| 20 | 0.03798 | 0.03880 | 9 | 0.00082 |
| 21 | 0.03818 | 0.04010 | 10 | 0.00192 |
| 22 | 0.03794 | 0.03906 | 10 | 0.00112 |
| 23 | 0.03866 | 0.03926 | 8 | 0.00060 |
| 24 | 0.03738 | 0.03927 | 10 | 0.00189 |
| 25 | 0.03764 | 0.03821 | 10 | 0.00057 |
| 26 | 0.03755 | 0.03982 | 10 | 0.00227 |
| 27 | 0.03754 | 0.03965 | 10 | 0.00211 |
| 28 | 0.03723 | 0.04422 | 5 | 0.00699 |
| 29 | 0.03794 | 0.03828 | 2 | 0.00034 |
| 30 | 0.03737 | 0.03958 | 10 | 0.00221 |
| 31 | 0.03831 | 0.03903 | 8 | 0.00072 |
| 32 | 0.03817 | 0.03969 | 8 | 0.00152 |
| 33 | 0.03787 | 0.03984 | 10 | 0.00197 |
| 34 | 0.03882 | 0.04087 | 10 | 0.00205 |
| 35 | 0.03768 | 0.03880 | 10 | 0.00112 |
| 36 | 0.03712 | 0.03779 | 7 | 0.00067 |
| 37 | 0.03680 | 0.03783 | 5 | 0.00103 |
| 38 | 0.03672 | 0.03844 | 10 | 0.00172 |
| 39 | 0.03751 | 0.03907 | 9 | 0.00156 |
| 40 | 0.03706 | 0.03889 | 10 | 0.00183 |
| 41 | 0.03730 | 0.03798 | 9 | 0.00068 |
| 42 | 0.03734 | 0.03812 | 8 | 0.00078 |
| 43 | 0.03717 | 0.03821 | 8 | 0.00104 |
| 44 | 0.03723 | 0.03948 | 10 | 0.00225 |
| 45 | 0.03725 | 0.03809 | 8 | 0.00084 |
| 46 | 0.03726 | 0.03914 | 9 | 0.00188 |
| 47 | 0.03740 | 0.03900 | 10 | 0.00160 |
| 48 | 0.03771 | 0.03950 | 10 | 0.00179 |

| | Date | Time | Initials |
|---|---|---|---|
| Tare Weight | 11 June 07 | 1205 | J |
| Placed in Oven | 11 June 07 | 1630 | NLP |
| Removed From Oven | 12 June 07 | 0845 | |
| Final Weights | 14 June 07 | 0920 | BF |



① 14 Jun 07 BF

## *H. azteca* Growth Stats (Calculated based on survivors)

| Sample ID( | control | 4548 | 4549 | 4551 | 4550 | 4552 |
|---|---|---|---|---|---|---|
| | | | Weights / replicate | | | |
| Rep. | | | | | | |
| 1 | 0.080 | 0.068 | 0.116 | 0.197 | 0.193 | 0.210 |
| 2 | 0.082 | 0.081 | 0.111 | 0.174 | 0.129 | 0.178 |
| 3 | 0.081 | 0.081 | 0.220 | 0.186 | 0.231 | 0.223 |
| 4 | 0.091 | 0.075 | 0.113 | 0.189 | 0.227 | 0.192 |
| 5 | 0.057 | 0.138 | 0.112 | 0.197 | 0.221 | 0.211 |
| 6 | 0.096 | 0.090 | 0.170 | 0.172 | 0.205 | 0.190 |
| 7 | 0.098 | 0.206 | 0.112 | 0.173 | 0.160 | 0.183 |
| 8 | 0.105 | 0.076 | 0.130 | 0.209 | 0.179 | 0.225 |
| MEAN | 0.086 | 0.102 | 0.136 | 0.193 | 0.187 | 0.202 |
| STD | 0.01 | 0.04 | 0.04 | 0.01 | 0.03 | 0.02 |
| CV | 16.0 | 43.6 | 27.3 | 06.5 | 17.9 | 08.4 |

| Sample ID( | control | 4548 | 4549 | 4551 | 4550 | 4552 |
|---|---|---|---|---|---|---|
| | | | Weights / replicate(Total) | | | |
| Rep. | | | | | | |
| 1 | 0.80 | 0.54 | 1.16 | 1.97 | 1.93 | 2.10 |
| 2 | 0.82 | 0.81 | 1.11 | 1.74 | 0.90 | 1.78 |
| 3 | 0.65 | 0.81 | 2.20 | 1.67 | 2.31 | 2.23 |
| 4 | 0.82 | 0.60 | 1.02 | 1.89 | 2.27 | 1.92 |
| 5 | 0.57 | 0.69 | 1.12 | 1.97 | 2.21 | 2.11 |
| 6 | 0.67 | 0.72 | 0.34 | 1.72 | 2.05 | 1.52 |
| 7 | 0.78 | 1.03 | 1.12 | 1.56 | 1.60 | 1.83 |
| 8 | 0.84 | 0.68 | 1.04 | 1.88 | 1.79 | 2.25 |

## *H. azteca* Growth Stats (Calculated based on original number)

| Sample ID( | control | 4548 | 4549 | 4551 | 4550 | 4552 |
|---|---|---|---|---|---|---|
| | | | Weights / replicate | | | |
| Rep. | | | | | | |
| 1 | 0.080 | 0.054 | 0.116 | 0.193 | 0.197 | 0.210 |
| 2 | 0.082 | 0.081 | 0.111 | 0.090 | 0.174 | 0.178 |
| 3 | 0.065 | 0.081 | 0.220 | 0.231 | 0.167 | 0.223 |
| 4 | 0.082 | 0.060 | 0.102 | 0.227 | 0.189 | 0.192 |
| 5 | 0.057 | 0.069 | 0.112 | 0.221 | 0.197 | 0.211 |
| 6 | 0.067 | 0.072 | 0.034 | 0.205 | 0.172 | 0.152 |
| 7 | 0.078 | 0.103 | 0.112 | 0.160 | 0.156 | 0.183 |
| 8 | 0.084 | 0.068 | 0.104 | 0.179 | 0.188 | 0.225 |
| MEAN | 0.074 | 0.074 | 0.114 | 0.188 | 0.180 | 0.197 |
| STD | 0.01 | 0.01 | 0.05 | 0.04 | 0.01 | 0.02 |
| CV | 12.6 | 19.2 | 41.5 | 23.2 | 07.8 | 12.0 |

| Sample ID( | control | 4548 | 4549 | 4551 | 4550 | 4552 |
|---|---|---|---|---|---|---|
| | | | Weights / replicate(Total) | | | |
| Rep. | | | | | | |
| 1 | 0.80 | 0.54 | 1.16 | 1.97 | 1.93 | 2.10 |
| 2 | 0.82 | 0.81 | 1.11 | 1.74 | 0.90 | 1.78 |
| 3 | 0.65 | 0.81 | 2.20 | 1.67 | 2.31 | 2.23 |
| 4 | 0.82 | 0.60 | 1.02 | 1.89 | 2.27 | 1.92 |
| 5 | 0.57 | 0.69 | 1.12 | 1.97 | 2.21 | 2.11 |
| 6 | 0.67 | 0.72 | 0.34 | 1.72 | 2.05 | 1.52 |
| 7 | 0.78 | 1.03 | 1.12 | 1.56 | 1.60 | 1.83 |
| 8 | 0.84 | 0.68 | 1.04 | 1.88 | 1.79 | 2.25 |

## *Hyalella azteca* Breakdown Sheet

Trac ID H9-4548-~~4553~~ 4552 6-11-07

Day 0 1 Jun 07

Culture ID HA-07-02

| Date | Initials | Jar # | Live | Dead |
|---|---|---|---|---|
| 11 Jun 07 1340-1630 | BF | 1 | 10 | 0 |
| | | 2 | 10 | 0 |
| | BF | 3 | 10 | 0 |
| | BF | 4 | 10 | 0 |
| | BF | 5 | 8 | 2 |
| | NLP | 6 | 10 | 0 |
| | NLP | 7 | 10 | 0 |
| | NLP | 8 | 10 | 0 |
| | NLP | 9 | 10 | 0 |
| | NLP | 10 | 10 | 0 |
| | BF | 11 | ~~10~~ 7 NLP | 3 |
| | BF | 12 | 10 | 0 |
| | | 13 | 10 | 0 |
| | | 14 | 9 BF | 1 |
| | | 15 | 10 | 0 |
| | BF | 16 | 10 | 0 |
| | | 17 | 8 BF | 2 |
| | BF | 18 | 9 NLP | 1 |
| | NLP | 19 | 10 | 0 |
| | BF | 20 | 9 NLP | 1 |
| | BF | 21 | 10 | 0 |
| | BF | 22 | ~~9~~ 10 NLP | 0 |
| | NLP | 23 | 8 | 2 |
| | BF | 24 | 10 | 0 |

Length Measurements

Mean Length (mm) NA

① 11 Jun 07 BF
② 11 Jun 07 NLP

## *Hyalella azteca* Breakdown Sheet

Trac ID 119-4548-~~4553~~ 4552 J 6-11-07

Day 0 1 Jun 07

Culture ID HA-07-02

| Date | Initials | Jar # | Live | Dead |
|---|---|---|---|---|
| 11 Jun 07 1340-1630 | J | 25 | 10 | 0 |
| | BF | 26 | 10 | 0 |
| | BF | 27 | 10 | 0 |
| | BF | 28 | 5 NLP | 5 |
| | BF | 29 | 2 NLP | 8 |
| | BF | 30 | 10 | 0 |
| | NLP | 31 | 8 BF | 2 |
| | NLP | 32 | 8 | 2 BF |
| | J | 33 | 10 | 0 |
| | BF | 34 | 10 | 0 |
| | NLP | 35 | 10 | 0 |
| | J | 36 | 7 BF | 3 |
| | BF | 37 | 5 J BF(1) | 5 |
| | BF | 38 | 10 | 0 |
| | BF | 39 | 9 NLP | 1 |
| | BF | 40 | 10 | 0 |
| | NLP | 41 | 9 J | 1 |
| | J | 42 | 8 NLP | 2 |
| | J | 43 | 8 NLP | 2 |
| | J | 44 | 10 | 0 |
| | J | 45 | 8 BF | 2 |
| | BF | 46 | 9 NLP | 1 |
| | J | 47 | 10 | 0 |
| | J | 48 | 10 | 0 |

(1) BF 11 Jun 07

Length Measurements

Mean Length (mm) NA

## Daily Observations

***Hyalella azteca***

| Jar # | *Loaded* | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 | Day 7 | Day 8 | Day 9 | Day 10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | ✓ 10 | $F_1$ | $F_1$ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 2 | ✓ 10 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 3 | ✓ 10 | ✓ | $F_1$ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 4 | ✓ 10 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 5 | ✓ 10 | $F_2$ | $F_1$ | $F_1$ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 6 | ✓ 10 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 7 | ✓ 10 | $F_1$ | ✓ | ✓ | ✓ | ✓ | ✓ | $F_1$ | ✓ | $F_1$ | ✓ |
| 8 | ✓ 10 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 9 | ✓ 10 | $F_2$ | $F_3$ | $F_3$ | $F_3$ | ✓ | $F_1$ | ✓ | ✓ | ✓ | ✓ |
| 10 | ✓ 10 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 11 | ✓ 10 | ✓ | ✓ | ✓ | ✓ | ✓ | $F_1$ | ✓ | ✓ | ✓ | ✓ |
| 12 | ✓ 10 | ✓ | ✓ | $F_1$ | $F_1$ | $F_1$ | ✓ | ✓ | ✓ | $F_1$ | ✓ |
| 13 | ✓ 10 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 14 | ✓ 10 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 15 | ✓ 10 | ✓ | $F_1$ | $F_2$ | ✓ | $F_1$ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 16 | ✓ 10 | ✓ | $F_1$ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 17 | ✓ 10 | $F_1$ | ✓ | ✓ | ✓ | $F_1$ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 18 | ✓ 10 | $F_2$ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 19 | ✓ 10 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 20 | ✓ 10 | ✓ | ✓ | ✓ | ✓ | $F_1$ | ✓ | $F_1$ | ✓ | ✓ | ✓ |
| 21 | ✓ 10 | ✓ | $F_1$ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 22 | ✓ 10 | ✓ | ✓ | ✓ | $F_1$ | ✓ | $F_1$ | ✓ | ✓ | ✓ | ✓ |
| 23 | ✓ 10 | ✓ | $F_2$ | $F_1$ | $F_1$ | $F_1$ | ✓ | $F_1$ | ✓ | ✓ | ✓ |
| 24 | ✓ 10 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Initials | NLP | NLP | NLP | NLP | BF | NLP | BF | BF | BF | BF | BF |

D=dead amphipod R=amphipod removed S=amphipod on surface of water F=amphipod floating

*All jars fed daily regimen of 1 mL YCT

Date Loaded 1 Jun 07
Time Loaded 1325
Initials NLP

## Daily Observations

***Hyalella azteca***

| Jar # | *Loaded* | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 | Day 7 | Day 8 | Day 9 | Day 10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 25 | ✓ 10 | $F_2$ | $F_1$ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 26 | ✓ 10 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 27 | ✓ 10 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 28 | ✓ 10 | ✓ | $F_1$ | $F_1$ | $F_1$ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 29 | ✓ 10 | $F_5$ | $F_1 S_2 DR_4$ | $F_1$ | $F_1$ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 30 | ✓ 10 | ✓ | ✓ | ✓ | $F_1$ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 31 | ✓ 10 | ✓ | $F_3$ | $F_1$ | $F_1$ | $F_2$ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 32 | ✓ 10 | $F_1$ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 33 | ✓ 10 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 34 | ✓ 10 | $F_1$ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 35 | ✓ 10 | ✓ | ✓ | ✓ | ✓ | $F_1$ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 36 | ✓ 10 | $F_3$ | ✓ | $F_1$ | ✓ | $F_1$ | ✓ | $F_1$ | $F_1$ | $F_1$ | ✓ |
| 37 | ✓ 10 | ✓ | $F_2$ | $F_2 DR_1$ | $F_1$ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 38 | ✓ 10 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 39 | ✓ 10 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 40 | ✓ 10 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 41 | ✓ 10 | $F_1$ | $F_2$ | $F_3$ | $F_2$ | $F_3$ | $F_1$ | ✓ | ✓ | ✓ | $F_1$ |
| 42 | ✓ 10 | $F_2$ | $F_1$ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 43 | ✓ 10 | $S_1$ | $F_1$ | $F_1$ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 44 | ✓ 10 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 45 | ✓ 10 | ✓ | ✓ | $F_1$ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 46 | ✓ 10 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 47 | ✓ 10 | $F_1$ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 48 | ✓ 10 | $F_1$ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Initials | NLP | NLP | NLP | NLP | BF | NLP | BF | BF | BF | BF | BF |

D=dead amphipod R=amphipod removed S=amphipod on surface of water F=amphipod floating

*All jars fed daily regimen of 1 mL YCT

Date Loaded 1 Jun 07
Time Loaded 1325
Initials NLP

**Physical Data Sheet**
*Hyalella azteca*

Trac ID 119-4548-~~4553~~ 4552 / 6-11-07
Sponsor EnSafe Inc.

Start Date/End Date: 1 June 07 / 11 June 07
Culture ID HA-07-02

| Sample Information | | pH | | Conductivity | | Hardness | | Alkalinity | | Ammonia (mg/L) | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample # | Jar # | Day 0 | Day 10 | Day 0 | Day 10 | Day 0 | Day 10 | Day 0 | Day 10 | Day 0 | Day 10 |
| CONTROL | 7 | ~~1658~~ 6/1/06 BF 8.0 | 6.9 | 1662 | 347 | 208 | 92 | ① ~~76~~ Col | ~~6892~~ BF 6/11/07 | 1.0 | 1.0 |
| 4548 041M100710 | 23 | 7.5 | 6.7 | 419 | 309 | 113 ~~76~~ ② | 84 | 69 | ~~608~~ BF 6/11/07 | 0.8 | 0.7 |
| 4549 041M100810 | 3 | 7.6 | 7.2 | 486 | 349 | 140 | 88 | 75 | 94 | 0.6 | 0.5 |
| ~~4550~~ 4551 041M101010 | 47 | 7.7 | 7.1 | 422 | 308 | 112 | 84 | 79 | 77 | 0.4 | 0.3 |
| 4550 041M100910 | 33 | 7.7 | 7.1 | 398 | 304 | 116 | 92 | 78 | 78 | 0.5 | 0.4 |
| 4552 041N101010 | 40 | 7.8 | 7.5 | 437 | 320 | 116 | 80 | 86 | 85 | 0.5 | 0.3 |
| Initials | | BF | BF | BF | BF | EH | BF | EH | BF | | |
| QA | | | | | | | | | | | |

| | Date | Time | By |
|---|---|---|---|
| Tare Weight | 1 Jun 07 | 1020 | NLP |
| Put in Oven | 1 Jun 07 | 1040 | BF |
| Removed From Oven | 2 Jun 07 | 1345 | NLP |
| Final Weight | 2 Jun 07 | 1705 | NLP |

| Weight Boat (g) | Weigh Boat +amphipods | Total Weight (g) |
|---|---|---|
| 0.9226 | 0.9232 | 0.0006 |
| | 0.92324 | 0.00064 |

① EH 1 June 07
② EH 1 June 07

## Daily Physical Data - Temperature

*Hyalella azteca*

**Trac ID** 119-4548 ~~4553~~ 4552 6-11-07

**Sponsor** EnSafe Inc.

**Day 0** 1 Jun 07

**Culture ID** HA-07-02

Temp Range 23 ± 1 Degree Celsius

| *Sample #* | *Jar #* | Day 0 | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 | Day 7 | Day 8 | Day 9 | Day 10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Control | 7 | 22.7 | 23.0 | 23.2 | 23.1 | 23.6 | 23.4 | 23.8 | 24.0 | 23.9 | 24.0 | 24.0 |
| 041M100710 | 23 | 22.8 | 23.1 | 23.4 | 23.1 | 23.6 | 23.5 | 23.9 | 23.9 | 23.7 | 23.9 | 24.0 |
| 041M100810 | 3 | 22.7 | 23.2 | 23.2 | 23.1 | 23.7 | 23.4 | ~~3~~ 23.8 ① | 24.0 | 24.0 | 23.9 | 23.9 |
| 041M101010 | 47 | 22.6 | 23.0 | 23.1 | 23.0 | 23.5 | 23.4 | 23.2 | 23.8 | 23.7 | 23.8 | 23.9 |
| 041M100910 | 33 | 22.6 | 23.1 | 23.3 | 23.1 | 23.7 | 23.5 | 24.0 | 23.7 | 23.7 | 23.9 | 24.0 |
| 041N101010 | 40 | 22.8 | 23.2 | 23.4 | 23.2 | 23.7 | 23.6 | 23.8 | 24.0 | 23.7 | 23.9 | 24.0 |
| Initials | | BF | NLP | NLP | NLP | BF | NLP | BF | BF | BF | BF | BF |
| Prep # | | 2084 | 2084 | 2084 | 2084 | 2092 | 2092 | 2092 | 2092 | 2092 | 2092 | |
| QA | | | | | | | | | | | | |

① 7 Jun 07 BF

**Daily Physical Data - Dissolved Oxygen**
***Hyalella azteca***

**Trac ID** 119-4548 ~~4553~~ 4552 / 6-11-07
**Sponsor** Ensafe Inc.

**Day 0** 1 Jun 07
**Culture ID** HA-07-02

| *Sample #* | *Jar #* | Day 0 | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 | Day 7 | Day 8 | Day 9 | Day 10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Control | 7 | 7.8 | 8.3 | 8.2 | 7.8 | 7.7 | 7.9 | 8.0 | 8.2 | 8.2 | 8.0 | 8.3 |
| 041M100710 | 23 | 7.3 | 8.2 | 8.0 | 7.7 | 6.7 | ~~7.7~~ 6.7 ① | 6.7 | 6.7 | 7.1 | 7.0 | 7.2 |
| 041M100810 | 3 | 7.5 | 8.3 | 8.2 | 7.9 | 7.3 | 7.2 | 7.3 | 7.4 | 7.2 | 7.3 | 7.2 |
| 041M101010 | 47 | 7.5 | 8.2 | 8.0 | 8.0 | 7.5 | 7.2 | 7.4 | 7.2 | 7.3 | 7.2 | 7.2 |
| 041M100910 | 33 | 7.2 | 8.1 | 8.0 | 8.0 | 7.3 | 7.3 | 7.4 | 7.5 | 7.5 | 7.4 | 7.1 |
| 041N101010 | 40 | 7.3 | 8.1 | 7.9 | 7.7 | 7.2 | 7.1 | 7.4 | 7.4 | 7.4 | 7.2 | 7.1 |
| Initials | | BF | NLP | NLP | NLP | BF | NLP | BF | BF | BF | BF | BF |
| QA | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |

① 6 Jun 07 NLP

DATE: 01 June 07 TIME: 1000 CLIENT#: 119 TECHNICIAN: f

4548-4552

| Standard Concentration (mg/L) | Log Transformed (y) | mV (x) |
|---|---|---|
| 0.1 | -1 | |
| 1.0 | 0 | -22.9 |
| 10.0 | 1 | -76.6 53.7 |
| 100.0 | 2 | -134.4 57.8 |

$\bar{x} = 55.8$

a = -0.39
b = -0.01
r = -0.99

Ammonia Analysis (y = mg/l total ammonia) By SM 4500 $NH_3$-F
$y^x$ = Log Base 10

| ID | ‰ | pH | °C | mV | $y^x$ | y |
|---|---|---|---|---|---|---|
| Control | | 8.0 | 20 | -22.0 | -0.003 | 1.0 |
| 4548 | | 7.5 | 20 | -16.4 | -0.10 | 0.8 |
| 4549 | | 7.6 | 20 | -11.6 | -0.19 | 0.6 |
| 4550 | | 7.7 | 20 | -7.1 | -0.27 | 0.5 |
| 4551 | | 7.7 | 20 | 1.7 | -0.43 | 0.4 |
| 4552 | | 7.8 | 20 | -7.1 | -0.27 | 0.5 |
| | | | | | | |
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Ammonia

DATE: 11 June 07 TIME: 1140 CLIENT#: 119 TECHNICIAN: [illegible]

4548-4552

| Standard Concentration (mg/L) | Log Transformed (y) | mV (x) | |
|---|---|---|---|
| 0.1 | -1 | 5 min 51.0 | Ready 59.5 |
| 1.0 | 0 | 1 min -14.1 | -22.5 |
| 10.0 | 1 | " -81.8 | " -82.3 |
| 100.0 | 2 | " -133.2 | " -136.3 |

59.8
54.0
$\bar{x} = 56.9$

Ammonia Analysis (y = mg/l total ammonia) By SM 4500 $NH_3$-F
$y^x$ = Log Base 10

a = -0.41
b = -0.01
r = -0.99

| ID | ‰ | pH | °C | mV | $y^x$ | y |
|---|---|---|---|---|---|---|
| Control | | 6.9 | 20 | -22.9 | -0.009 | ~~1.0~~ 1.0 |
| 4548 | | 6.7 | 20 | -12.7 | -0.19 | 0.7 |
| 4549 | | 7.2 | 20 | -6.3 | -0.30 | 0.5 |
| 4550 | | 7.1 | 20 | 1.9 | -0.44 | 0.4 |
| 4551 | | 7.1 | 20 | 6.4 | -0.52 | 0.3 |
| 4552 | | 7.5 | 20 | 11.2 | -0.61 | 0.3 |
| | | | | | | |
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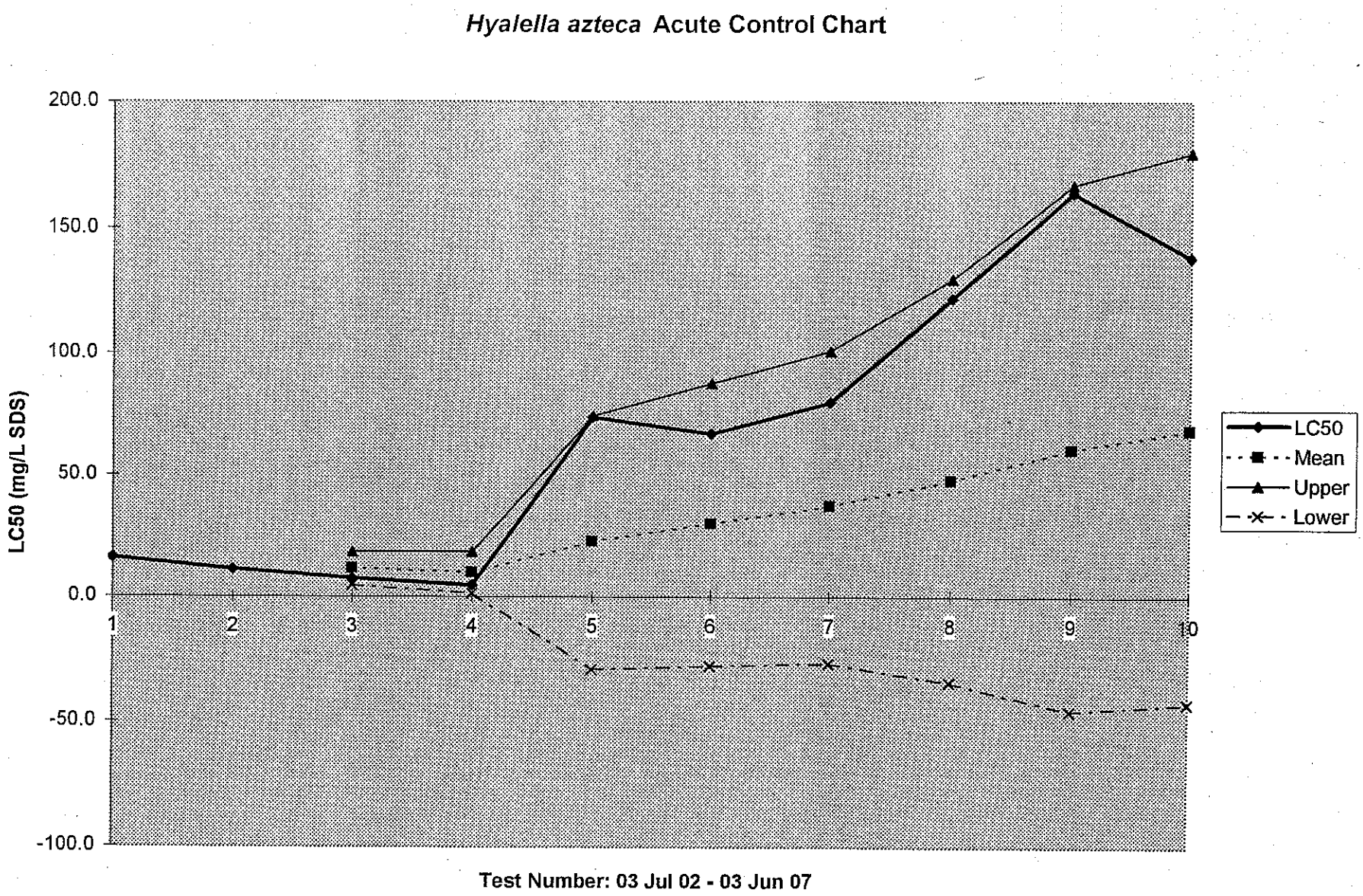
Ammonia

10 . 20

# APPENDIX B

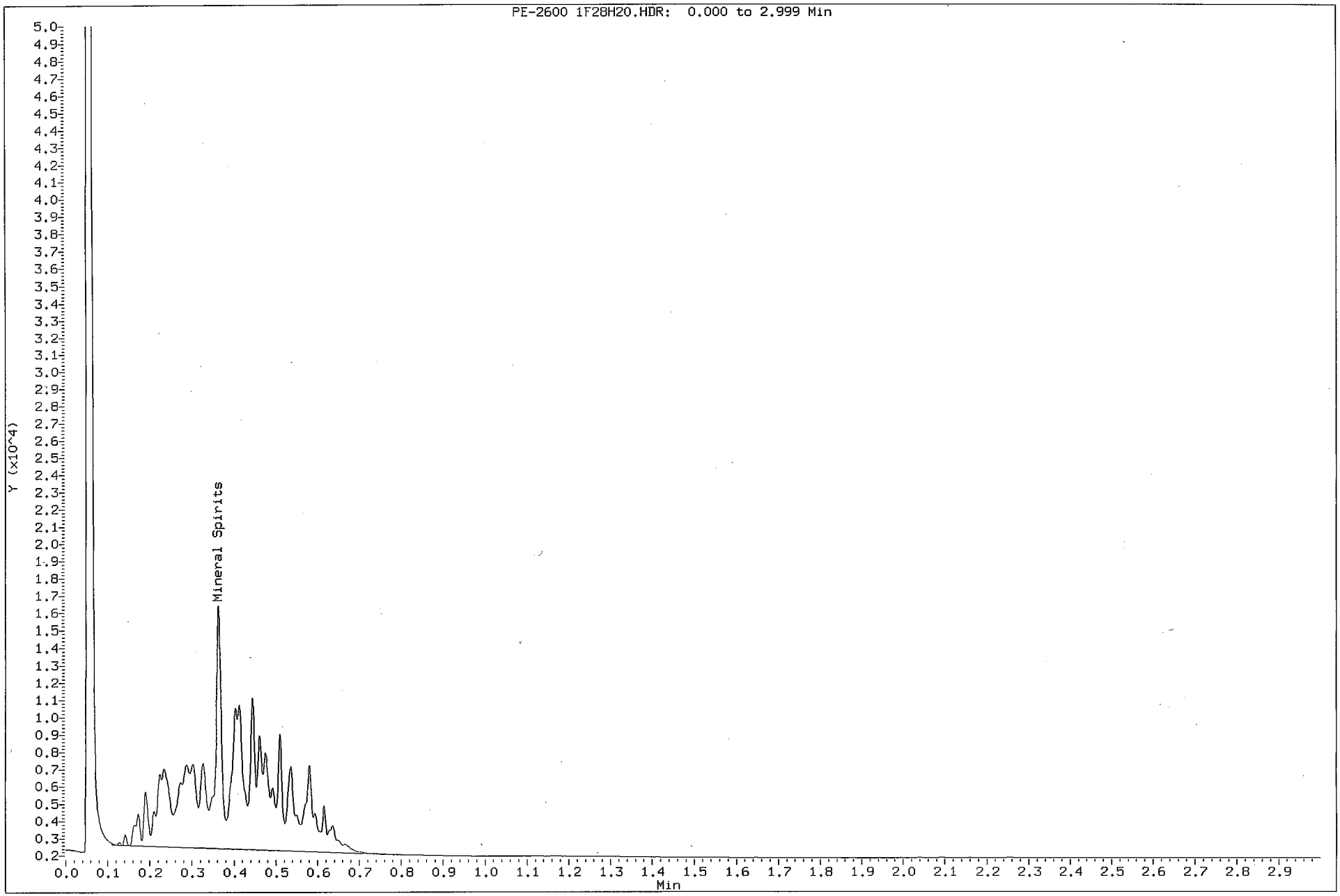

*Hyalella azteca* Acute Control Chart
200.0
150.0
100.0
50.0
0.0
-50.0
-100.0
LC50 (mg/L SDS)
1
2
3
4
5
6
7
8
9
10
LC50
Mean
Upper
Lower
Test Number: 03 Jul 02 - 03 Jun 07

| *Hyalella azteca* 48 Hour Quality Assurance Reference Toxicity Test With SDS | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Date (Test #) | LC50 | Mean | Upper | Lower | | | | |
| 01-03 Jul 02 | 16.0 | | | | | | | |
| 14-16 Jul 02 | 11.3 | | | | | | | |
| 21-23 Jul 02 | 7.6 | 11.6 | 18.5 | 4.8 | | | | |
| 01-03 Oct 03 | 4.7 | 9.9 | 18.3 | 1.5 | | | | |
| `6-18 Apr 04 | 73.9 | 22.7 | 74.4 | -29.1 | | | | |
| 03-05 May 04 | 67.3 | 30.1 | 87.9 | -27.7 | | | | |
| 28-30 May 04 | 80.0 | 37.2 | 101.1 | -26.6 | | | | |
| 02-04 Jan 07 | 122.4 | 47.9 | 130.0 | -34.2 | | | | |
| 09-11 Jan 07 | 164.2 | 60.8 | 167.3 | -45.7 | | | | |
| 01-03 Jun 07 | 138.6 | 68.6 | 179.9 | -42.7 | | | | |

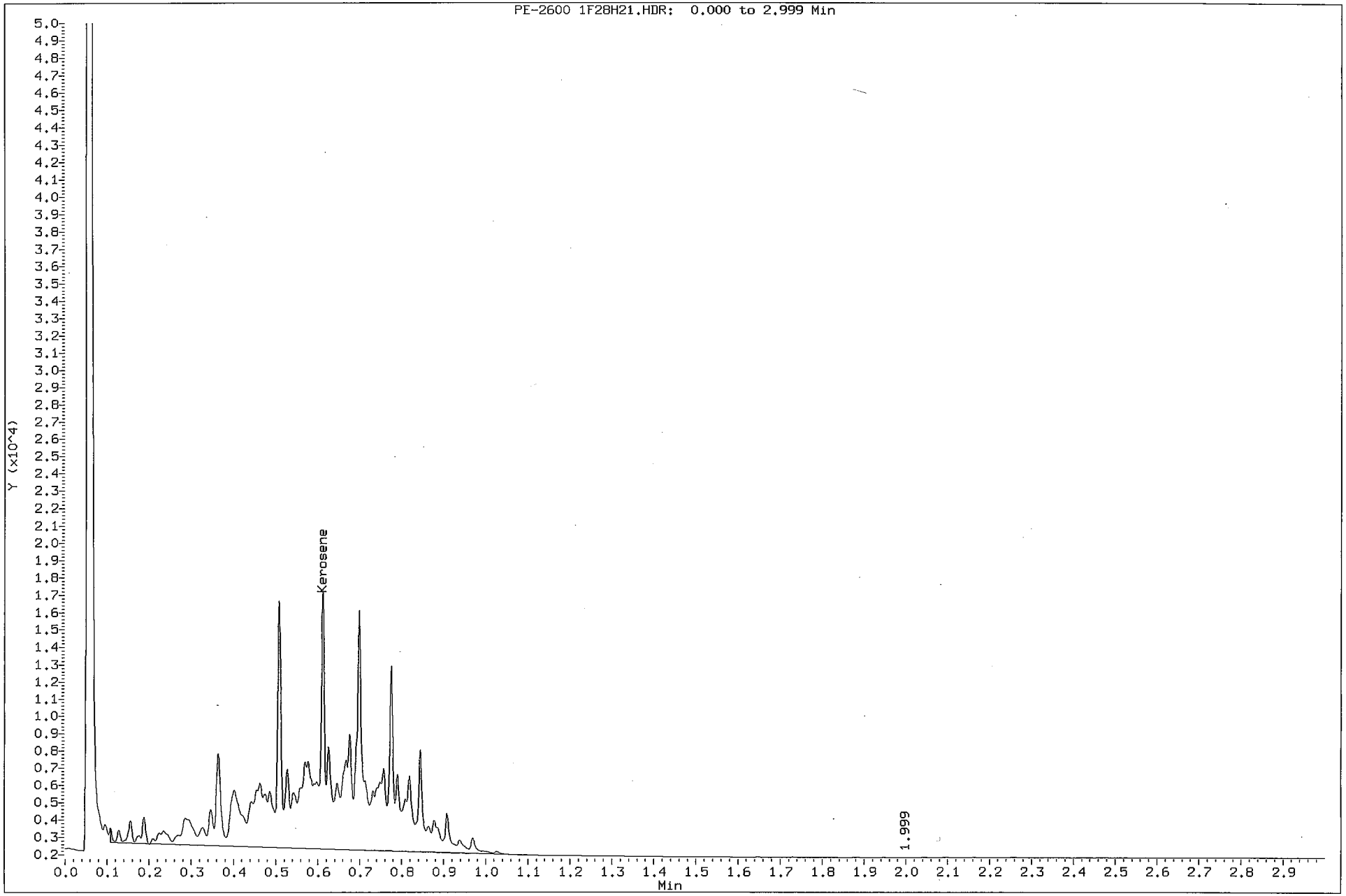
**Attachment D**

**FL-PRO Chromatograms and Standards**

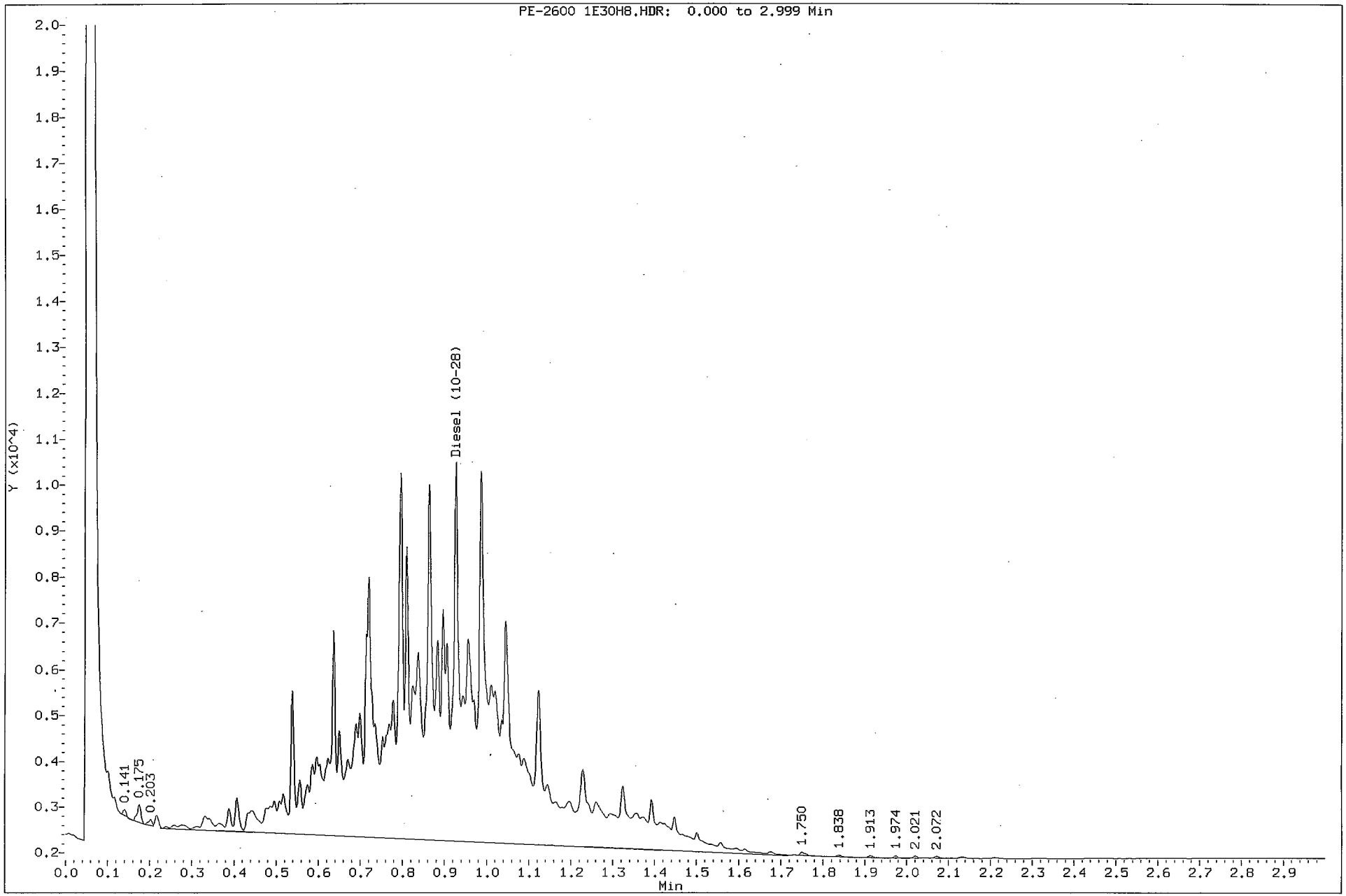
Data File: \\Talsvr05\chem\SG\TSGHFID1.i\2HF28G.b\1F28H20.d/1F28H20.HDR
Injection Date: 28-JUN-2007 16:55
Instrument: TSGHFID1.i
Client Sample ID: Min. Spts.1000ug/ml



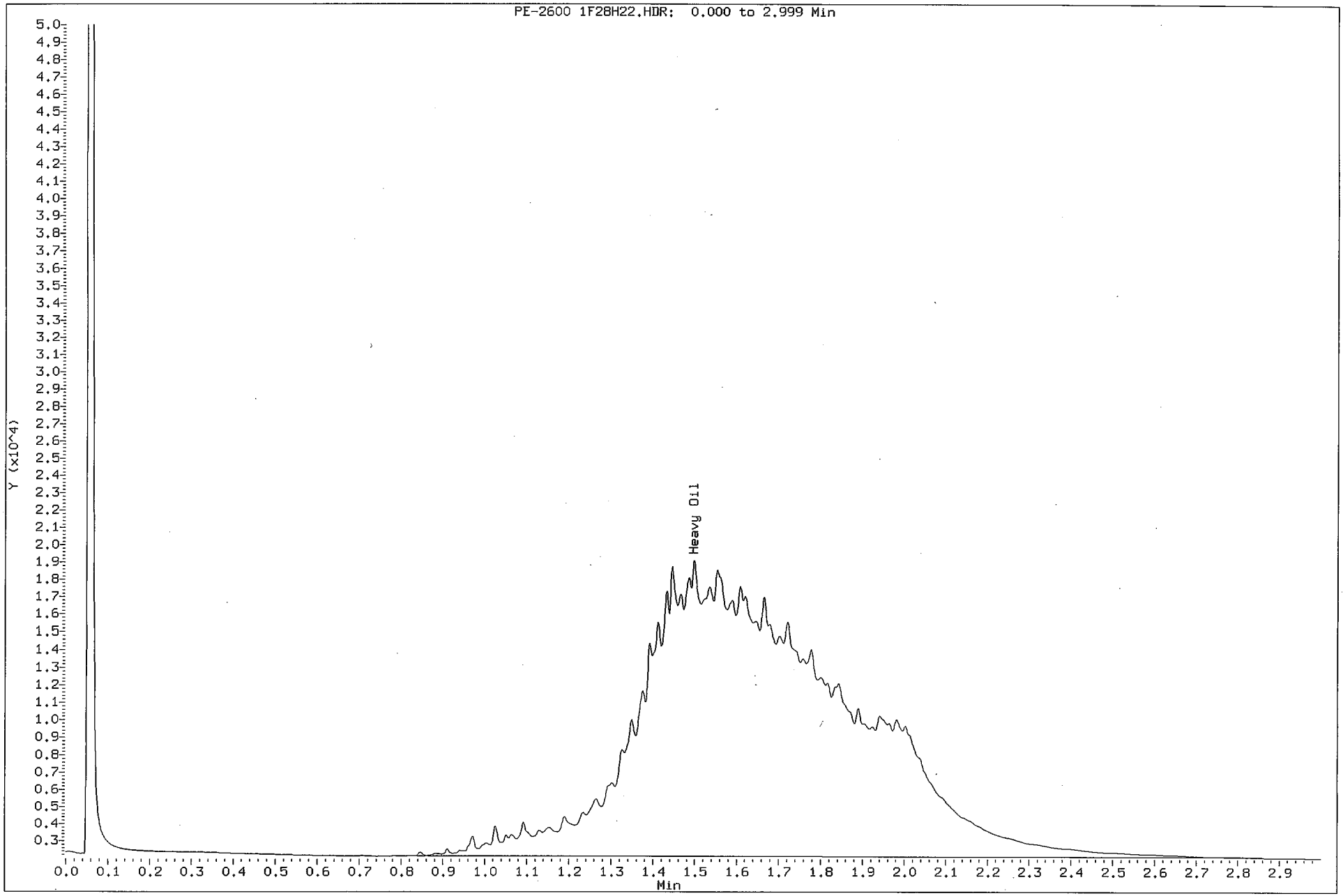
Data File: \\Talsvr05\chem\SG\TSGHFID1.i\2HF28G.b\1F28H21.d/1F28H21.HDR
Injection Date: 28-JUN-2007 17:04
Instrument: TSGHFID1.i
Client Sample ID: Kerosene 1000ug/ml



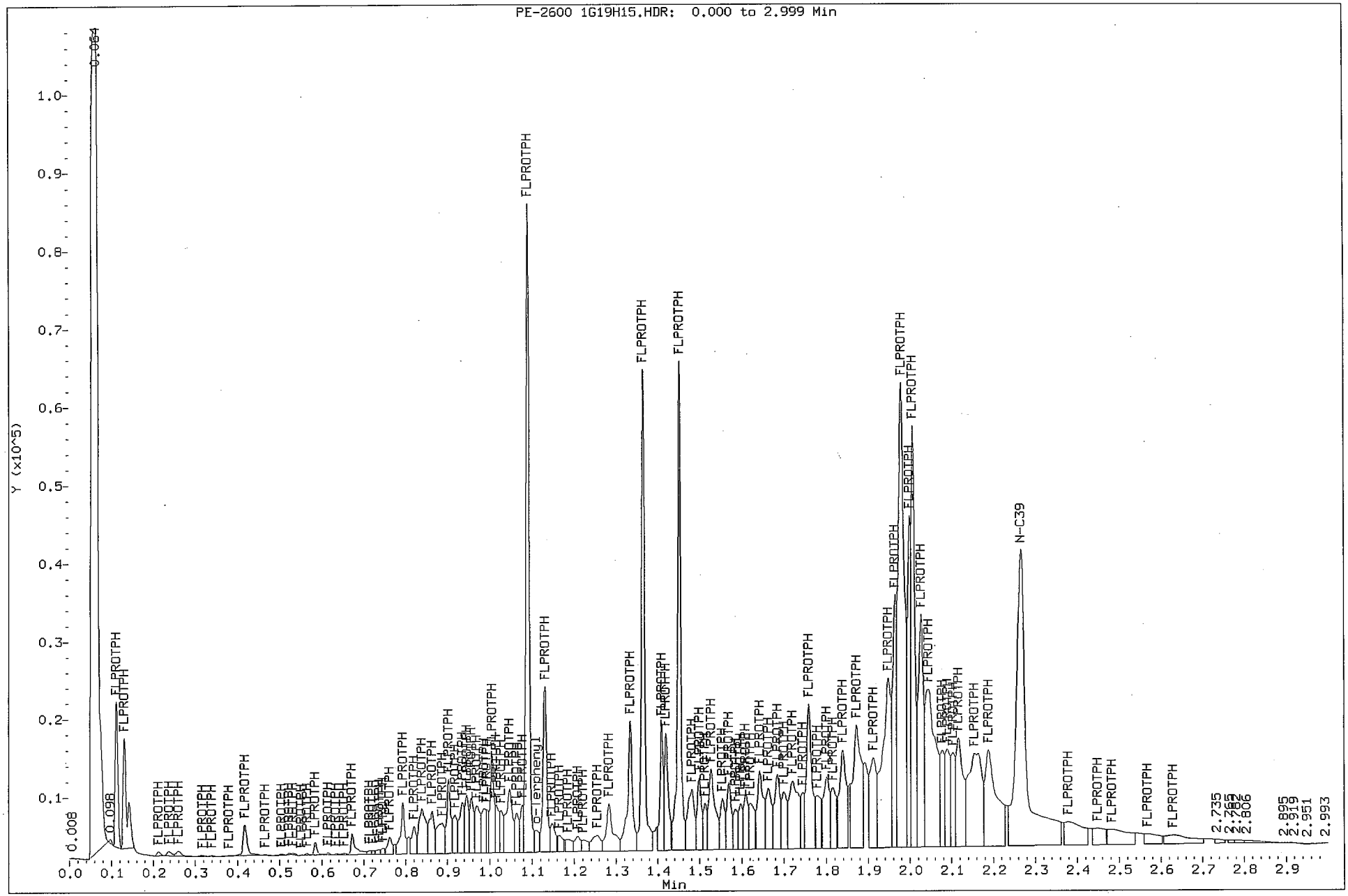
Data File: \\Talsvr05\chem\SG\TSGHFID1.i\1HE30G.b\1E30H8.d/1E30H8.HDR
Injection Date: 30-MAY-2007 09:46
Instrument: TSGHFID1.i
Client Sample ID:



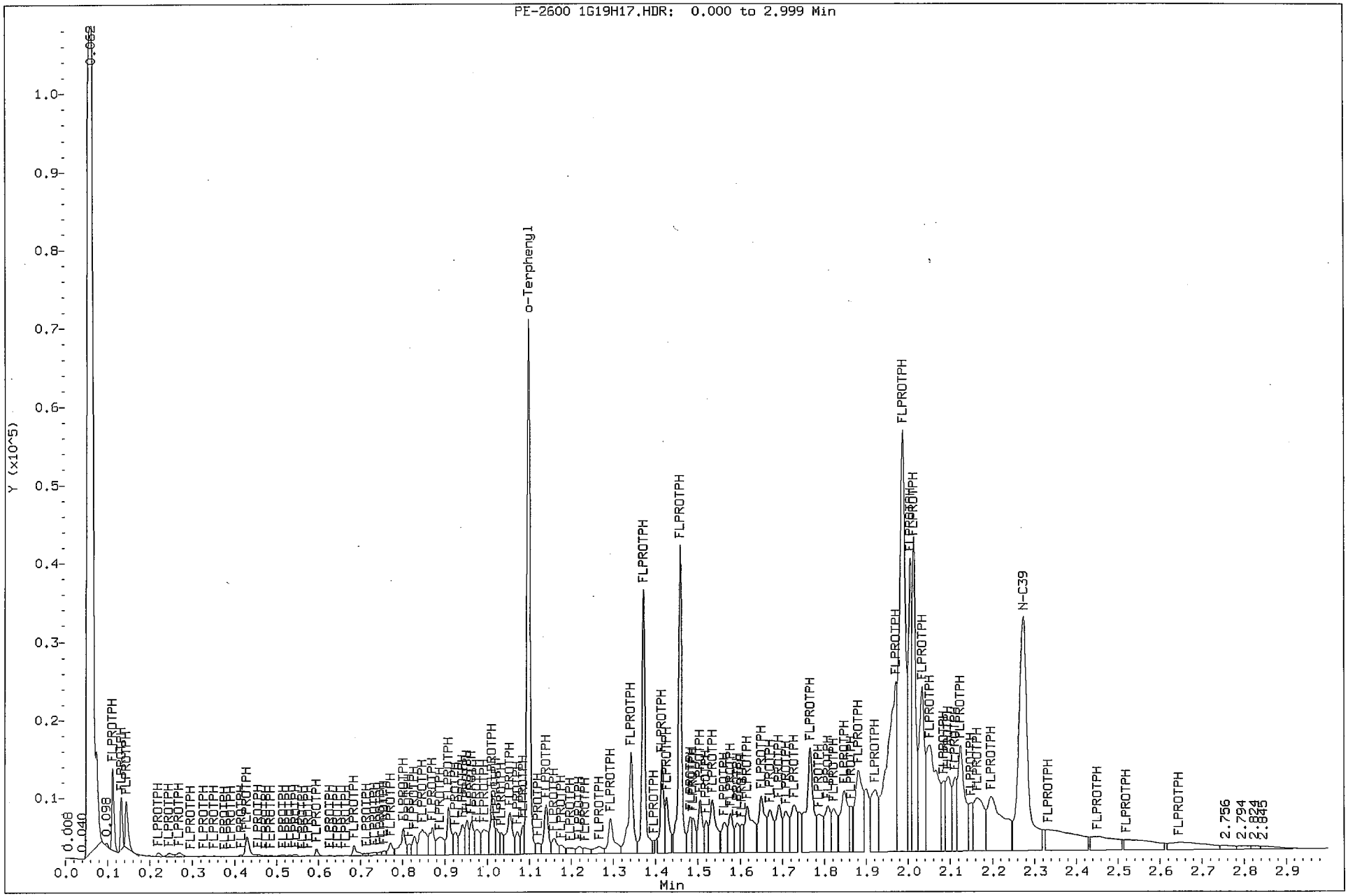
Data File: \\Talsvr05\chem\SG\TSGHFID1.i\2HF28G.b\1F28H22.d/1F28H22.HDR
Injection Date: 28-JUN-2007 17:13
Instrument: TSGHFID1.i
Client Sample ID: Heavy Oil 5000ug/ml



Data File: \\Talsvr05\chem\SG\TSGHFID1.i\1HG18G.b\1G19H15.d/1G19H15.HDR
Injection Date: 19-JUL-2007 12:40
Instrument: TSGHFID1.i
Client Sample ID: 68027062B1A



Data File: \\Talsvr05\chem\SG\TSGHFID1.i\1HG18G.b\1G19H17.d/1G19H17.HDR
Injection Date: 19-JUL-2007 12:58
Instrument: TSGHFID1.i
Client Sample ID: 68027062B2A



Data File: \\Talsvr05\chem\SG\TSGHFID1.i\1HF06G.b\1F06H20.d/1F06H20.HDR
Injection Date: 06-JUN-2007 13:39
Instrument: TSGHFID1.i
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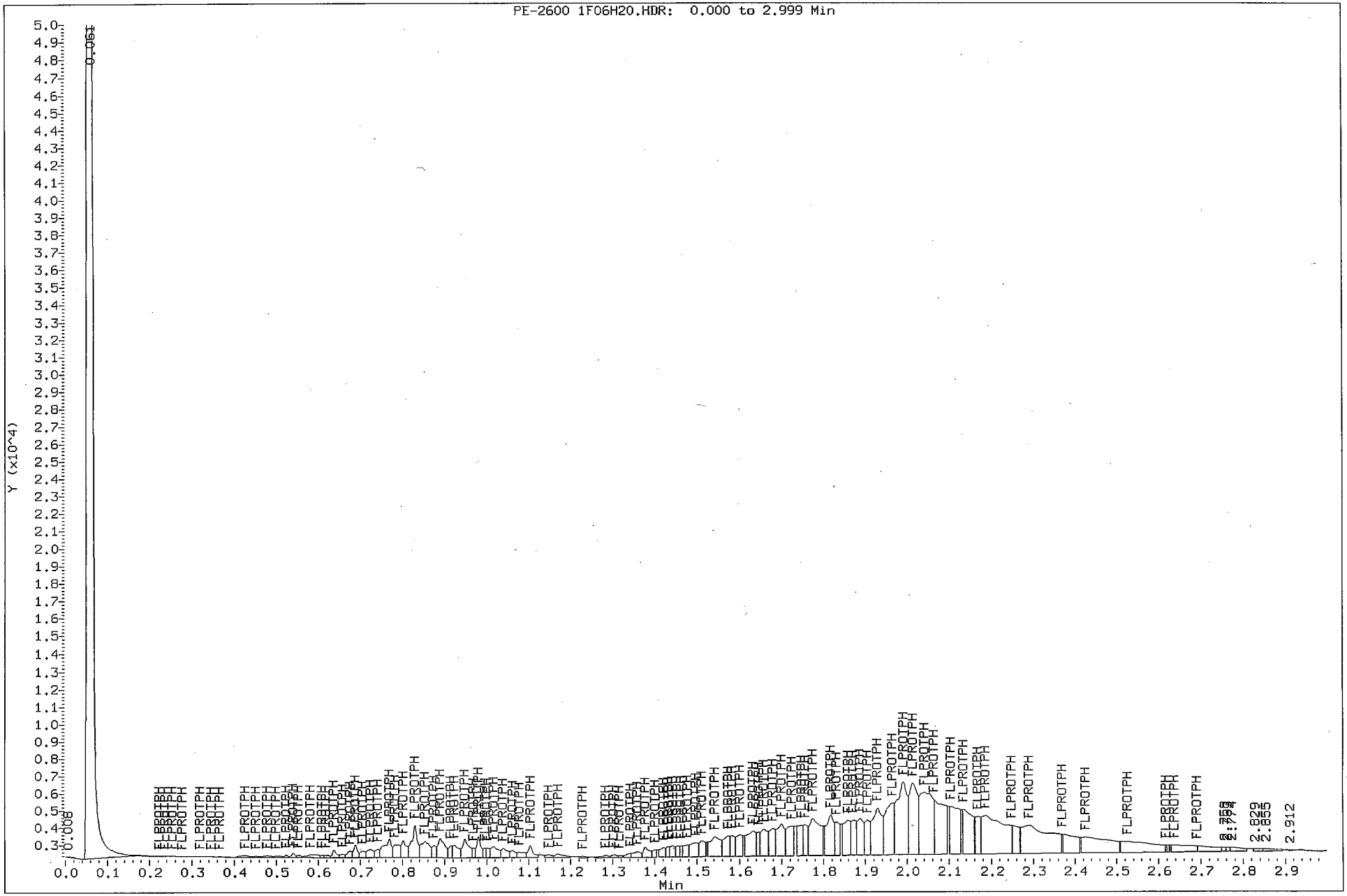

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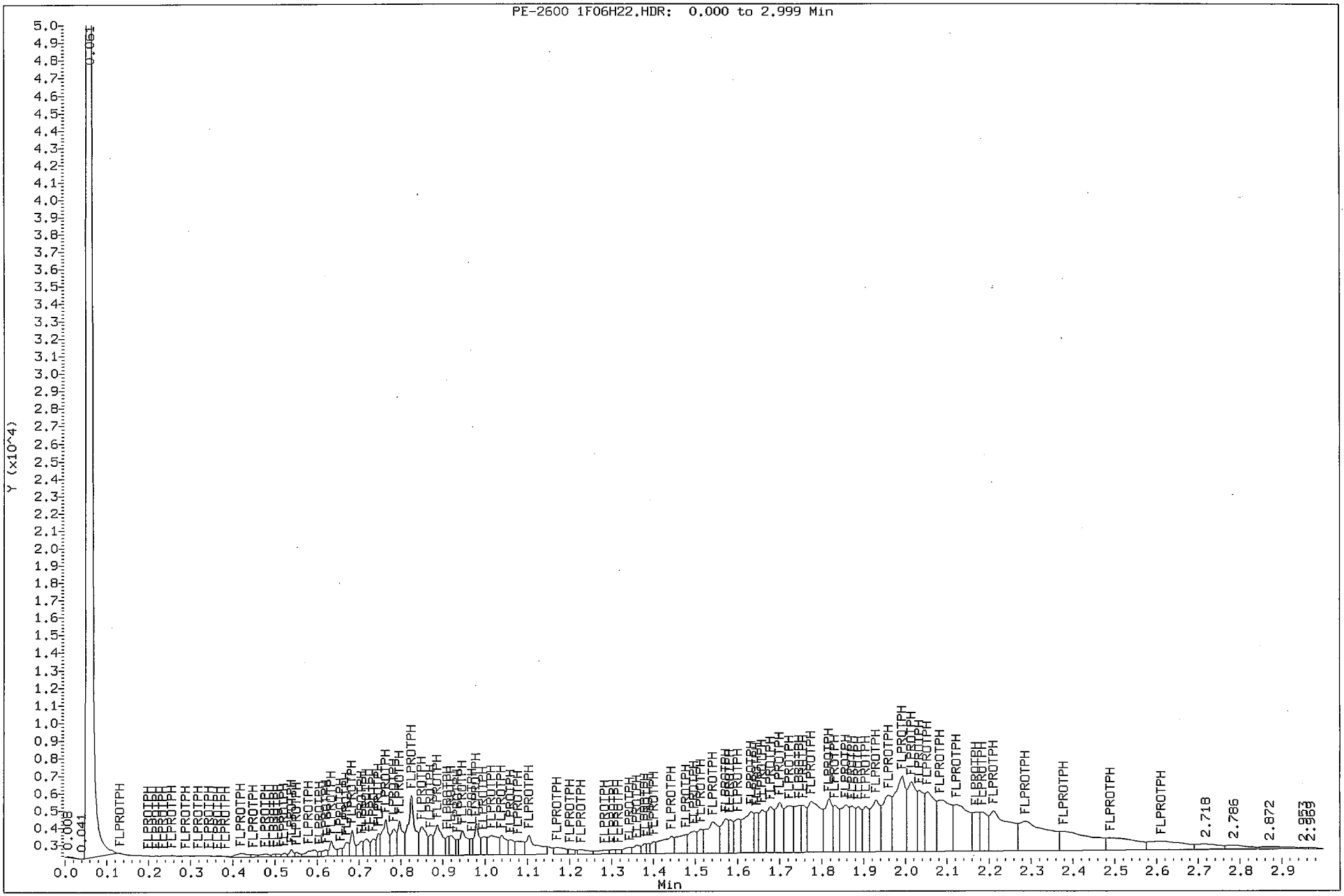

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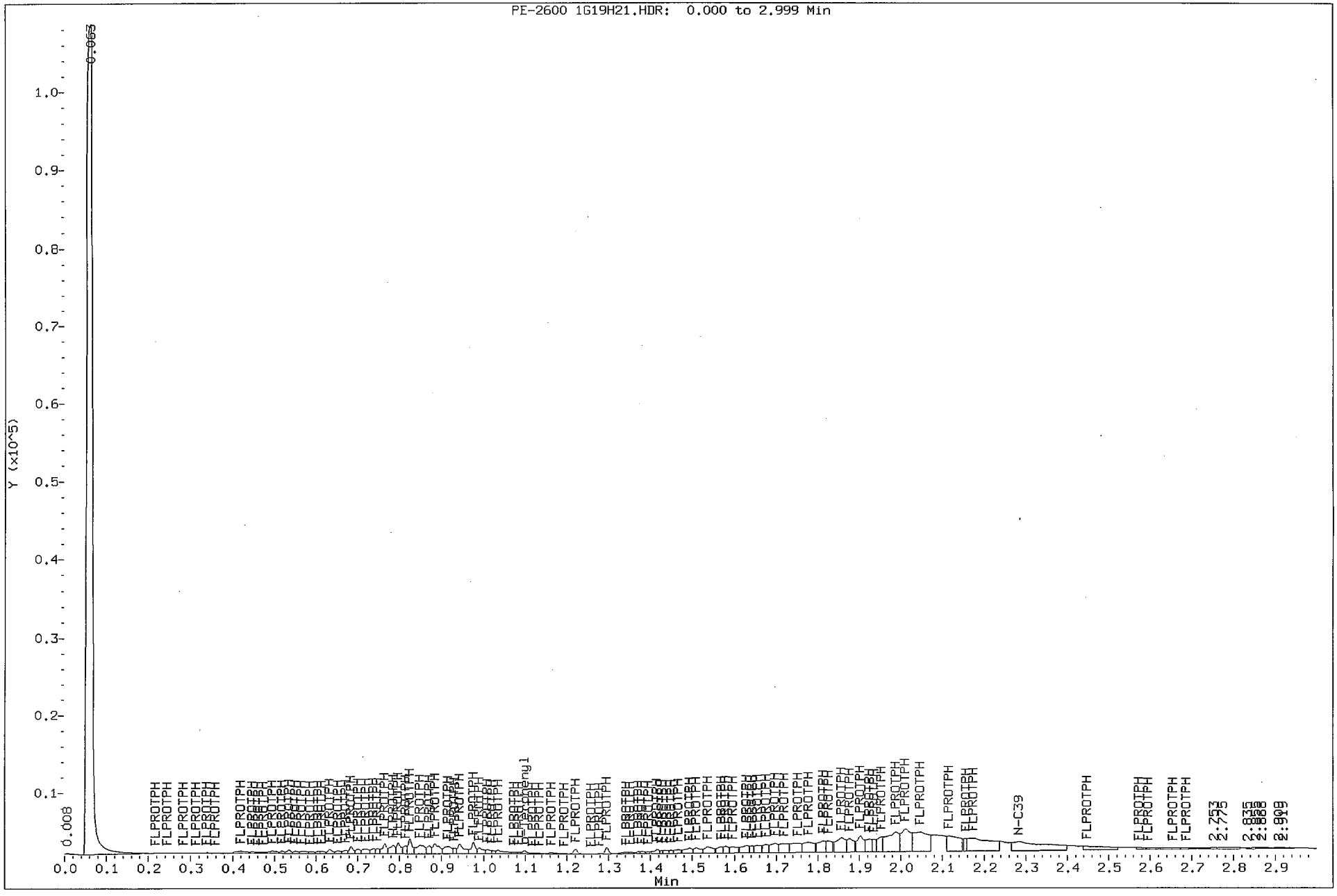

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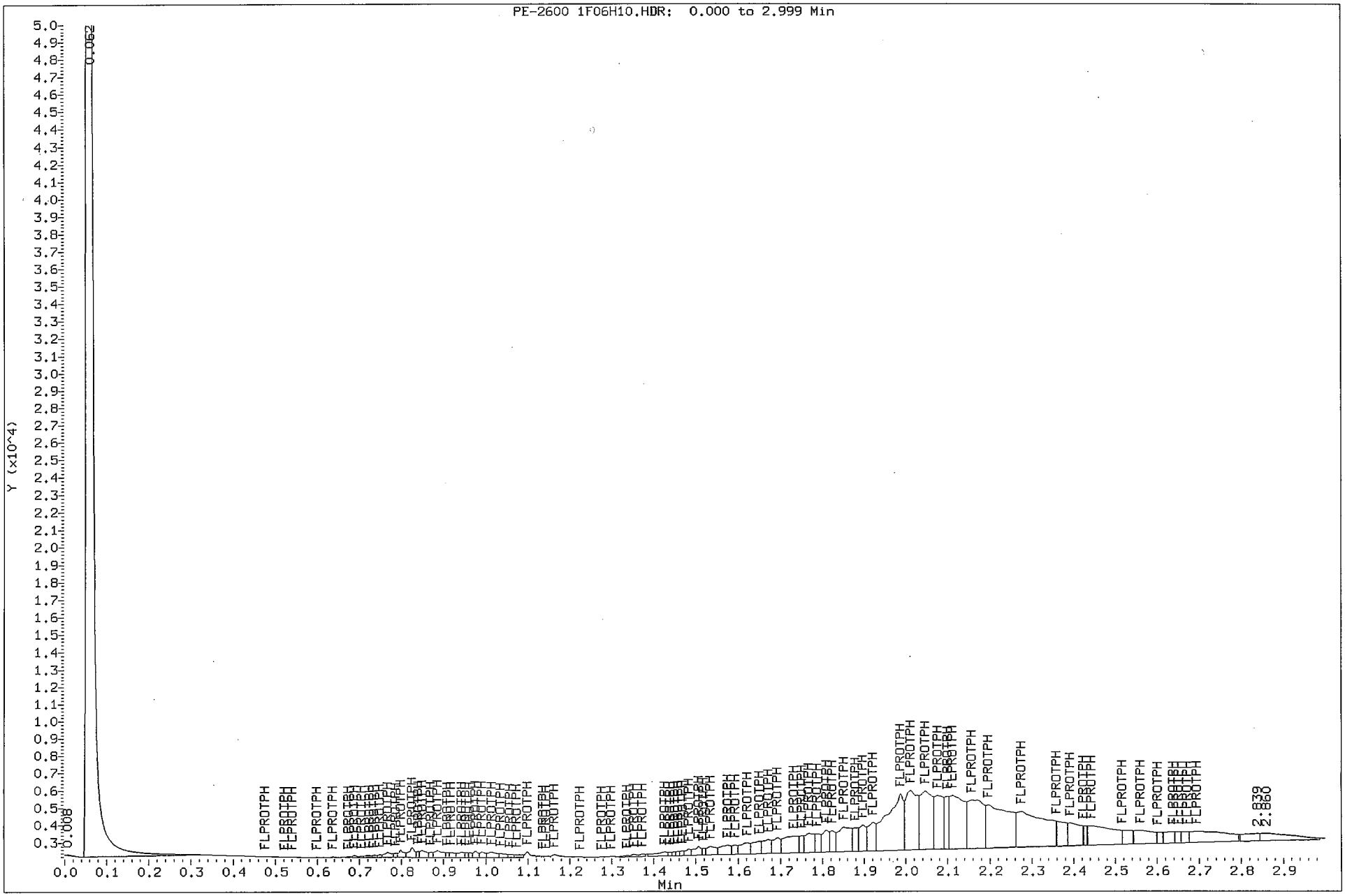

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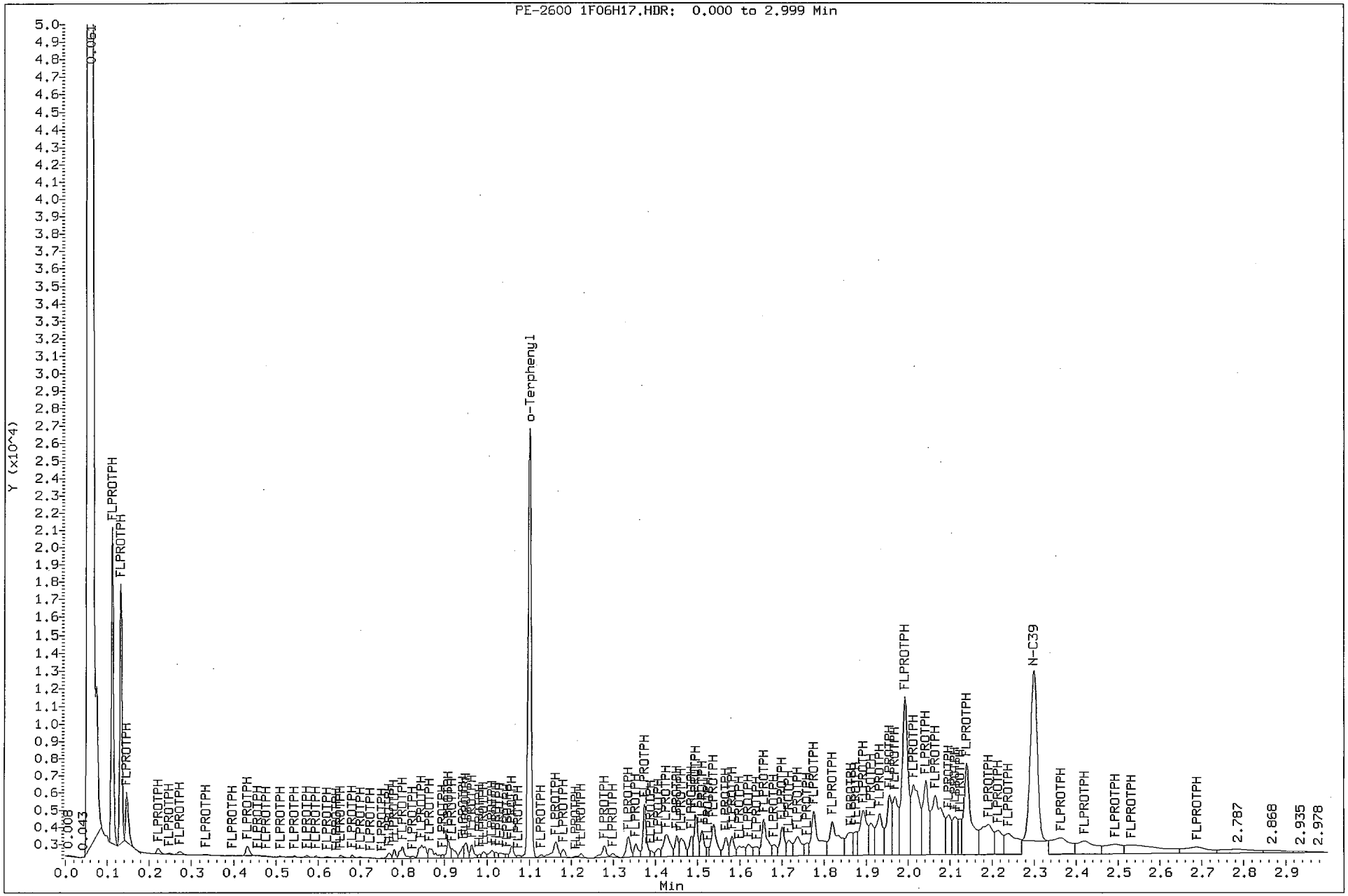

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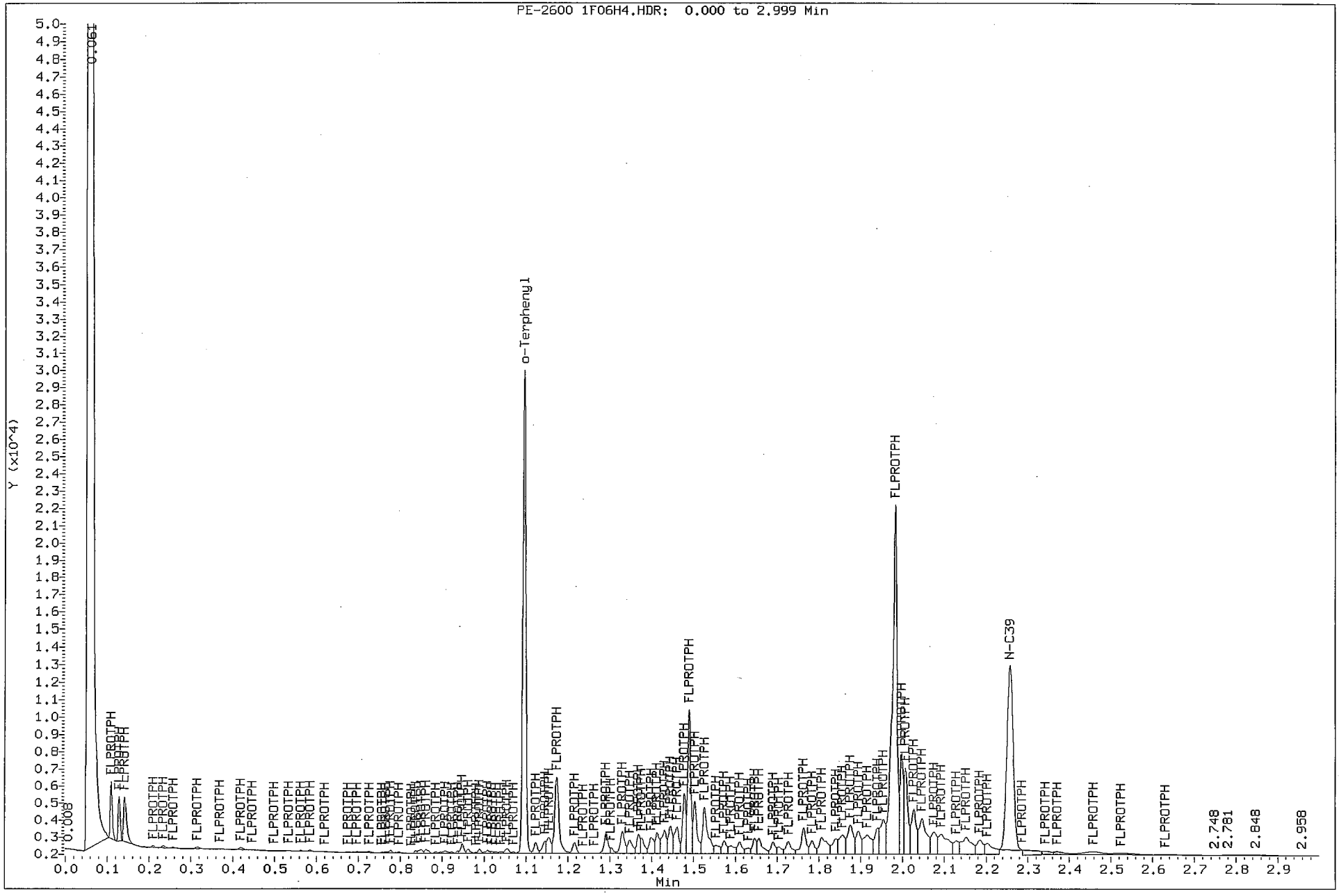

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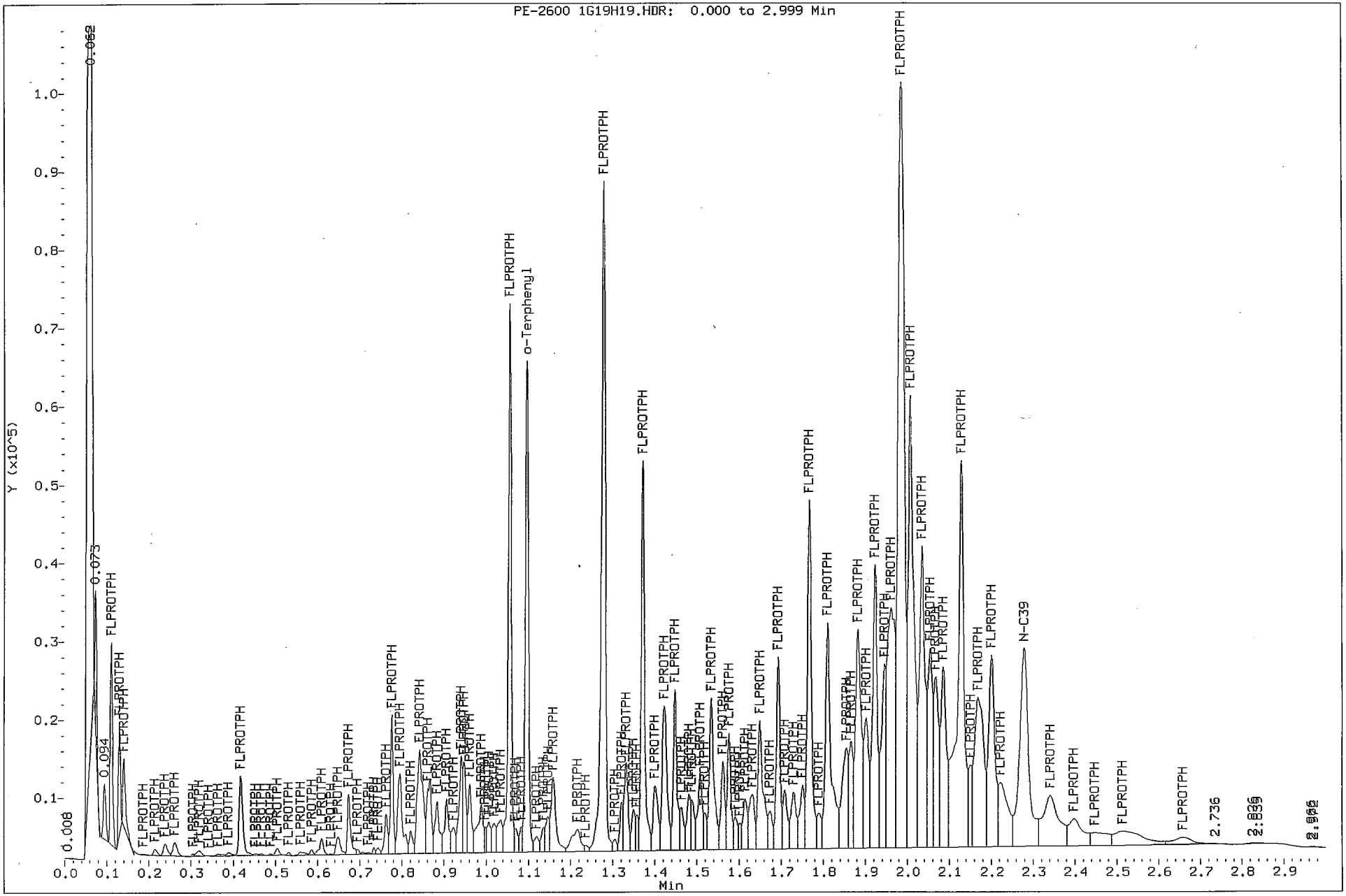
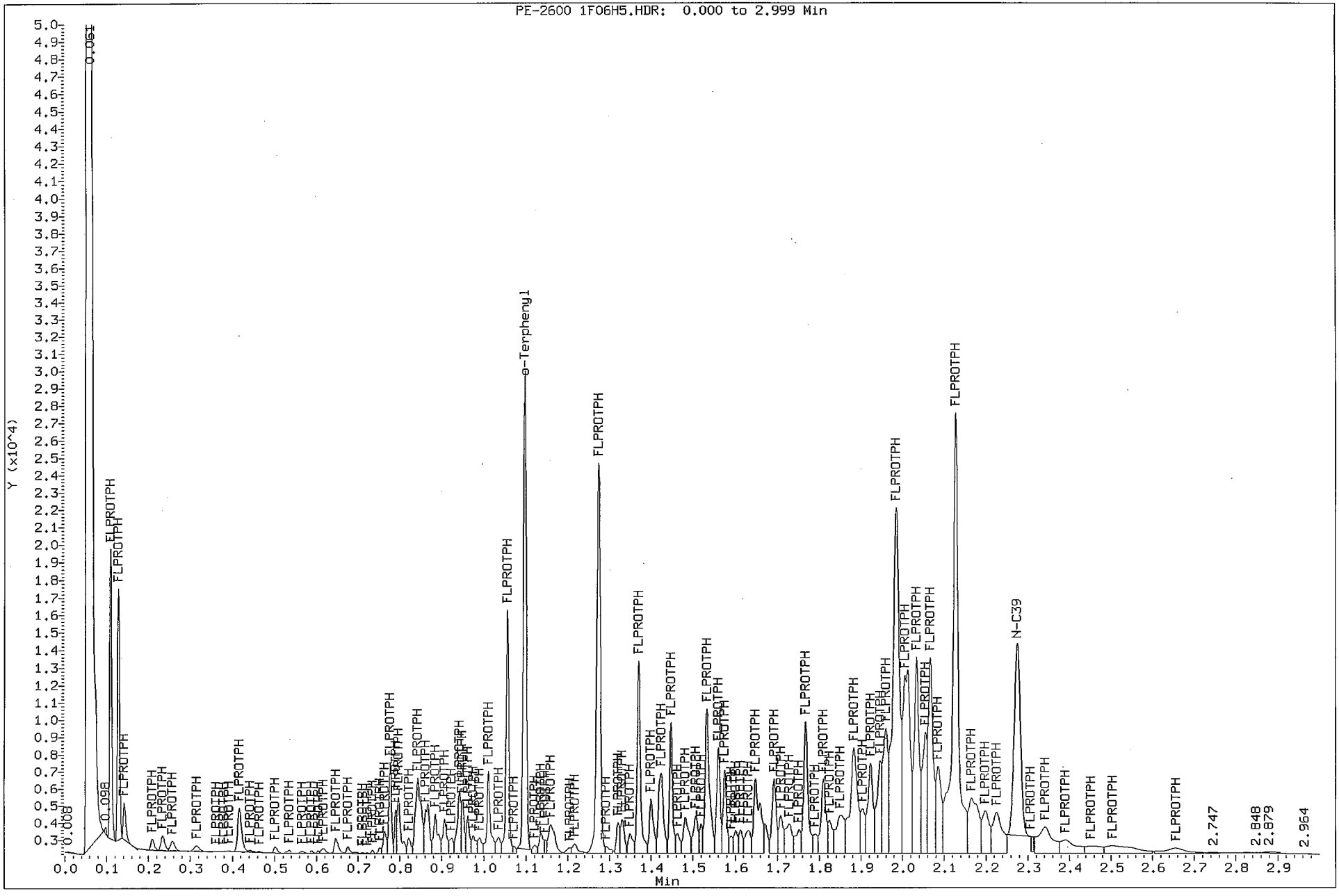
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