Geomatrix

January 18, 2006
Project 9329 Task 31

Ms. Kasey Ashley, P.G.
Engineering Geologist
California Regional Water Quality Control Board
North Coast Region
5550 Skylane Blvd., Suite A
Santa Rosa, CA 95403

Subject: Drainage Ditch 7 Soil Removal Report
Sierra Pacific Industries
Arcata Division Sawmill
2593 New Navy Base Road
Arcata, California

Dear Ms. Ashley:

Geomatrix Consultants, Inc. (Geomatrix) has prepared this report on behalf of Sierra Pacific Industries (SPI) documenting the methods and results of soil removal activities performed at the SPI Arcata Division Sawmill located in Arcata, California (the site, Figures 1 and 2). The work was performed in accordance with Geomatrix's *Work Plan for Shallow Soil Removal in Areas of Ditch 7 Showing Field Indications of Petroleum Impacts* (Work Plan) dated August 16, 2005. The Work Plan was approved by the Regional Water Quality Control Board, North Coast Region (RWQCB) in a letter to SPI dated September 8, 2005. Background information regarding the previous investigation in Ditch 7 and the objectives of the work described herein are presented below.

## Background

Personal accounts from mill personnel indicate that the area around the truck shop was formerly unpaved and historically sprayed with waste oil and other petroleum products for dust control purposes. In July 2003, surface soil and grab groundwater samples were collected from 17 locations in Ditch 7 (Figure 3) in response to requirements of Sections 12.A.5 and 12.C of the Consent Decree between the Ecological Rights Foundation and Sierra Pacific Industries, Inc., et al., (case number C-01-0520-MEJ). Field methods and the results of the investigation were reported in *Retention Pond, Ditches 6 and 7, and Truck Scale Sump Discharge Point Investigation Report*[1]. Field indications of petroleum hydrocarbons (a slight petroleum-like odor) were observed in two of the borings, D7-3 and D7-12, at a depth of 0.5

1 MFG, Inc., 2003, *Retention Pond, Ditches 6 and 7, and Truck Scale Sump Discharge Point Investigation Report*, Sierra Pacific Industries, Arcata Division Sawmill, 2593 New Navy Base Road, Arcata, California, October 21

feet below ground surface (bgs). The objective of this work was to remove shallow soil both laterally and vertically in the vicinity of these borings until no field indications of petroleum hydrocarbons were present.

## Soil Removal

SPI removed soil showing field indications of petroleum hydrocarbons in the vicinity of borings D7-3 and D7-12 on November 10, 2005 using a small loader at location D7-3 and hand shovel at location D7-12.

The soil removal at location D7-3 was centered around the former boring and extended approximately 6.5-feet to the east and to the west of the boring location. The excavation was approximately 3 feet wide at ground surface and approximately 1-foot wide at the bottom. The depth of the excavation was approximately 10 inches. The total volume of soil removed in the vicinity of boring D7-3 is estimated at approximately 20 cubic feet ($ft^3$). Soil in the bottom and sidewalls of the excavation was monitored for visual and/or olfactory indications of petroleum hydrocarbons and none were observed. Petroleum-like odors were noted in some of the excavated soil. The soil encountered was primarily silty sand with some rounded gravel. A soil sample was taken in the center of the bottom of the excavated area and labeled D7-3B-10".

The soil removal at location D7-12 was centered around the former boring and extended approximately 3.5-feet to the southwest and to the northeast of the boring. Prior to soil excavation, approximately 6 to 12 inches of organic material (leaves and rootlets) was removed from the ditch. The excavation was approximately 1.5 feet wide with near vertical walls. The depth of the excavation (below the layer of organic debris) in the vicinity of D7-12 was approximately 10 inches in the 1.5 feet centered around boring D7-12 and about 2 inches deep in the rest of the excavated area. Digging was difficult due to several alder trees located in the ditch and their roots that were encountered in the subsurface. The total volume of soil removed in the vicinity of boring D7-12 is estimated at 3 $ft^3$. The soil in the bottom and sidewalls of the excavation was monitored for visual and/or olfactory indications of petroleum hydrocarbons and none were observed. The soil encountered was primarily silty sand with some rounded gravel. A soil sample was taken in the center of the bottom of the excavated area and labeled D7-12B-10".

The two excavated areas were backfilled with clean sand and restored to the original grade. Soil generated during soil removal activities is temporarily stored at the site and covered with plastic.

## Soil Sampling Methods and Results

Soil samples collected from each of the two excavated areas were placed into 4-ounce glass jars that were sealed with Teflon®-lined screw caps. After filling, the jars were labeled and placed in an ice-cooled, insulated chest for transport to the laboratory for analysis. A chain-of-custody record was completed for the samples and accompanied the samples until received by the laboratory.

The soil samples were submitted to Friedman and Bruya, Inc., a California Department of Health Services-certified laboratory, for analyses of total petroleum hydrocarbons (TPH) as diesel and TPH as motor oil using EPA Method 8015M with a silica gel preparation procedure based on EPA Method 3630B.

TPH as diesel was detected in samples D7-3B-10 and D7-12B-10 at concentrations of 570 milligrams per kilogram (mg/kg) and 56 mg/kg, respectively. TPH as motor oil was detected in samples D7-3B-10" and D7-12B-10" at concentrations of 1,600 mg/kg and 430 mg/kg, respectively. Copies of the chain-of-custody record and laboratory report for the soil samples are included in Appendix A.

## Conclusions

Soil in the previously identified areas of Ditch 7 showing field indications of petroleum hydrocarbons has been removed in accordance with the Workplan. Residual petroleum hydrocarbons are expected to naturally degrade. Geomatrix recommends no further action relating to petroleum hydrocarbons in Ditch 7.

Should you have questions, please contact either of the undersigned at (510) 663-4100.

Sincerely yours,
GEOMATRIX CONSULTANTS, INC.

Mike Keim
Senior Environmental Scientist

Edward P. Conti, C.E.G., C.HG.
Principal Geologist

Attachments: Table 1 – Soil Sample Laboratory Analytical Results
Figure 1 – Site Location Map
Figure 2 – Site Plan
Figure 3 – Ditch 7 Soil Removal and Sample Locations, November 10, 2005
Appendix A – Analytical Laboratory Report and Chain-of-Custody Record

cc: Mr. Bob Ellery, Sierra Pacific Industries
Mr. Gordie Amos, Sierra Pacific Industries
Fred Evenson, Law Offices of Frederic Evenson
Jim Lamport, Ecological Rights Foundation

# ATTACHMENTS

Geomatrix

# TABLE 1
## SOIL SAMPLE LABORATORY ANALYTICAL RESULTS [1]
Sierra Pacific Industries
Arcata Division Sawmill
Arcata, California

| Sample ID | Date | Depth (ft bgs) | TPH as Diesel[2] (mg/kg) | TPH as Motor Oil[2] (mg/kg) |
|---|---|---|---|---|
| D7-3B-10" | 11/10/2005 | 0.83 | 570 | 1,600 |
| D7-12B-10" | 11/10/2005 | 0.83 | 56 | 430 |

Notes:

1. The samples were analyzed by Friedman & Bruya, Inc., in Seattle Washington. Samples were analyzed by EPA Method 8015 Modified (TPH as diesel and TPH as motor oil).
2. Sample extracts passed through a silica gel column prior to analysis (EPA Method 3630B).

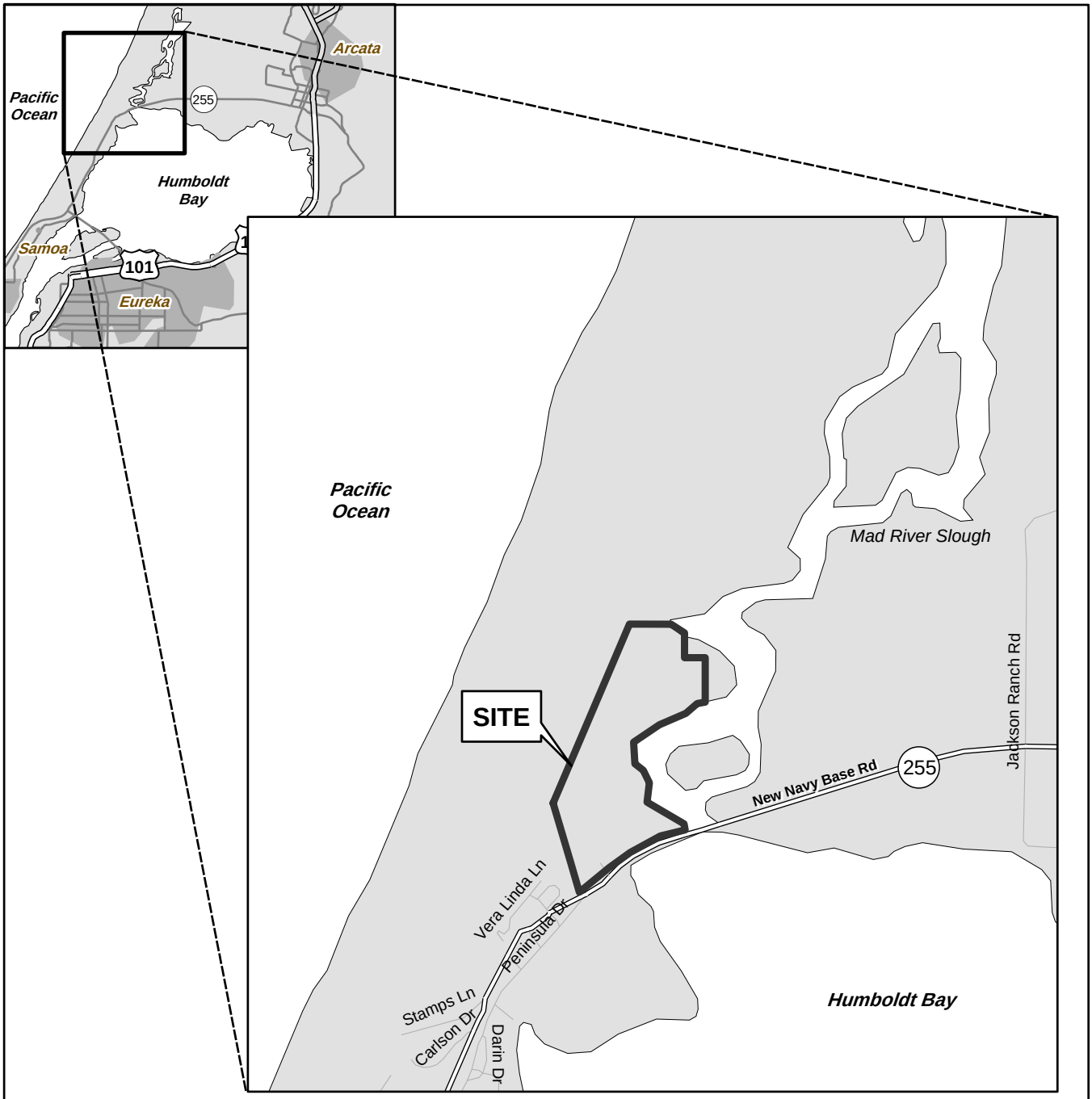
Abbreviations:

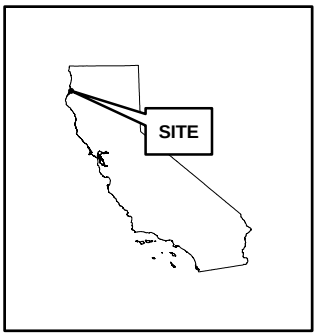
ft bgs = feet below ground surface

TPH = total petroleum hydrocarbons

mg/kg = milligrams per kilogram; parts per million

EPA = U.S. Environmental Protection Agency




California

N

0 1,200 2,400 Feet

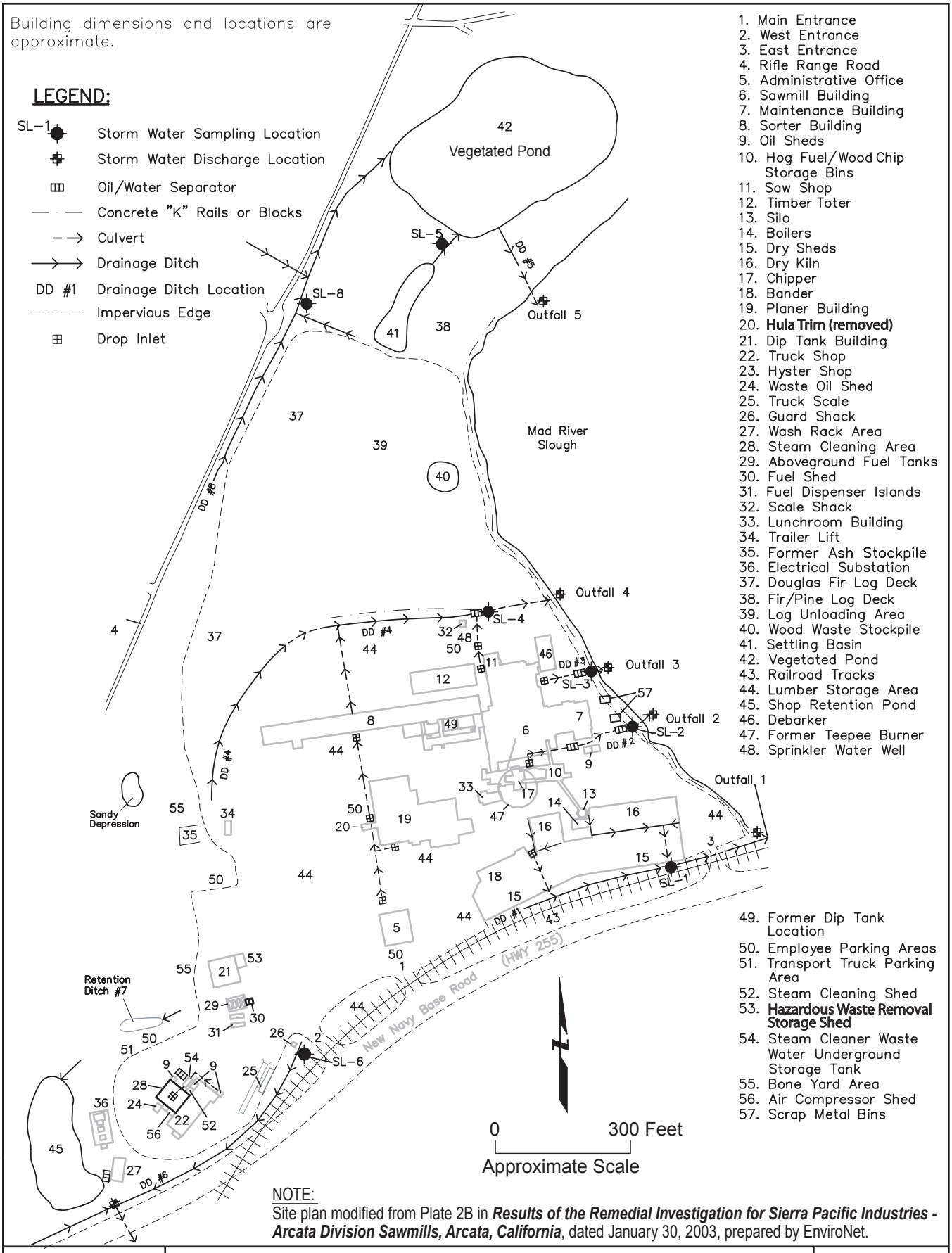
S:\9300\9329\task_23\04_0423_1q04gmpr_fig_01.mxd

GEOMATRIX

SITE LOCATION MAP
Sierra Pacific Industries
Arcata Division Sawmill
Arcata, California

Project No.
9329

Figure No.
1




NOTE:
Site plan modified from Plate 2B in ***Results of the Remedial Investigation for Sierra Pacific Industries - Arcata Division Sawmills, Arcata, California***, dated January 30, 2003, prepared by EnviroNet.

GEOMATRIX

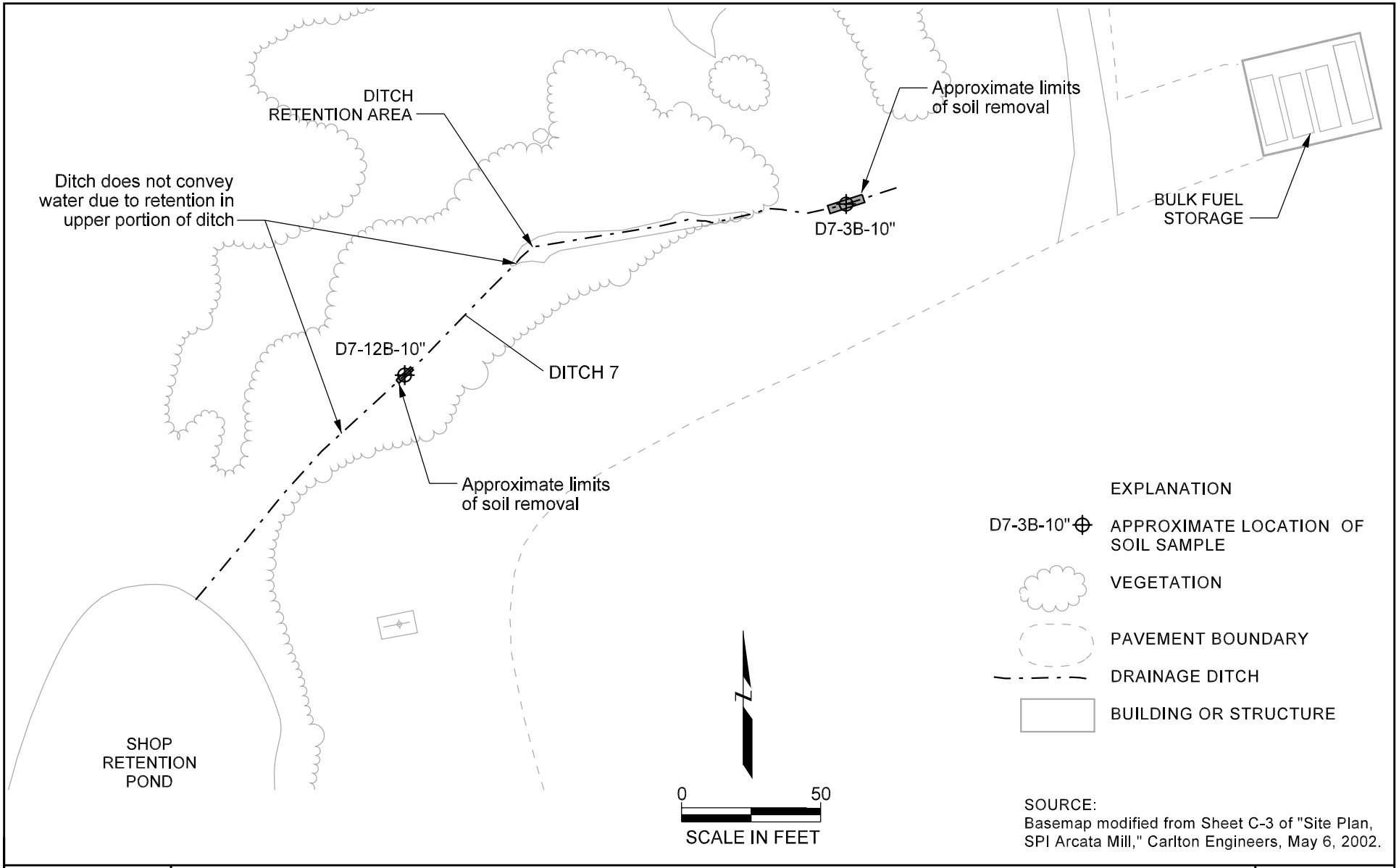
SITE PLAN
Sierra Pacific Industries
Arcata Division Sawmill
Arcata, California

Project No.
9329

Figure
**2**

S:\93009329\task_14\05_0415_wp_fig_02.ai (120905)

28-DEC-2005 15:06 iskolnik
S:\9300\9329\task_31\05_1201_sr_fig_03ditch.dgn
\\OAKPRNT1\Splash_hold Q:\iplot\ctb\geomtrx.ctb Q:\iplot\pen\MAP_4mv.pen




SOURCE:
Basemap modified from Sheet C-3 of "Site Plan, SPI Arcata Mill," Carlton Engineers, May 6, 2002.

GEOMATRIX

DITCH 7 SOIL REMOVAL AND SAMPLE LOCATIONS, November 10, 2005
Sierra Pacific Industries
Arcata Division Sawmill
Arcata, California

Project No.
9329

Figure
**3**

# APPENDIX A

# Analytical Laboratory Report and Chain-of-Custody Record

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Charlene Morrow, M.S.
Yelena Aravkina, M.S.
Bradley T. Benson, B.S.
Kurt Johnson, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
TEL: (206) 285-8282
FAX: (206) 283-5044
e-mail: fbi@isomedia.com

November 21, 2005

Mike Keim, Project Manager
Geomatrix Consultants, Inc.
2101 Webster Street, 12th Floor
Oakland, CA 94612

Dear Mr. Keim:

Included are the results from the testing of material submitted on November 11, 2005 from the SPI Arcata 9329 Task 31, F&BI 511117 project. There are 5 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Frank Colich
Project Manager

Enclosures
c: Matt Hillyard
GMC1121R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on November 11, 2005 by Friedman & Bruya, Inc. from the Geomatrix Consultants, Inc. SPI Arcata 9329 Task 31, F&BI 511117 project. Samples were logged in under the laboratory ID's listed below.

| Laboratory ID | Geomatrix Consultants, Inc. |
|---|---|
| 511117-01 | D7-3B-10" |
| 511117-02 | D7-12B-10" |

All quality control requirements were acceptable.

Date of Report: 11/21/05
Date Received: 11/11/05
Project: SPI Arcata 9329 Task 31, F&BI 511117
Date Extracted: 11/15/05
Date Analyzed: 11/16/05

## RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL USING EPA METHOD 8015M

**Sample Extracts Passed Through a Silica Gel Column Prior to Analysis**

Results Reported as µg/g (ppm)

| Sample ID<br>Laboratory ID | Diesel Range<br>($C_{10}$-$C_{25}$) | Surrogate<br>(% Recovery)<br>(Limit 67-131) |
|---|---|---|
| D7-3B-10"<br>511117-01 | 570 | 104 |
| D7-12B-10"<br>511117-02 | 56 | 96 |
| Method Blank | <50 | 101 |

Date of Report: 11/21/05
Date Received: 11/11/05
Project: SPI Arcata 9329 Task 31, F&BI 511117
Date Extracted: 11/15/05
Date Analyzed: 11/16/05

## RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS MOTOR OIL USING EPA METHOD 8015M

**Sample Extracts Passed Through a Silica Gel Column Prior to Analysis**

Results Reported as µg/g (ppm)

| Sample ID<br>Laboratory ID | Motor Oil Range<br>($C_{25}$-$C_{36}$) | Surrogate<br>(% Recovery)<br>(Limit 50-150) |
|---|---|---|
| D7-3B-10"<br>511117-01 | 1,600 | 71 |
| D7-12B-10"<br>511117-02 | 430 | 105 |
| Method Blank | <50 | 115 |

Date of Report: 11/21/05
Date Received: 11/11/05
Project: SPI Arcata 9329 Task 31, F&BI 511117

## QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL USING EPA METHOD 8015M

Laboratory Code: 511117-01 (Duplicate)Silica Gel

| Analyte | Reporting Units | Sample Result | Duplicate Result | Relative Percent Difference | Acceptance Criteria |
|---|---|---|---|---|---|
| Diesel | µg/g (ppm) | 570 | 450 | 23 h | 0-20 |

Laboratory Code: 511117-01 (Matrix Spike) Silica Gel

| Analyte | Reporting Units | Spike Level | Sample Result | Percent Recovery MS | Acceptance Criteria |
|---|---|---|---|---|---|
| Diesel | µg/g (ppm) | 500 | 570 | 127 | 71-130 |

Laboratory Code: Laboratory Control Sample Silica Gel

| Analyte | Reporting Units | Spike Level | Percent Recovery LCS | Acceptance Criteria |
|---|---|---|---|---|
| Diesel | µg/g (ppm) | 500 | 127 | 69-134 |

h - RPD results are likely outside control limits due to sample inhomogeneity.

Date of Report: 11/21/05
Date Received: 11/11/05
Project: SPI Arcata 9329 Task 31, F&BI 511117

## QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS MOTOR OIL USING EPA METHOD 8015M

Laboratory Code: 511117-01 (Duplicate)Silica Gel

| Analyte | Reporting Units | Sample Result | Duplicate Result | Relative Percent Difference | Acceptance Criteria |
|---|---|---|---|---|---|
| Motor Oil | µg/g (ppm) | 1,600 | 1,400 | 13 | 0-20 |

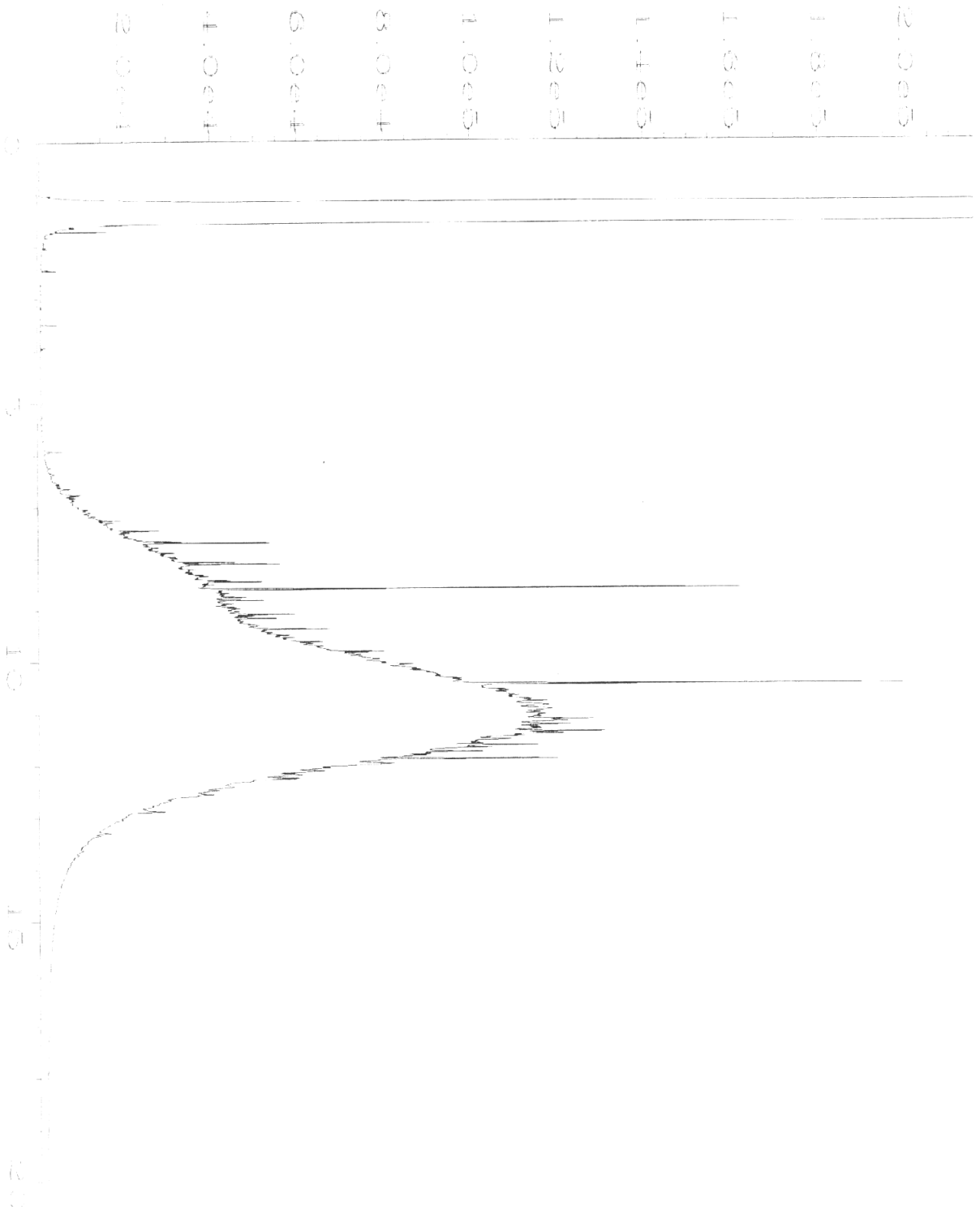
Laboratory Code: 511117-01 (Matrix Spike) Silica Gel

| Analyte | Reporting Units | Spike Level | Sample Result | Percent Recovery MS | Acceptance Criteria |
|---|---|---|---|---|---|
| Motor Oil | µg/g (ppm) | 250 | 1,600 | 1 b | 50-150 |

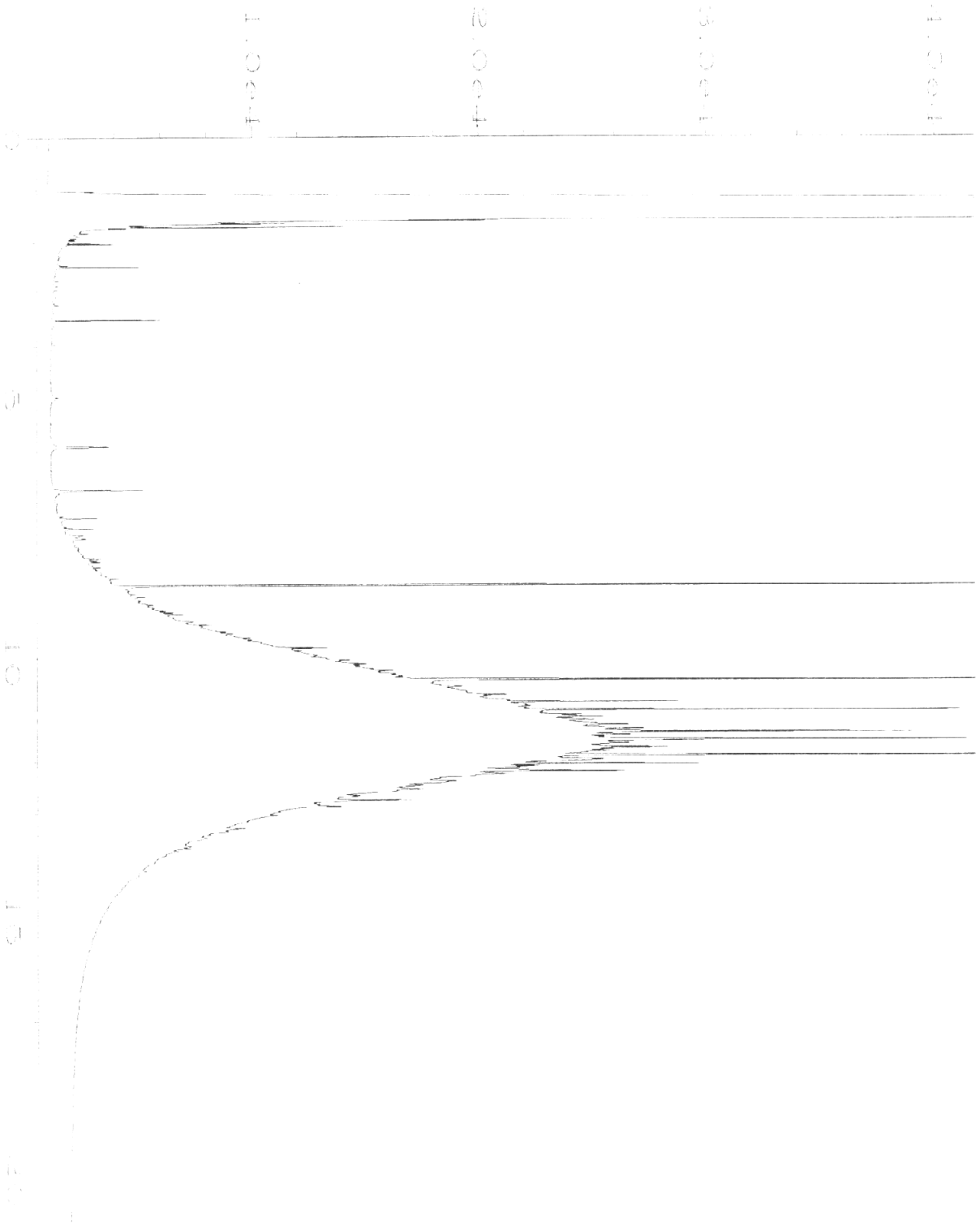
Laboratory Code: Laboratory Control Sample Silica Gel

| Analyte | Reporting Units | Spike Level | Percent Recovery LCS | Acceptance Criteria |
|---|---|---|---|---|
| Motor Oil | µg/g (ppm) | 250 | 139 | 50-150 |

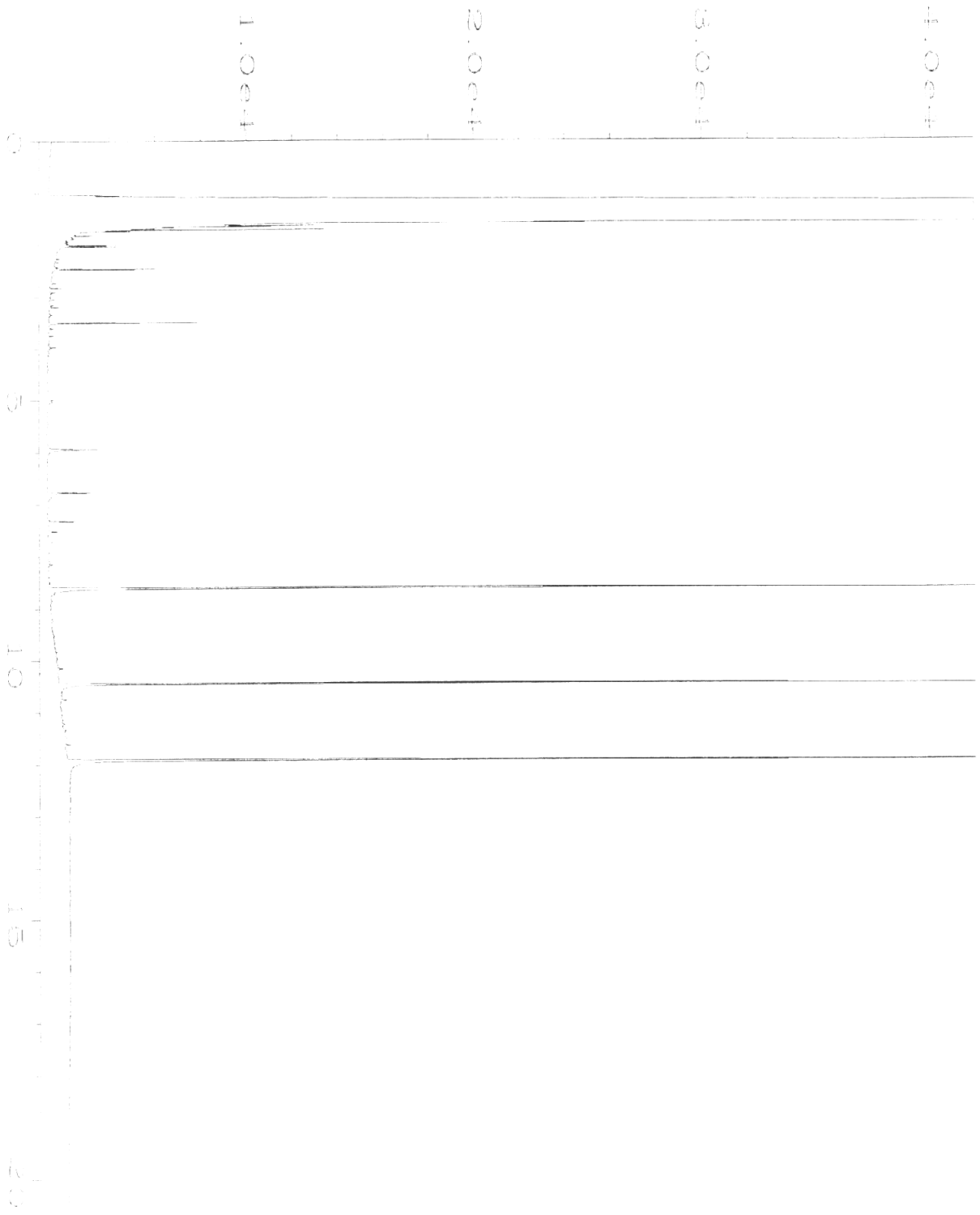
b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.



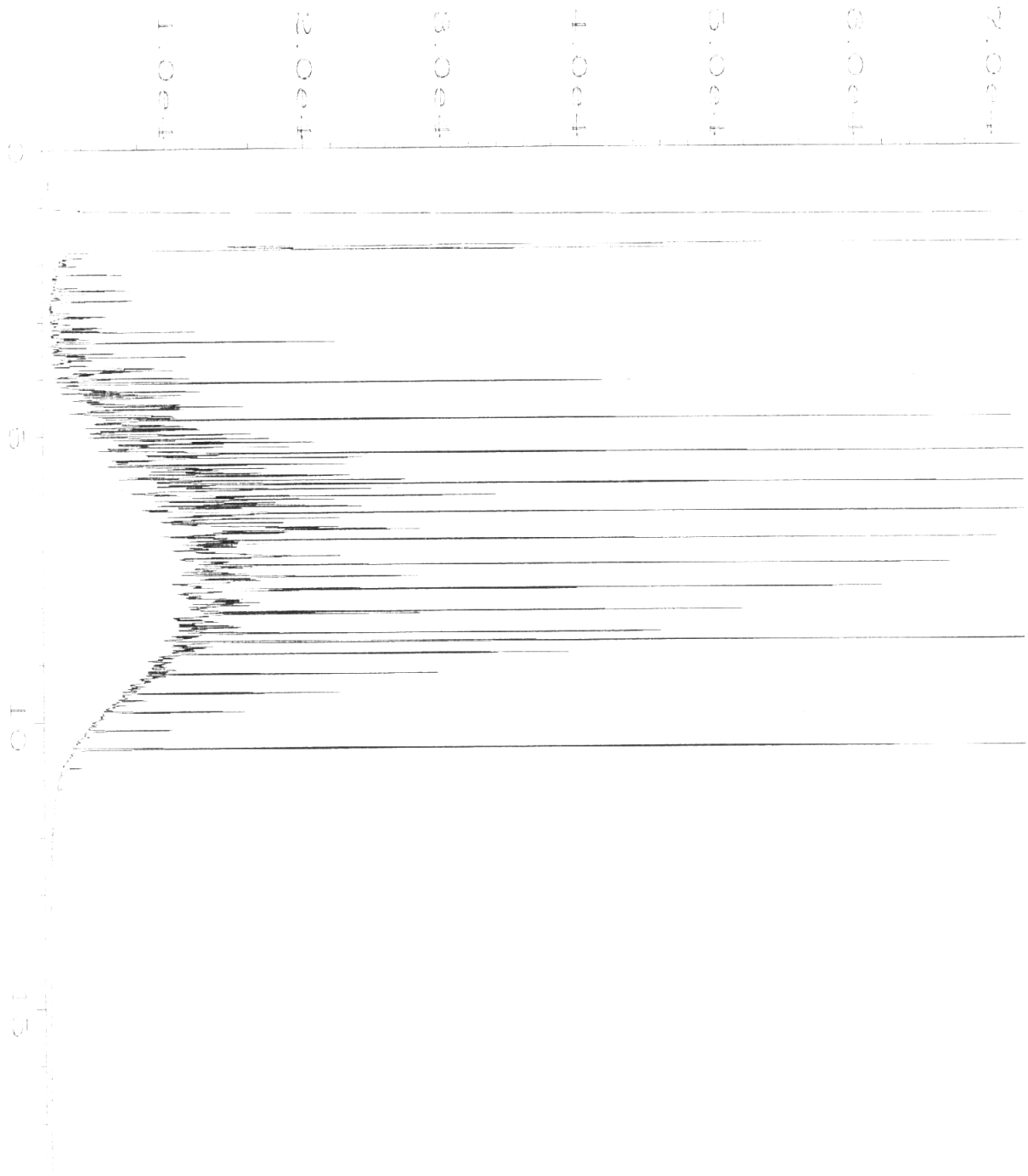
| | | | |
|---|---|---|---|
| Data File Name | : L:\HPCHEM\4\DATA\11-16-05\009F0401.D | | |
| Operator | : ME | Page Number | : 1 |
| Instrument | : GC#4 | Vial Number | : 9 |
| Sample Name | : 511117-01 sg | Injection Number | : 1 |
| Run Time Bar Code: | | Sequence Line | : 4 |
| Acquired on | : 16 Nov 05 11:16 AM | Instrument Method | : TPHDAK.MTH |
| Report Created on: | 17 Nov 05 11:15 AM | Analysis Method | : DEFAULT.MTH |



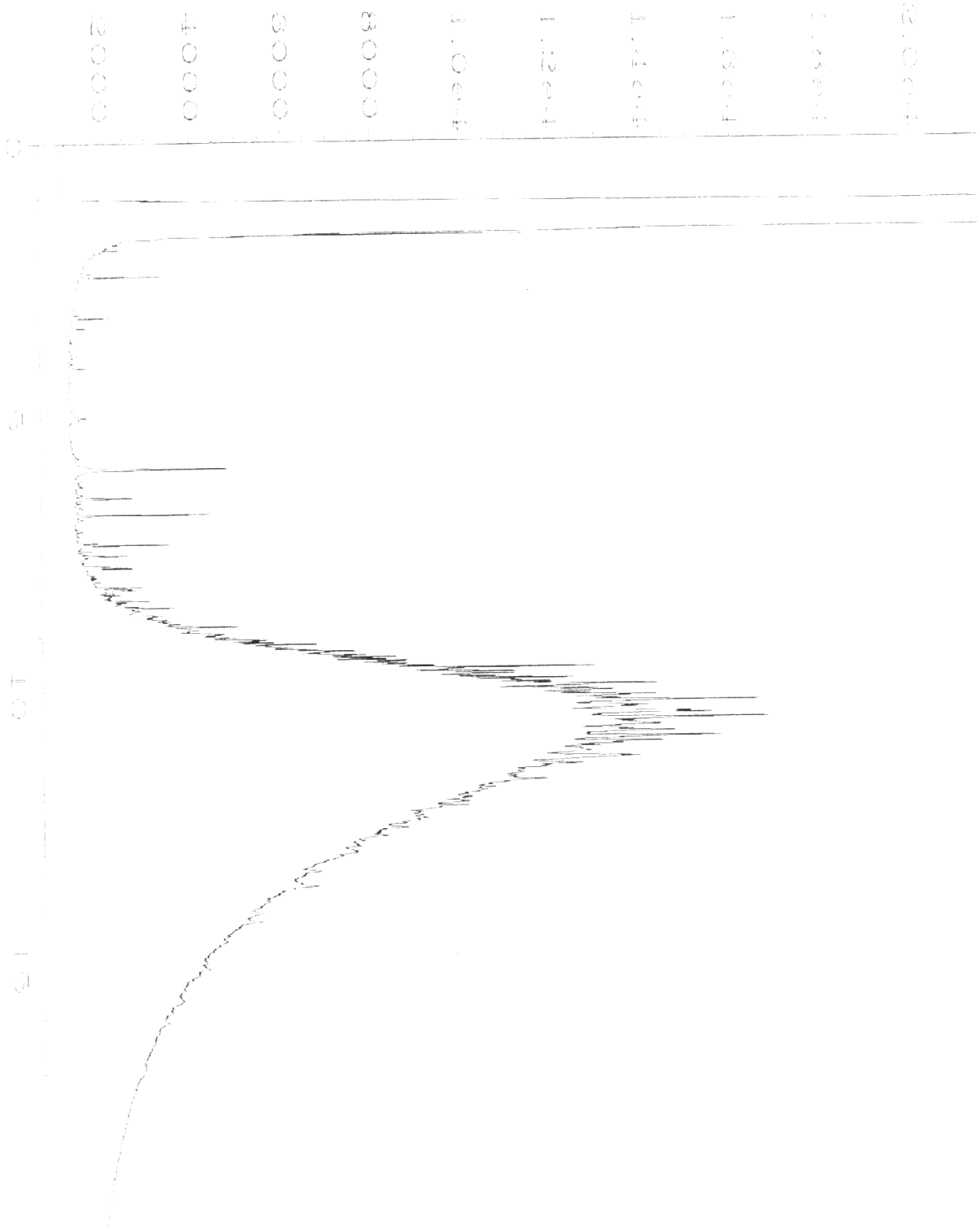
| | | | |
|---|---|---|---|
| Data File Name | : L:\HPCHEM\4\DATA\11-16-05\010F0401.D | | |
| Operator | : ME | Page Number | : 1 |
| Instrument | : GC#4 | Vial Number | : 10 |
| Sample Name | : 511117-02 sg | Injection Number | : 1 |
| Run Time Bar Code: | | Sequence Line | : 4 |
| Acquired on | : 16 Nov 05 11:44 AM | Instrument Method | : TPHDAK.MTH |
| Report Created on | : 17 Nov 05 11:15 AM | Analysis Method | : DEFAULT.MTH |




| | | | |
|---|---|---|---|
| Data File Name | : L:\HPCHEM\4\DATA\11-16-05\006F0401.D | | |
| Operator | : ME | Page Number | : 1 |
| Instrument | : GC#4 | Vial Number | : 6 |
| Sample Name | : 05-1511 mb sg | Injection Number | : 1 |
| Run Time Bar Code: | | Sequence Line | : 4 |
| Acquired on | : 16 Nov 05 09:53 AM | Instrument Method | : TPHDAK.MTH |
| Report Created on | : 17 Nov 05 11:14 AM | Analysis Method | : DEFAULT.MTH |



| | | | |
|---|---|---|---|
| Data File Name | : L:\HPCHEM\4\DATA\11-16-05\002F0201.D | | |
| Operator | : ME | Page Number | : 1 |
| Instrument | : GC#4 | Vial Number | : 2 |
| Sample Name | : 500 wadf 21-117 | Injection Number | : 1 |
| Run Time Bar Code: | | Sequence Line | : 2 |
| Acquired on | : 16 Nov 05 08:59 AM | Instrument Method | : TPHD.MTH |
| Report Created on | : 17 Nov 05 11:14 AM | Analysis Method | : DEFAULT.MTH |



| | | | |
|---|---|---|---|
| Data File Name | : L:\HPCHEM\4\DATA\11-16-05\004F0301.D | | |
| Operator | : ME | Page Number | : 1 |
| Instrument | : GC#4 | Vial Number | : 4 |
| Sample Name | : 500 MO 21-1 | Injection Number | : 1 |
| Run Time Bar Code: | | Sequence Line | : 3 |
| Acquired on | : 16 Nov 05 09:26 AM | Instrument Method | : TPHD.MTH |
| Report Created on | : 17 Nov 05 11:14 AM | Analysis Method | : DEFAULT.MTH |

[redacted] T

F.C NANO - 11-11-05

EUR 10000 A01

# CHAIN-OF-CUSTODY RECORD

DATE: 11/10/05 | PAGE 1 OF 1

PROJECT NAME: SPI Arcata

PROJECT NUMBER: 9329 Task 31

RESULTS TO: Mike Kelm

TURNAROUND TIME: STD

SAMPLE SHIPMENT METHOD: FedEx

TR# 7917 7995 5270

LABORATORY NAME: Friedman + Bruya

LABORATORY ADDRESS: 3012 16th Ave West Seattle, WA 98119

LABORATORY CONTACT: Charlene

LABORATORY PHONE NUMBER: 206-285-8282

CLIENT INFORMATION: SPI Arcata

REPORTING REQUIREMENTS:

GEOTRACKER REQUIRED: (YES) NO

SITE SPECIFIC GLOBAL ID NO.: T0602301628

SAMPLERS (SIGNATURE): Matt Hillyard

ANALYSES

| lab | DATE | TIME | SAMPLE NUMBER | TPH-D/MO | Silica gel | CONTAINER TYPE AND SIZE | Soil (S), Water (W), Vapor (V), or Other (O) | Filtered | Preservative Type | Cooled | MS/MSD | No. of Containers | ADDITIONAL COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TD | | | | | | | | | | | | | |
| 01 | 11/10/05 | 1015 | D7-3B-10" | X | X | 4oz glass jar | S | | | X | | 1 | EPA Method |
| 02 | 11/10/05 | 1020 | D7-4B-10" | X | X | 4oz glass jar | S | | | X | | 1 | 8015M |

-12-

EC 11/21/05

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| SIGNATURE: Matt Hillyard | 11/10/05 | 1300 | SIGNATURE: Nhan Phan | 11/11/05 | 09:30 |
| PRINTED NAME: Matt Hillyard | | | PRINTED NAME: Nhan Phan | | |
| COMPANY: Geomatrix | | | COMPANY: FEBT | | |
| SIGNATURE: | | | SIGNATURE: | | |
| PRINTED NAME: | | | PRINTED NAME: | | |
| COMPANY: | | | COMPANY: | | |
| SIGNATURE: | | | SIGNATURE: | | |
| PRINTED NAME: | | | PRINTED NAME: | | |
| COMPANY: | | | COMPANY: | | |

TOTAL NUMBER OF CONTAINERS: 2

SAMPLING COMMENTS:

525 Second Street, Suite 203
Eureka, California 95501-0488
Tel 707.444.7800 Fax 707.444.7848

Geomatrix